

LOCAL CONCEPT DEVELOPMENT STUDY REPORT

Kaighns Avenue (CR 607)

North Park Drive to Euclid Avenue

City of Camden and Township of Pennsauken, Camden County, New Jersey



PREPARED FOR
DELAWARE VALLEY REGIONAL PLANNING COMMISSION
CAMDEN COUNTY, DEPARTMENT OF PUBLIC WORKS

Prepared by: IH Engineers, PC
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I. INTRODUCTION

IH Engineers has prepared this Concept Development Report for improvements to Kaighns Avenue (CR 607) in Pennsauken Township and City of Camden with the assistance of: Delaware Valley Regional Planning Commission – John Coscia Jr. Camden County – Kevin Becica, PE, Camden County Engineer, Andrew Levecchia, PP, Camden County Director of Planning and Tejal Patel, Camden County Senior Engineer.

A. Foreword

Kaighns Avenue (CR 607) extends west from US Route 130 in Pennsauken Township to Front Street in the City of Camden. The total length of Kaighns Avenue is 2.46 miles with 0.16 miles in Pennsauken Township and 2.3 miles in the City of Camden. The Cooper River crosses under Kaighns Avenue 0.16 miles from the intersection with US Route 30. The Kaighns Avenue Bridge (NJ Structure # 043B006) over the Cooper River is a simply supported, two span concrete encased steel girder, floorbeam and stringer structure built in 1924. The total bridge length is one hundred twelve feet (112') and the width between the girders is forty-two feet (42'). Eight foot (8') wide sidewalks are cantilevered off both bridge girders and have a one foot (1') wide parapet on the outside edge. The Kaighns Avenue Bridge is located approximately five hundred feet (500') north of the Kaighns Avenue Dam (aka Cooper River Dam), NJ Structure No. 31-66. The Kaighns Avenue Dam is a movable tide gate which is used to prevent Delaware River flood and tide waters from inundating the Cooper River. The Cooper River is the boundary between Pennsauken Township and Camden City, in Camden County.

The project limits for the Kaighns Avenue Local Concept Development Study are from Euclid Avenue in Camden to North Park Drive in Pennsauken. The project limits are shown on the Project Location Map and Straight Line Diagram found in *Appendix E* and *Appendix F*, respectively.

Kaighns Avenue (CR 607) is a heavily traveled corridor that transects the Parkside Neighborhood of Camden. The roadway is prone to tidal flooding and plagued by road closures during regular rainfall and high tide events. Flooding to the north of Kaighns Avenue is the result of a hurricane event in 1974 that breached the earthen berm located between the Cooper River and Farnham Park. The failure of the berm allows the Cooper River to inundate a low lying area of Farnham Park (known as Lower Farnham Park) adjacent to a low section of the roadway between the Kaighns Avenue Bridge and the entrance drive into the Veteran's Cemetery. Road closures due to flooding on Kaighns Avenue occur between 15-18 times annually.

B. Original and Successor Projects

Kaighns Avenue was established by John Kaighn, who purchased 460 acres from Robert Turner in 1696 and a lane was established connecting his plantation with the already established settlement on Newton Creek. While the exact location of this first lane is not known, it is almost certain that it closely followed the current Kaighns Avenue location based on the topography of the ground and the fact that the Indian trail to Haddonfield already existed. In the deeds dated before 1730, the lane is called Kaighns Lane, Kaighns Point Lane, or Kaighns Point Avenue. When the roadway was surveyed in 1810, it had already become an established thoroughfare.

With the establishment of a ferry at Kaighns Point, Kaighns Avenue's position as a street for commerce and industry was guaranteed. Businesses located on Kaighns Avenue during the 19th century included the Capewell Glass Works and John Cooper's lumber, ice, and coal business. Around the turn of the century Kaighns Avenue near Broadway became one of the premier retail streets in Camden, with many Jewish-American businesses finding success. When the Parkside section of Camden was developed, Kaighns Avenue east of Haddon Avenue became one of the more fashionable neighborhoods in the city, with several churches built between Haddon Avenue and Park Boulevard. (Ref: <http://dvrbs.com/camden-streets/camdennj-streets-Kaighnsavenue.htm>).

The Kaighns Avenue Bridge structure (NJ Structure # 043B006) was constructed in 1924. The bridge is a two span structure with simply supported concrete encased steel through girder, floorbeams and stringers. The bridge design has no redundancy and is fracture critical, which means if one bridge element fails the entire bridge structure fails. There have been no alterations to or widening of the structure since it was constructed in 1924.

Projects planned within the vicinity of the Kaighns Avenue Local Concept Development Study include the replacement of the Camden High School located at Park Boulevard and Baird Boulevard. In addition, the Camden Board of Education building located to the south of Kaighns Avenue, with driveway access within the project limits, is currently not being fully utilized.

C. Data Reviewed

Various sources were consulted to obtain information on the existing conditions within the Concept Development Study area. The information was evaluated to determine areas of non-conformance with current design standards and to form the base data for use in the development of alternatives. The As-Built plans dated June 21, 1924 (Design of Bridge No. 63 over Cooper River – Kaighns Avenue, Pennsauken Township, Camden County) were reviewed and are included in *Appendix B*.

Numerous field visits were conducted to ascertain existing conditions which are documented through photographs included in *Appendix E*.

D. Design Standards

The design standards utilized in the analysis of the existing conditions, identification of deficiencies within the project area, and concept development of alternatives include the following:

1. NJDOT Roadway Design Manual (NJDOT-RDM)
2. NJ State Highway Access Management Code (Access Code)
3. A Policy on Geometric Design of Highways and Streets (AASHTO)
4. Roadside Design Guide (AASHTO)
5. Manual on Uniform Traffic Control Devices (MUTCD)
6. Design Manual for Bridges and Structures, 5th Edition – NJDOT, 2010
7. LRFD Bridge Design Specifications, Customary U.S. Units, 6th Edition – AASHTO, 2012 with current Interims.

E. Characteristics of the Roadways and Surrounding Area

Kaighns Avenue (CR 607) over the Cooper River in Camden City is an undivided roadway with a twelve foot (12') lane and an eight foot (8') shoulder in each direction with an eight

foot (8') multi-use path on the south side and a six foot (6') sidewalk on the north side. Kaighns Avenue is classified as an Urban Minor Arterial with a posted speed limit of 25 mph. Kaighns Avenue starts at the interchange of Route US 130, Route US 30 and Route NJ 38, known as the Airport Circle and ends at Front Street with a total length of 2.46 miles. The Kaighns Avenue Bridge is located 0.16 miles west of the Airport Circle.

The land uses surrounding the Kaighns Avenue project include a mix of business, educational, religious institutions, open space and residential uses. Businesses to the east of the project include The Pub, Sneaker Outlet and Village Thrift. Educational uses in the area include Camden High School, High School Athletic Fields, the Board of Education property (previously MetEast High School) and the Cooper B. Hatch Family School. The open space areas include Farnham Park and Camden County Veterans Cemetery. Religious institutions in the area include the Victory Temple Community Church and the Parkside United Methodist Church. The residential uses include the Boys and Girls Club of Camden County and the Parkside residential neighborhood. *Appendix E* includes an aerial map and site photographs of the bridge structure and uses in the surrounding area.

F. Concept Development Public Involvement Action Plan

Public participation is a crucial element in the successful completion of this proposed transportation project. A comprehensive and pro-active Public Involvement Action Plan (PIAP) is fundamental to organizing and promoting public participation. The PIAP is designed to promote an on-going partnership to ensure the impacted communities are considered, informed and involved in the project's process and benefits. The public outreach process assists in the development of public understanding of the problem definition and provides an outlet for public involvement to finalize the selection of a preferred alternative. The implementation of the PIAP is a dynamic process, and will be updated throughout the life of the project.

1. Public Involvement Goals

- Inform and educate the community of the project and gain agreement on the problem definition.
- Provide effective education to the public regarding the funding, permitting, design and construction process.
- Clearly communicate the public's role in this process.
- Provide this information in a clear, concise manner while encouraging feedback.
- Provide a convenient and effective mechanism for the public to offer input in the development of the project.
- Obtain public input on issues and potential opportunities.
- Build public support for the Preferred Alternative through early public involvement and the early selection of a Preferred Alternative.
- Consider public interest in the implementation of the Preferred Alternative to ensure that the Final Design incorporates and addresses public concerns.

2. Public Involvement Action Plan (PIAP) Implementation, Strategies and Techniques

The comprehensive PIAP is an outreach program intended to provide information to the public, and then provide a forum for all stakeholders to offer feedback. The PIAP is dynamic and evolves with each stage of the project. Using a variety of techniques, implementation of the program will involve early, frequent, and continuous public

consultation. A flexible and adaptable process assists in identifying issues early in the concept design process and prior to final engineering design.

3. Stakeholder Mailing List

Key stakeholders have been identified and a mailing list developed. The stakeholder list has been updated throughout the duration of the Concept Development Study. The stakeholder list contains a database of names and addresses comprised of NJDOT, County and Local Officials, agencies, emergency services and community groups. The stakeholder list is contained in *Appendix I*.

II. PURPOSE AND NEED

The purpose of the Kaighns Avenue Local Concept Development Study is to improve and increase the safety of the transportation system for all motorized and non-motorized users by addressing the bridge deficiencies and the roadway flooding during regular and high tide events with minimal environmental impacts.

A. Bridge Needs

According to the Cycle # 16 Bridge Re-Evaluation Survey Report dated March 25, 2015, the overall condition of the structure is fair due to the superstructure and substructure conditions. The deck is in fair condition due to longitudinal and transverse cracks, small spalls and patched areas (10% deck area) in the bituminous concrete deck overlay along with large potholes near the pier deck joint. There are several spalled areas with heavy efflorescence/stalactite contamination throughout the underside of the deck.

The superstructure is in fair condition due to the spalls on the bottom flange of the through girders and floorbeams concrete encasement with exposed steel along with incipient spalls, cracks and efflorescence throughout. The exposed steel exhibits moderate to severe corrosion. The stringer concrete encasements exhibit cracks throughout with heavy efflorescence and stalactites. The bearings are moderately to severely rusted.

The substructure is in fair condition due to moderate to severe scaling of abutment breastwalls along with a few spalls with exposed rebar on the bridge seats. The pier exhibits spalls with cracking and scaling on both faces, and a few spalls with exposed rebar at the north and south fascias.

The bridge is a riveted steel, concrete-encased through girder structure and is fracture critical as well as internally non-redundant.

The bridge approach roadway is rated with a satisfactory condition due to wide transverse cracks in the west approach roadway and uneven large bituminous concrete patched areas.

B. Scour Needs

An underwater inspection was performed during the Cycle # 16 Inspection on June 11, 2015. The findings indicate that the structure is in fair condition due to the ½” deep scaling with exposed aggregate (in 3’-4’ high bands) on the pier, abutment breastwalls and wingwalls. Temporary scour repairs completed in 2015 include new sheet piling (backfilled with concrete) along the full length of abutments (with timber relieving platforms); new fabric formed grout bags placed around the entire perimeter of the

concrete pier (with timber relieving platform); and filling the timber relieving platforms /abutments/pier (with exposed timber piles) with grout/concrete.

Based on the Stage II In-Depth Scour Evaluation, the structure is determined to be scour critical because the total estimated scour depth is below the pile tip limits.

C. Roadway Needs

Kaighns Avenue is a heavily traveled corridor that transects the Parkside Neighborhood of Camden and is prone to tidal flooding and plagued by road closings during regular rainfall and high tide events. Flooding as a result of a 1974 hurricane event that breached a nearby earthen berm subsequently allows the Cooper River to inundate a low lying area of Farnham Park which is directly adjacent to a 1/3 mile stretch of Kaighns Avenue. Road closing events due to flooding number between 15-18 times annually. In addition, the vertical alignment of Kaighns Avenue plays a role in the continued flooding. Over time high tides and regular rainfall have led to total washout, undermining the road structure, and severe ice wedging. Non-motorized transportation challenges include the sidewalk and multi-use trail that are in severe disrepair due to continual wash out.

Based on our survey and the 2012 NJDOT Design Exception Manual, there are no Controlling Substandard Design Elements (CSDE) within the project limits.

D. Goals and Objectives

The intent of the Kaighns Avenue Local Concept Development Study is to address the purpose and need while minimizing environmental, quality of life, access, right of way, traffic and utility impacts. Other important issues that will be considered include reducing the number of flooding events (15-18 annually) and increasing the service life of the Kaighns Avenue Structure over the Cooper River.

III. EXISTING INVENTORY AND CONDITION

A. Existing Bridge Inventory and Condition

IH performed a field investigation to gather data on the bridge and the surrounding area. The team thoroughly inspected the area as necessary to complete the tasks laid out in the scope of work. Structure dimensions were recorded and photos of the bridge structure and adjacent area were documented.

The bridge is a two span, simply supported concrete encased steel girder, floorbeam and stringer structure, built in 1924. The structure length is one hundred twelve feet (112'), with an out-to-out width of forty two feet (42') and a curb-to-curb width of forty feet (40'). Eight foot (8') sidewalks are cantilevered on the outside of both girders. The bridge was constructed perpendicular to Cooper River. The average freeboard is eleven and one tenth feet (11.1').

Condition: The bridge is a riveted steel, concrete-encased through girder structure and is fracture critical as well as internally non-redundant.

The Cycle # 16 Bridge Re-Evaluation Survey Report (03/25/2015) indicates that the overall condition of the structure is fair due to the superstructure and substructure conditions. The deck is in fair condition due to longitudinal and transverse cracks, small spalls and patched areas in the bituminous concrete deck overlay (10% of the deck area),

and large potholes near the pier deck joint. The underside of the deck exhibits several spalled areas with heavy efflorescence, stalactites and contamination throughout. The superstructure is in fair condition due to the spalls throughout all structural members. The bottom flange concrete encasements have spalled away in many areas exposing steel with moderate to severe corrosion and there are incipient spalls with cracks and efflorescence throughout. The bearings are moderately to severely rusted and the rocker bearings at the pier are frozen solid with rust. The substructure is in fair condition due to moderate to severe scaling of abutment breastwalls along with a few spalls with exposed rebar on the bridge seats. The pier exhibits spalls with cracking and scaling on both faces, and a few spalls with exposed rebar on the north and south ends.

B. Scour

An underwater inspection was performed in conjunction with the Cycle # 16 Bridge Re-Evaluation Survey on June 11, 2015. The findings indicate that the structure is in fair condition due to the ½” deep scaling with exposed aggregate (in 3’-4’ high bands) and spalls on the pier, abutment breastwalls and wingwalls. Temporary scour repairs completed in 2015 include new sheet piling (backfilled with concrete) along the full length of abutments (with timber relieving platforms); new fabric formed grout bags placed around the entire perimeter of the concrete pier (with timber relieving platform); and filling the timber relieving platforms/abutments/pier (with exposed timber piles) with grout/concrete.

C. Existing Roadway Inventory and Condition

Design elements are inherently dependent on traffic volumes and design speed. The speed limit along Kaighns Avenue is 25 mph based on the NJ Straight Line Diagram. Therefore, in accordance with Table 2-1 of the NJDOT-RDM, the design speed is 30 mph. According to Table 4-1 of the NJDOT-RDM, the minimum Stopping Sight Distance (SSD) for a design speed of 30 mph is two hundred feet (200’).

Posted Speed Limit	25 mph		
Design Speed	30 mph		
Design Element	Existing	Proposed	Minimum Required
Lane Width	12’	12’	11’
Shoulder Width - South	8’	8’	8’
Shoulder Width - North	8’	8’	8’
Cross Slope	1%	1.5%	1.5%
Super Elevation	N/A	Tangent Alignment	
Stopping Sight Distance	N/A		
Minimum Radius Curve	N/A		
Minimum Grade	2.24%	0.3%	0.3%
Bridge Width curb-to-curb	40’	40’	40’
Load Rating	HS 70	HL 93	HL 93
Clearances	12’	12’	NA

D. Existing Utilities

IH Engineers prepared and distributed the Utility Contact Letters, requesting verification of existing and/or proposed facilities within the project limits along with a name, address and telephone number of the appropriate contact. This letter was sent to those utilities that

have facilities within the project limits. Based on information provided to date, the following utility providers have facilities within the study limits:

- Electrical – PSE&G, 26KV and 13KV overhead distribution line along the north side of Kaighns Avenue between North Park Drive and Euclid Avenue.
- Cable – Comcast
- Gas – PSE&G, underground twenty four inch (24”) gas line (CI 15 PSI)
- Water – Merchantville-Pennsauken Water Commission
- Water – City of Camden
- Sewer – City of Camden and Pennsauken Township
- Telephone – Verizon Communications - NJ

The Cycle # 16 Bridge Re-Evaluation Survey Report states that the twenty four inch (24”) diameter gas line (CI 15 PSI) is supported on the upstream (i.e. south) face of the structure. The same is confirmed by the utility owner. Responses to the Utility Contact Letters can be found in *Appendix I*.

E. Summary of Existing Deficiencies

Based on the survey and the 2012 NJDOT Design Exception Manual, there are no geometric and roadway Controlling Substandard Design Elements (CSDE) within the project limits.

F. As-Built Plans, Right of Way Maps and Jurisdiction Map

As-Built Plans were provided by Camden County for the original bridge structure, which includes plan, elevations, and structural details (see *Appendix B*).

Copies of Jurisdictional Limit Maps and Right of Way maps were not available. Camden City and Township of Pennsauken tax maps are included in *Appendix C*.

IV. TRAFFIC AND CRASH SUMMARY

A. Traffic Operations

Kaighns Avenue (CR 607) provides one through travel lane in each direction on the bridge over the Cooper River and within the project limits. Kaighns Avenue traffic is uncontrolled in the area of the bridge; traffic is free-flowing westbound up to the traffic signal at Park Boulevard (2,700 feet west of the bridge) and eastbound to the stop sign at US Routes 30/130, the “Airport Circle” (800 feet east of the bridge).

Construction can be expedited (and quality maximized) with the bridge fully closed to traffic, allowing for complete demolition and reconstruction all at once (i.e., allowing larger monolithic concrete pours). Therefore, reconstruction alternatives assume full closure of Kaighns Avenue to vehicular and pedestrian traffic, with detours to adjacent municipal, County and State routes.

The Camden County Engineer’s Office provided IH with copies of detour plans that have been used to address flooding-related road closures in the area, on Baird Boulevard (to the north and west of the subject bridge) and on Kaighns Avenue. The first of these figures addresses a detour of Baird Boulevard via Kaighns Avenue; the second shows the detour route assuming Kaighns Avenue is under water. Given the information on these two

drawings, we have prepared a preliminary Detour Plan assuming a Kaighns Avenue closure, and detour via Baird Boulevard and Admiral Wilson Boulevard (U.S. Route 30).

B. Traffic Data

No traffic volumes on Kaighns Avenue within this study area are available from the NJDOT Roadway Information and Traffic Monitoring System Program web site (Interactive Traffic Count Reports). IH staff conducted a two-way traffic count on Kaighns Avenue at the Cooper River Bridge on Tuesday, April 12, 2016. Counts were conducted between 7:00 a.m. and 9:00 a.m., for the morning commuter and school arrival peak; and between 2:00 p.m. and 6:00 p.m. for the school dismissal and evening commuter peaks. IH identified three (3) peak hours as a result of this count, as follows:

Table 1
Existing Peak Hour Traffic Volumes, Kaighns Avenue over Cooper River
Tuesday, April 12, 2016

Peak Hour	Time	Eastbound	Westbound	Total
Weekday Morning	7:15 a.m. to 8:15 a.m.	240	455	695
Weekday Afternoon	3:15 p.m. to 4:15 p.m.	320	548	868
Weekday Evening	4:45 p.m. to 5:45 p.m.	303	540	843

We note that during all three hours observed, the westbound volume was significantly higher than eastbound. This is somewhat unusual; it is more common that the weekday morning peak hour directional distribution is reversed during the weekday evening peak hour.

IH also obtained two-way traffic counts on Kaighns Avenue to the west of the study area from the NJDOT website, between Princess Avenue and Haddon Avenue, collected in February, 2012 and immediately to the east of the study area from the DVRPC Travel Monitoring website. These counts show the AADTs (annualized average daily traffic volume) as follows:

NJDOT – 4,385 vpd WB, 3,583 vpd EB.
DVRPC – 6,450 vpd WB, 2,181 vpd EB.

Therefore the April 2016 IH counts are generally consistent with these historical counts, in that the westbound volumes are higher.

With regard to the relationship between peak hourly and daily traffic volumes, a common “rule of thumb” is that the weekday morning and weekday evening commuter peak hours together typically represent 20% of the daily traffic volume. Based on this rule of thumb, we project that the existing (Year 2016) ADT on the Kaighns Avenue bridge is:

Manual Counts - ±5,000 vpd WB, ±2,700 vpd EB

C. Traffic Volume Forecasts

The bridge replacement project is expected to commence in 2019-2020, three years from the date of the traffic counts. It is therefore prudent to project estimated peak hour traffic volumes at the time of construction, since traffic volumes typically increase over time (aside from the recent economic downturn following 2008). Projection of future traffic

volumes was performed based on a table provided by the NJDOT Bureau of Major Access which summarizes annual traffic volume growth rates based on the county, the roadway’s functional classification, and the area type (i.e. “urban” or “rural”).

For all “urban” roadway classifications in Camden County, the anticipated growth rate is 1% per year. We note that this table indicates it is only to be used for short-term growth calculations – i.e. 1 to 3 years. Application beyond that timeline may result in an over-projection of volumes. We have increased the existing 2016 volumes by 3% to reflect future build year volumes. Table 2 reflects these projections of future peak hour volumes on the bridge (rounded to the nearest ten).

Table 2
Projected Year 2019 Peak Hour Traffic Volumes
Kaighns Avenue over Cooper River

Peak Hour	Time	Eastbound	Westbound	Total
Weekday Morning	7:15 a.m. to 8:15 a.m.	250	470	720
Weekday Afternoon	3:15 p.m. to 4:15 p.m.	330	560	890
Weekday Evening	4:45 p.m. to 5:45 p.m.	310	560	870

Assuming that the Kaighns Avenue Bridge is closed to vehicular traffic for replacement, Table 2 provides the magnitude of the traffic volumes that would have to be accommodated on the detour route(s).

D. Crash Data Analysis and Crash Diagram

IH requested copies of police crash reports on Kaighns Avenue between the Cooper River Bridge (the Camden City boundary) and Park Boulevard (MP 0.69) from the Camden City Police Department. Reports. The date of request being between January 1, 2013 and April 15, 2016. Note that since Kaighns Avenue is not a State highway, NJDOT crash data including under/overrepresentations is not available for this roadway.

A total of 35 crash reports were returned to IH. Upon review, eight (8) were found to have occurred outside the study area and were excluded from this analysis. The remaining 27 crashes were distributed as follows:

Table 3
Vehicle Crashes by Type – 2013 to 2016
Kaighns Avenue over Cooper River

Year	Crashes By Type						Total Crashes
	Fixed Object	Same Dir. Rear End	Left Turn	Parked Vehicle	Same Dir. Sideswipe	Opp. Dir. Sideswipe	
2013	1	4	1	0	0	0	6
2014	0	4	0	0	2**	0	6
2015	3	2	3	2	1	1	12
2016*	1	1	0	0	0	1	3
Total	5	11	4	2	3	2	27

* Partial year.

** In one crash, Vehicle 2 subsequently overturned.

The majority of crashes occurred at the two signalized intersections in the western portion of the study area, with 10 (38%) at Park Boulevard, and 10 (38%) at Euclid Avenue. These included crashes within the intersection as well as crashes associated with intersection movement (such as rear-end crashes on the approach). Otherwise there were only two other crashes (both rear-end type) that occurred within the project limits. Reports indicate that each of these two crashes involved a vehicle stopping because Kaighns Avenue was blocked by flooding, then being struck in the rear by another vehicle. The pavement was wet in each crash. This project will endeavor to address flooding conditions on Kaighns Avenue, which will therefore help address crashes such as these. The crash reports and crash diagrams can be found in *Appendix D*.

V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING

A. Community Outreach

Public Officials Meetings - DVRPC and Camden County are committed to establishing and maintaining effective dialog with local officials. During the Local Concept Development Phase, meetings were held with the Pennsauken Township Engineer on October 20, 2016, and with City of Camden officials on March 9, 2017. During these meetings Fact Sheets and FAQ's were prepared and distributed regarding the project problem statement, purpose and need, and all alternatives including the Preliminary Preferred Alternative (PPA). One display board included a plan, profile and typical section of the preferred alternative. Information gathered and issues cited during these meetings related to local knowledge of the project area. After adjourning, minutes were prepared and distributed to attendees for comment. Meeting minutes can be found in *Appendix I*.

Public Information Center (PIC) - On March 29, 2017, a PIC was held at the Camden County Historical Society, located at 1900 Park Boulevard, City of Camden. The meeting included information on flyers, display boards, and an informal Q&A and comment period. One display board included a plan, profile and typical section of the preferred alternative. The second display board presented the traffic detour plan to be used during road and bridge construction when Kaighns Avenue will be closed between North Park Boulevard and Euclid Avenue. The attendance sheet and notes from this PIC are located in *Appendix I*. The photo to the right was taken at the March 29th PIC showing the meeting attendees, presentation boards and Gary Patterson of IH Engineers.



- B. **Noise and Air Quality** - The Camden School Board is the only sensitive receptors of air/noise within three hundred feet (300') of the project limits.
- C. **Socioeconomics** - There is a mixture of commercial and residential uses within five hundred feet (500') of the Kaighns Avenue Bridge study area including the Parkside Residential District, High School Athletic Field, Farnham Park, Cooper River Park, Village Thrift, Sneaker Outlet, and The Pub restaurant. More concentrated residential areas exist to the southwest, and west of the study area, encompassing large areas to the north and south of Kaighns Avenue. Retail uses continue to the east of the study area, along South Crescent Boulevard (Route 130) in the Borough of Collingswood and Admiral Wilson Boulevard (Route 30) in the Township of Pennsauken. The nearest residential uses to the east of the bridge in Pennsauken are approximately one thousand (1000') to the north off of Kaighns Avenue (Route 38), on the other side of Airport Circle.

Currently, the Kaighns Avenue Bridge is a heavily travelled transportation link between the City of Camden and the Township of Pennsauken. Any alternatives that would reduce the link between these two communities should consider the socioeconomic impact of that alternative. As project alternatives are developed, socioeconomic impacts to the land uses in the area should be considered.

The Concept Development and alternatives analyzed will maintain the link between the City of Camden and Pennsauken Township, and will improve the link by reducing the number of flooding events on Kaighns Avenue. As a result, no socioeconomic impacts are anticipated from the improvements under consideration.

- D. **Cultural Resources** - The Kaighns Avenue Bridge over the Cooper River is included in the 1994 New Jersey Historic Bridge Survey (A.G. Lichtenstein & Associates, Inc. 1994). The survey determined that the bridge was a representative example of its type but not technologically significant. It was recommended as ineligible for listing on the National Register of Historic Places (NRHP) in 1995 and the State Historic Preservation Office (SHPO) concurred.

Cooper River Park Historic District (SHPO Opinion 2/16/2000; Previous SHPO Opinion 2/28/1994; NR 7/19/2016). The northernmost boundary of this expansive district, which is located within four municipalities of Camden County, is situated along the southern median of Kaighns Avenue. The subject bridge, however, is not located within the district and therefore is not considered a contributing resource. A set of stone steps original to the park's design, and contributing resources to the Cooper River Park Historic District, are located in proximity to the proposed bridge replacement; however, they will not be impacted by the proposed undertaking.

There is one historic architectural resource located within the APE that is recommended for intensive-level surveying:

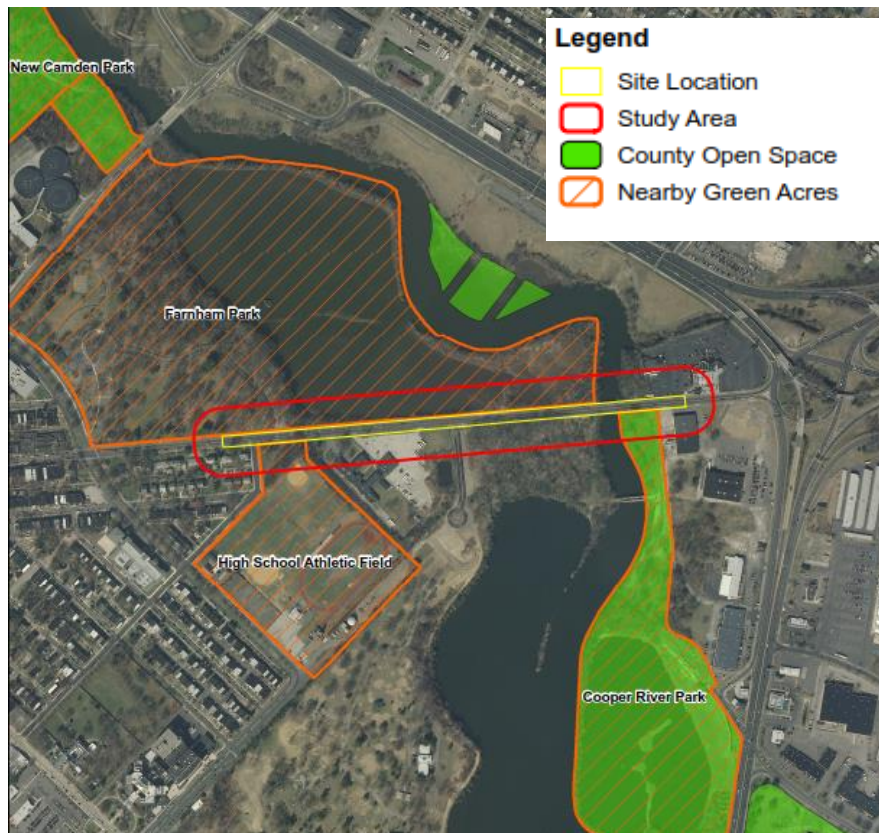
- The Pub (7600 Kaighns Avenue) (Block 08110, Lot 1): a circa 1962 restaurant.

- E. **Section 4(f) Properties** - Any lands within the study area that may be categorized as recreational lands or wildlife refuges may be subject to analysis under Section 4(f) of the US Department of Transportation Act. The NJDEP State-owned Open Space and Recreation Areas in NJ GIS coverage (NJDEP Green Acres Program, December 2008),

and the NJDEP Green Acres Program Recreational Open Space Inventory (ROSI) were reviewed.

There are three nearby Green Acres (GA) Parcels within the study area limits: Farnham Park, the High School Athletic Field, and Cooper River Park, which is also identified as County Open Space. Farnham Park encompasses most of the land in the study area to the north of the bridge, ending at Cooper River; the High School Athletic Field encompasses a small amount of land south of the bridge, to the west; and the Cooper River Park encompasses a small amount of land on the southern side of the bridge, to the east of the Cooper River. Any activities conducted on Green Acres-encumbered lands will be considered a diversion and will need to be compensated for. Approval of the uses of these lands must be obtained from NJDEP Green Acres Program and the NJ State House Commission. In addition, certain uses of these properties may require Federal Section 4(f) review due to federal funding of this project.

Figure 1 – Green Acres and Open Space



- F. **Highlands/Pinelands** - This project does not lie within the limits of the Highland Planning Area or the Pineland Management Area.

- G. **Wetlands** - There are no NJDEP Mapped Coastal Wetlands pursuant to the NJ Coastal Wetlands Act of 1970 present within the study area limits. However, wetlands as mapped by the NJDEP Office of Information Resources Management, Bureau of Geographic Information and Analysis, are located within the eastern half of the study area on the northern and southern sides of the bridge. These wetlands are classified as palustrine, forested, broad-leafed deciduous, saturated (PFO1B); and palustrine, forested, broad-leafed deciduous, seasonally flooded/palustrine, scrub-shrub, broad-leafed deciduous, seasonally flooded (PFO1C/PSS1C). Wetlands were delineated in the field and the locations of the upland/wetland boundaries were identified. Wetlands identified in the study area during the field investigation are subject to confirmation by both the NJDEP and USACE.

The wetland areas identified during the field investigation will be regulated by NJDEP under the provisions of the NJ Freshwater Wetland Protection Act Rules (N.J.A.C. 7:7A). The approximate wetland boundary and its anticipated transition area are shown on the Environmental Constraints Map (See *Appendix G*).

The NJ-GeoWeb Map indicates wetlands adjacent to Kaighns Avenue within the cemetery on the south side of the roadway and on both sides of the bridge structure to the north of the roadway. The Concept Development and alternatives were analyzed to anticipate temporary impacts to wetlands during the construction of the proposed bulkhead along the northern side of Kaighns Avenue in order to elevate the roadway.

- H. **Reforestation** - It is anticipated that less than ½ acre of forested land will be impacted by the project. Therefore, replanting as per the No Net Loss Reforestation Act is not anticipated.
- I. **Floodplain** - Flood hazard area mapping and available FEMA floodplain maps were analyzed to determine the approximate extent of 100-year floodplains and flood hazard areas within the project area. NJDEP regulates activities in flood hazard areas under the FHACA rules at N.J.A.C. 7:13.

The majority of the study area lies within the FEMA 100-year floodplain. The waters of the Cooper River to the north, within, and immediately to the south of the Kaighns Avenue Bridge are located within a tidal floodplain. The lake waters in Farnham Park (adjacent and to the west of Cooper River) and Cooper River Lake, to the north and south of the study area, respectively, are located within a fluvial floodplain. Potential impacts to the Flood Hazard Area of Cooper River must be developed and evaluated during subsequent project design phases.

As per FEMA Panel Number 34007C0037F (Preliminary FIRM Revised date: 08/17/2016), the project is located in a floodway Area (Zone AE) with elevation of ten (10'). The flood Profile (01P) from the Flood Insurance Study Report (Volume 2 of 2) dated 08/17/2016 indicates that the flood elevation is influenced by coastal flood effects from the Delaware River. The proposed alternatives analyzed anticipate activities that will impact the flood hazard areas necessitating NJDEP flood hazard permits.

- J. **Sole Source Aquifer** - The project area is located within an area identified by the New Jersey Geological Survey (digital Sole Source Aquifer Coverage, 1998) as a Coastal Plain Sole Source Aquifer Region. Piles may impact the aquifer; however, the depth of the

aquifer and the length of the piles are unknown at this time. Further investigation will be required during Preliminary Engineering.

- K. **Threatened/Endangered Species** - The potential for the presence of threatened and endangered species for the study area was assessed by obtaining records from the New Jersey Natural Heritage Program (NHP) and United States Fish and Wildlife Service (USFWS). The NHP, in a letter dated February 8, 2016 lists the NJ State Endangered Bald Eagle (*Haliaeetus leucocephalus*), as foraging and wintering within the study area and within one mile. A review of the NJDEP Landscape Project Mapping (Landscape Project via NJ-Geo-Web) indicates that Rank 4 habitat for the Bald Eagle is located along the Cooper River and the adjoining water bodies immediately north and south of the Kaighns Avenue Bridge.

The NHP lists the following additional wildlife species and wildlife habitats within one mile of the study area:

- Great Blue Heron (*Ardea herodias*) foraging – Special Concern

In addition to the species listed above, an Information, Planning and Conservation (IPaC) Trust Resources Report was generated on March 30, 2017 and reviewed to identify the potential presence of federally listed threatened or endangered species within the project area. According to the IPaC report, no federally threatened or endangered species, critical habitats, or National Wildlife Refuges were identified within the project area; however, twenty four (24) migratory bird species, which are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, could potentially be affected by activities in this location.

The potential to impact the bald eagle habitat will need to be evaluated further during the permitting phase of the project. Project alternatives should also evaluate impacts to the foraging habitat (i.e. forested areas impacted by elevating the roadway) of this species. According to the NJDEP, bald eagle habitat contains forested areas associated with bodies of water where they have access to their diet of fish, small mammals, waterfowl, and dead animal matter (NJDEP 2005).

The Wetland Transition Area to the south of Kaighns Avenue is bordered by a “Rank 3 Habitat”, which encompasses much of the Cooper River Park Historical District. Rank 3 has been assigned to this habitat due to bald eagle wintering and great blue heron foraging activities.

No rare plant species are documented in or immediately adjacent to the study area.

As per NOAA/National Marine Fisheries Service, the Cooper River does have a spawning run of anadromous fish. To protect the migration and spawning of these species, including alewife and blueback herring, a seasonal in-water work restriction is usually recommended. The restriction is typically from March 1 to June 30.

- L. **Category 1 Waters** - As per the NJ-GeoWeb, there are no Category 1 Waters in the project area.

- M. **Vernal Pools** - As per the NJ-GeoWeb, there are no known or potential vernal pool habitats within the project study area.
- N. **Stormwater** - It is anticipated that the project will result in new impervious area of less than ¼ acre and less than one acre of total land disturbance. Therefore, compliance with the NJDEP Stormwater Management Rules (SWM) will not be required.
- O. **Hazardous Waste** - As per the NJ-GeoWeb, the presence of several gas stations, both former and active, as well as historic fill, indicates that there is potential for involvement with regulated material and/or contaminated sites.

A re-evaluation will be required during the Final Design Phase of the project to determine whether environmental investigation will be required. In addition, Camden County has an On-Call Licensed Site Remediation Professional (LSRP) to represent Camden County and ensure all environmental regulations are met during linear construction projects.

- P. **Anticipated Environmental Permits or Approvals** - During this environmental screening phase, wetlands, surface waters, floodplains and T&E species were identified in the study area. These could require NJDEP Land Use Regulation Permits and USACE permits. Concerns have also been identified with regard to archaeological/historical resources and Green Acres Encumbered Parkland. In addition, other issues have been identified which may require further investigation in the next phase of the project, including hazardous sites and timing restrictions (e.g., anadromous fish spawning, bald eagle wintering and foraging, migratory birds, and game fish). The following Permits/Certifications/Approvals may be required:

Permits/Certifications/Approvals	Duration	Extension
Camden County Soil Conservation District Certification	3.5 Years	
SHPO Determination of No Adverse Effect or Memorandum of Agreement	No Set Duration.	
NJDEP Waterfront Development Permit	5 Years	5 Years ¹
NJDEP Letter of Interpretation	5 Years	5 Years
NJDEP Freshwater Wetlands Permits	5 Years	5 Years
NJDEP Water Quality Certificate	5 Years	5 Years
NJDEP Flood Hazard Area Permit	5 Years	5 Years
NJDEP Stormwater Management Plan Approval	Required evaluation and updating every 5 years.	
NJDEP Tidelands License	10 Years	
Corps of Engineers Individual or Nationwide Permit	5 Years	Yes ²
Coast Guard Bridge Permit	Valid if commencement begins within 3 years and the project is completed within 5 years.	
Green Acres minor or major disposal or diversion is not a permit and therefore has no set duration.	No Set Duration.	

¹ Waterfront Development Individual Permit can be extended for 5 years for waterward of MHW.

² Corp extensions will be granted as long as the duration of the Nationwide Permits has not lapsed.

Due to the demographics of the surrounding community, a heightened sensitivity to environmental justice issues during the development of alternatives should be considered.

As project alternatives are developed, the potential environmental impacts to the resources described will be evaluated in further detail.

- Q. Environmental Summary with Probable NEPA Document required** - The Kaighns Avenue Project involves federal funding and is therefore subject to review under the National Environmental Policy Act (NEPA). Due to the limited amount of impact to the environment and surrounding community, it is anticipated that this project will qualify as a Categorical Exclusion. Categorical Exclusions (CEs) are actions which meet the definition contained in the EPA Title 40, Code of Federal Regulations. They are actions which: do not induce significant impacts to planned growth or land use for the area; do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; or do not otherwise, either individually or cumulatively, have any significant environmental impacts.

During the Preliminary Engineering phase of this project, Categorical Exclusion Documentation (CED) will be compiled and submitted to the Federal Highway Administration for review. Further information has been provided in an Environmental Screening Report dated May 10, 2017 and an Area of Potential Effect Report dated April 4, 2017 in *Appendix G*.

VI. EVALUATION OF CONCEPTUAL ALTERNATIVES

- A. Bridge Rehabilitation versus Bridge Replacement** - The bridge was constructed in 1924 and has outlived its useful life. As per the Bridge Re-Evaluation Survey Report – Cycle # 16 dated March 25, 2015; the Sufficiency Rating is 83.4 which do not warrant bridge replacement. The Survey Report states that “the overall condition of the structure is fair due to the superstructure and substructure conditions”. The Bridge Re-Evaluation Survey Report did not consider full bridge replacement due to the Sufficiency Rating.

Temporary Emergency Scour Counter Measures were put in place based on the Priority Repair findings of the Stage II In-Depth Scour Evaluation carried out during the Cycle # 15 Bridge Re-Evaluation on March 27, 2013. In order to address priority repairs, Camden County hired KS Engineers to design scour repairs and obtain NJDEP permits for construction of the priority scour repairs. The KS Engineers design was advertised and awarded to NuPump Construction. As a result, new sheet piling was installed (backfilled with concrete) along the full length of abutments (with timber relieving platforms) and new fabric formed grout bags placed around the entire perimeter of the concrete pier (with timber relieving platform). The undermined voided areas at all locations beneath the timber relieving platforms, abutments, pier (with exposed timber piles) were filled with grout/concrete. The emergency scour repairs are temporary in nature and are not a permanent solution to foundation and center pier scour at the Kaighns Avenue Bridge.

- B. Temporary Bridge Location and Widening Constraints** - A temporary bridge is not anticipated for construction of the proposed work. In order to minimize construction time and minimize the overall impact to the community, Camden County has determined that the bridge will be closed during construction. The traffic will be detoured to Baird Boulevard and Admiral Wilson Boulevard (Route 30).
- C. Conceptual Alternatives** - For the project, four Alternatives and a “No-Build” option were considered for the Kaighns Avenue Bridge, with one alternative for the Kaighns Avenue roadway project. An Alternatives Matrix has been prepared offering a side by side comparison of the bridge alternatives with advantages and disadvantages (*Appendix L*).

Kaighns Avenue Bridge (Structure 043B006):

- 1. No-Build** – The No-Build Alternative does not extend the useful life of the structure.
- 2. Alternative 1 – Single Span Prestressed Concrete Box Beams with Cast-In-Place Deck and Substructure** - The existing two-span bridge is a non-redundant structure and as such will be removed in its entirety at the start of construction. The new abutments and wingwalls will be supported by piles. To aid in the construction of the substructures, sheet pile coffer dams will be installed. If approved by NJDEP, the sheet pile coffer dams will be left in place as additional scour protection following the completion of the project. The superstructure will be replaced with adjacent prestressed concrete box beams. The deck and sidewalks will be cast-in-place and composite with the box beams. The parapets will be precast concrete. The proposed bridge will have a twelve foot (12’) lane and an eight foot (8’) shoulder in each direction.
The existing sidewalks on both sides of the bridge are eight feet (8’) wide. The proposed sidewalk on the north side of the structure will remain eight feet (8’) wide while the sidewalk on the south side will be widened to ten feet (10’) to complete the ten feet (10’) wide multi-use paths on both sides of the bridge.

The estimated construction cost for Alternative 1 is \$4,160,000.

- 3. Alternative 2 – Single Span Steel Plate Girders with Cast-In-Place Deck and Substructure** - The existing two-span bridge is a non-redundant structure and as such will be removed in its entirety at the start of construction. The new abutments and wingwalls will be supported by piles. To aid in the construction of the substructures, sheet pile coffer dams will be installed. If approved by NJDEP, the sheet pile coffer dams will be left in place as additional scour protection following the completion of the project. The superstructure will be replaced with steel plate girders and a cast-in-place, composite concrete deck. The parapets will be precast concrete. The proposed bridge will have a twelve foot (12’) lane and eight foot (8’) shoulder in each direction.

The existing sidewalks on both sides of the bridge are eight feet (8’) wide. The proposed sidewalk on the north side of the structure will remain eight feet (8’) wide while the sidewalk on the south side will be widened to ten feet (10’) to complete the ten feet (10’) wide multi-use paths on both sides of the bridge.

The estimated construction cost for Alternative 2 is \$4,550,000.

- 4. Alternative 3 – Two Span Prestressed Concrete Box Beams with Cast-In-Place Deck and Substructure** - The existing two-span bridge is a non-redundant structure and as such will be removed in its entirety at the start of construction. The new abutments, pier and wingwalls will be supported by piles. To aid in the construction of the substructures, sheet pile coffer dams will be installed. If approved by NJDEP, the sheet pile coffer dams will be left in place as additional scour protection following the completion of the project. The superstructure will be replaced with adjacent prestressed concrete box beams. The deck and sidewalks will be cast-in-place and composite with the box beams. The parapets will be precast concrete. The proposed bridge will have a twelve foot (12') lane and eight foot (8') shoulder in each direction.

The existing sidewalks on both sides of the bridge are eight feet (8') wide. The proposed sidewalk on the north side of the structure will remain eight feet (8') wide while the sidewalk on the south side will be widened to ten feet (10') to complete the ten feet (10') wide multi-use paths on both sides of the bridge.

The estimated construction cost for Alternative 3 is \$4,420,000.

- 5. Alternative 4 – Bridge Rehabilitation** - Based on the Bridge Re-Evaluation Survey Report – Cycle # 16, concrete repairs are required and will be carried out on the existing abutments, wingwalls, pier, floor beams, stringers, deck, sidewalk and parapets. The existing traffic barriers cast into the existing girders will be modified to provide greater protection to the traveling public. The west approach slab will be reconstructed to meet the proposed roadway profile.

The estimated construction cost for Alternative 4 is \$858,000.

Kaighns Avenue Roadway Improvements:

The existing roadway is plagued by roadway flooding which requires the road to be closed to traffic 15-18 times per year in the low lying area west of the Kaighns Avenue structure. In an effort to alleviate this problem, alternatives for elevating the roadway profile were investigated. Raising the minimum profile elevation above the highest observed water level, to an elevation of ten feet (10') (from the existing minimum elevation of four feet) would eliminate virtually all flooding related roadway closures. Using engineering judgement, the ten foot (10) elevation alternative was ruled out as the elevated roadway would be higher than the adjacent properties and would essentially act as a dam, and as a result the Cooper River tidal waters could possibly inundate large areas of the Board of Education building and Harleigh Cemetery properties.

The preferred alternative is to raise the minimum profile elevation to seven and one half feet (7.5') (from the existing minimum elevation of four feet) which will prevent the majority of flooding events that result in a roadway closure, but will also allow Cooper River to overtop the roadway on those rare occurrences and thereby prevent the adjacent properties from being inundated. The raising of the roadway by three and one half feet (3.5') from four feet (4') to seven and one half feet (7.5') will require the existing bulkhead to be abandoned in place and a new bulkhead extended for the length of the improved roadway. The concept also includes construction of a precast open parapet matching the precast bridge parapet in lieu of guide rail. The parapet will be located at the top of the bulkhead along the northern side of Kaighns Avenue. A new five foot (5') sidewalk will also be constructed along the northern side of the

roadway and a new ten foot (10') multi-use path will be constructed on the southern side of the roadway with a new fence separating the path from the adjacent properties.

The estimated construction cost for the roadway improvements is \$3,429,000 excluding Right of Way cost for require slope easements.

VII. PRELIMINARY PREFERRED ALTERNATIVE

Based on input received from DVRPC officials, County officials, and NJDOT SMEs, Alternate No. 1 for the bridge with the roadway improvements was selected for the Preliminary Preferred Alternative (PPA). The PPA satisfies the purpose and need and meets the goals and objectives for this project.

A. Hydrology & Hydraulics Analysis

As per FEMA Panel Number 34007C0037F (Preliminary FIRM Revised date: 08/17/2016), the project is located in a floodway Area (Zone AE) with Elevation of ten feet (10'). The flood Profile (01P) from Flood Insurance Study Report (Volume 2 of 2) dated 08/17/2016 indicates that the flood elevation is influenced by coastal flood effects from the Delaware River.

The proposed PPA abutment locations and elimination of the center pier will provide the same hydraulic opening as the existing condition allowing the same flow. A Hydrology and Hydraulic analysis may not be required under the proposed condition. However, further evaluation is recommended as the project progresses through Preliminary Engineering and Final Design.

B. Right of Way Impacts and Review

Based on conceptual layout of the roadway and bridge alternatives, ROW acquisitions will not be required for this project; however, one or more slope easements will be needed due to changes in vertical alignment of the existing roadway. More specific right-of-way requirements will be determined during Preliminary Engineering.

C. Utility Impacts

In order to reconstruct the bridge and elevate the roadway, the PPA improvements will require temporary relocation of utility poles located on the north side of the existing bridge and roadway. The decorative street lights will have to be removed and reset on both sides of the bridge and elevated roadway. The existing twenty four inches (24") diameter gas main (CL 15 PSI) will be relocated to the north side of the bridge. Underground utility and pole relocation impacts are anticipated since the roadway will be raised several feet as part of the improvements. The underground utilities and the poles can be expected to be raised at least as much as the roadway; however, these vertical relocations will be determined upon further investigation in Preliminary Engineering.

D. ITS Facilities

The New Jersey Department of Transportation maintains an inventory of all Intelligent Transportation System (ITS) devices throughout the state by type, route and County on their website. As this is a county road, no ITS facilities are indicated by the NJDOT database within the project limits. However, Camden County does not own or maintain traffic signals on County roadways and Camden City does not own or operate any ITS facilities or devices.

E. Complete Streets Policy

A “Complete Street” is defined as a means to provide safe access for all motorized and non-motorized users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options. The policy dictates that Complete Streets shall be considered during the planning, design, construction, maintenance and operation of new and retrofitted transportation facilities, enabling safe access and mobility of pedestrians, bicyclists and transit users of all ages and abilities.

Under the existing condition, there is an eight feet (8’) wide multi-use path on the south side of Kaighns Avenue and a six foot (6’) sidewalk on the north side within the project limits. The proposed condition recommends widening the south sidewalk to ten feet (10’) to comply with the standards for a multi-use path. In addition, a five feet (5’) wide bicycle path will be striped in both shoulders for experienced cyclists, as requested by the Camden City Officials. The Complete Streets Checklist is provided in *Appendix M* for PPA.

F. Access Impacts and Review

Permanent access impacts are not anticipated for this project. Access to all properties will be maintained at all times during construction.

G. Constructability and Staging Plans and Detour Plan

IH reviewed existing roadway conditions and configurations, and also reviewed maps provided by the Camden County Engineer’s Office detailing detour routes employed during the replacement of the Baird Boulevard Bridge and Cooper River flooding conditions at Kaighns Avenue. The detour is used with some frequency as Kaighns Avenue is susceptible to flooding. We believe, then, that many area drivers will be familiar with the detour associated with a Kaighns Avenue Bridge closure over the Cooper River.

In order to quantify the volume of detoured traffic, IH staff conducted traffic counts at the Kaighns Avenue Bridge on Tuesday, April 12, 2016. Counts covered a six-hour period: 7:00 a.m. to 9:00 a.m., to include the weekday morning commuter peak hour; and 2:00 p.m. to 6:00 p.m., to include both the typical school dismissal peak period, and the weekday evening commuter peak hour. The traffic volumes observed on the bridge through these counts are summarized in Table 1 (page 8).

As shown, during these three hours, two-way traffic volumes using the bridge ranged from ± 700 to ± 870 vehicles per hour. This traffic would divert elsewhere under a bridge closure. However, we note that this does not necessarily mean that all this traffic will divert to a signed detour route: depending on their origin/destination, many motorists (especially local residents familiar with the area) are likely to find their own preferred routes.

Based on this, as well as IH’s familiarity with the area and our observations of traffic flow, IH developed a detour plan to guide motorists around the anticipated bridge closure. Again, this plan is generally consistent with the “Primary” detour plans provided to us by Camden County. The detour is summarized as follows, for each direction of travel:

1. **Eastbound Kaighns Avenue traffic** – i.e. from Camden to Pennsauken – will proceed from Kaighns Avenue north on Baird Boulevard, using the on-ramp to Admiral Wilson

Boulevard (US Route 30) eastbound, then using the ramp signed for Route 130 north to the “Airport Circle”, followed by a right turn back to Kaighns Avenue.

2. **For Westbound Kaighns Avenue traffic** – i.e. from Pennsauken to Camden – all traffic entering Kaighns Avenue westbound does so from the Airport Circle, the junction of US Routes 30 and 130, and NJ Routes 38 and 70. Therefore, signage is proposed facing the southbound Route 130, northbound Route 30 & 130, and westbound Route 38 & 70 approaches to the Circle. All this signage will guide motorists onto ramps to Admiral Wilson Boulevard (US 30) westbound, then through the loop ramp onto Baird Boulevard southbound, back to Kaighns Avenue.

The last approach to Kaighns Avenue westbound is via Admiral Wilson Boulevard (Route 30) westbound. The detour plan does not provide advance signage for this movement (although it is part of the eastbound detour described above). Rather, this movement is served by additional signage which guides eastbound Admiral Wilson Boulevard motorists south on Route 30 & 130 through a U-turn at the North Park Drive signal. We note that this signage will also serve any motorists approaching the Airport Circle from Routes 130, 38 and 70 who miss the posted signage on those approaches.

As noted above, IH’s detour plan is generally consistent with the “Primary” detour plan provided by Camden County. The County also has an “Alternate Route” detour, which uses Routes 30 & 130 south, through the Haddon Avenue (CR 561) interchange, then west on Haddon Avenue to either Euclid Avenue or directly to Kaighns Avenue. We have opted not to reflect this detour, in part because of the much higher number of traffic signals involved, including nine (9) on Haddon Avenue alone. While we have not completed any detailed traffic or intersection capacity analysis as part of this assignment, we believe that the detour plan as presented better suits the increased traffic volume, given the inclusion of high-speed arterial roadways with ramps and/or grade separated intersections. This route also includes fewer traffic signals; however, it does provide signals at locations where the signed detour will instruct drivers to make turns (especially left turns). We believe this is beneficial in terms of safety and efficiency.

The detour plan reflects MUTCD-approved signage, with legend, symbols and layouts consistent with the MUTCD and with typical NJDOT signage schemes.

H. Controlling Substandard Design Elements and Reasonable Assurance

The Preliminary Preferred Alternative will not require a Design Exception.

I. Implementation of Public Involvement Action Plan

1. **Public Officials Meeting** – The City Officials requested that the shoulders be subdivided to provide a five foot (5’) dedicated bicycle lane in either direction in addition to the multi-use trail. This lane would allow more experienced cyclists to connect to the regional bike network while bypassing the more casual bikers and pedestrians who favor the multi-use path. There was also concern for the detoured traffic during construction. They cited the conditions when Baird Boulevard was shut down for emergency reconstruction and during the Kaighns Avenue flooding periods. It was explained that the same conditions would not apply since there would always be two routes available and the duration would be significantly shorter since Kaighns Avenue would be open during the design phase and accelerated construction methods

would be employed. Mayor Redd advised that coordination of the construction staging of this project and the Camden High School project should be a top priority.

- 2. Subject Matter Experts Meeting** – NJDOT suggested that the barrier on the bridge between the shoulder and multi-use path could be eliminated due to the 25 MPH speed limit. Since there are no speed limit signs at present, they should be added to the plans. During this meeting it was suggested that a Life-Cycle-Cost-Analysis be performed comparing the Preliminary Preferred Alternative to the Structure Rehabilitation Alternative during the Preliminary Engineering Phase.
 - 3. Public Information Center** – A summary has been prepared to identify and document the concerns raised by the community and stakeholders. These concerns will be taken into consideration during the project development process. The summary of concerns can be found in *Appendix J*.
 - 4. Project Brochures, Presentation, Fact Sheets and FAQ's** – Project Brochures, Flyers, Fact Sheets and FAQ's were prepared and distributed at local official meetings and the PIC. These materials are included in *Appendix I*, and will be available on the project website.
 - 5. Public Display Boards** – Display boards were prepared for viewing at local official meetings and the Public Information Center. One display board included a plan, profile and typical section of the preferred alternative. The second display board presented the traffic detour plan to be used during road and bridge construction when Kaighns Avenue will be closed between North Park Boulevard and Euclid Avenue. See *Appendix I* for the project information sheet, PIC brochure and display board graphics.
 - 6. Issues Log** – The project team documented all public comments and maintained a chronological record of all public comments or questions. The issues log also documents the project team's responses to issues. The Issues Log is a valuable source of information in documenting common public concerns. (See *Appendix I*)
- J. Life Cycle Cost Analysis**
Camden County will prepare a Life Cycle Cost Analysis comparing Alternate 4, Bridge Rehabilitation with the PPA (Alternative 1), Single Span Prestressed Concrete Box Beams with Cast-In-Place Deck and Substructure.

Appendix A

Bridge Re-evaluation Survey Report



Making It Better, Together.

**DEPARTMENT OF PUBLIC WORKS
2311 EGG HARBOR ROAD
LINDENWOLD, NEW JERSEY 08021**

BRIDGE RE-EVALUATION SURVEY REPORT

**STRUCTURE NO. 043B006
KAIGHN AVENUE (CR 607) OVER COOPER RIVER
TOWNSHIP OF PENNSAUKEN
CAMDEN COUNTY**

16TH CYCLE

MARCH 25, 2015

**NOTE: This Bridge Re-evaluation Report
shall be filed immediately after the
15TH Cycle Inspection Report.**

Prepared By



**Consulting Engineers and Planners
2 Eves Drive, Suite 110
Marlton, New Jersey 08053**

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**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL EVALUATION AND BRIDGE MANAGEMENT**

**BRIDGE RE-EVALUATION SURVEY REPORT
CYCLE NO. 16**

STRUCTURAL DATA:

Bridge No.:	043B006	Year Built:	1924	Widened/Rehab:	N/A
Route No.:	9004	Length:	112.0'	Width:	42.0'
Mile Point:	0.16	Date of This Evaluation:	03/25/2015		
Name:	Kaighn Avenue (CR 607) over Cooper River	By:	Buchart Horn, Inc.		
		Date of Previous Evaluation:	03/27/2013		
		By:	SJH Engineering, P.C.		
		Special Equipment Used:	Small Boat (Photo No. 16-35)		
Structure Type:	Two spans, simply supported, concrete encased steel through girders / floorbeams / stringers system	Date of Underwater Inspection:	06/11/2015		
		By:	ECM Engineers, Inc.		
		Scour Critical:	Yes		

WORK DONE: New sheet piling installed (backfilled with concrete) along the full length of abutments (w/ timber relieving platforms) and new fabric formed grout bags placed around the entire periphery of the concrete pier (w/ timber relieving platform). The undermined / voided areas at various locations beneath the timber relieving platforms / abutments / pier (w/ exposed timber piles) filled with grout / concrete (Photo Nos. 16-28, 16-30 and 16-32).

OVERALL PHYSICAL CONDITION: Fair due to the superstructure and substructure.
(Items 59 and 60)

OVERALL CONDITION (ITEM 67): Fair due to the superstructure and substructure.
(Items 59 and 60)

Inspection Team Leader: William H. Munz, P.E.
Certifying Engineer: Christopher D. Dwyer, P.E.
N.J. P.E. Number: 24GE03284600

Initials: _____

I certify that this report is an accurate description of the subject structure, to the extent determinable by visual inspection and testing performed.

Signature: _____

Date: _____



CONCLUSIONS AND RECOMMENDATIONS:

The overall condition of the structure is fair due to the superstructure and substructure conditions.

The deck is in fair condition due to the longitudinal and transverse cracks, small spalls and patched areas (10% deck area) in bituminous concrete deck overlay along with large potholes near pier deck joint (Typical [Photo Nos. 16-10](#) and [16-12](#)). There are several spalled areas with heavy efflorescence, stalactites / contamination throughout underside of deck ([Photo Nos. 16-08, 16-24](#) and [16-27](#)).

The approach roadway is in satisfactory condition due to wide transverse cracks in west approach roadway and uneven large bituminous concrete patched areas ([Photo No. 16-18](#)).

The superstructure is in fair condition due to the spalls in through girder / floorbeams bottom flange concrete encasements with exposed steel (with moderate to severe corrosion) along with incipient spalls w/ cracks and efflorescence throughout. The stringer concrete encasements exhibit cracks throughout with heavy efflorescence and stalactites (Typical [Photo Nos. 16-07, 16-08, 16-24](#) and [16-27](#)). The bearings are moderately to severely rusted (Typical [Photo Nos. 16-25](#) and [16-26](#)).

The substructure is in fair condition due to moderate to severe scaling of abutment breastwalls along with a few spalls with exposed rebar on the bridge seats (Typical [Photo Nos. 16-29](#) and [16-31](#)). The pier exhibits spalls with cracking and scaling on both faces of the pier, and a few spalls w/ exposed rebars at north and south ends, both sides ([Photo Nos. 16-33](#) and [16-34](#)).

The bridge is a riveted steel concrete encased through girder structure and is fracture critical as well as internally redundant.

Since the previous inspection, the overall condition of the structure has generally remained the same. We have downgraded the condition of deck from satisfactory to fair in order to be consistent with the defects noticed in top and underside of deck. We also upgraded channel / channel protection condition from good to very good since no defects/problems were noticed.

An underwater inspection was performed during this cycle on June 11, 2015 by ECM Engineers, Inc. The findings indicate that the structure is in fair condition due to the 1/2" deep scaling with exposed aggregate (in 3'-4' high bands) in pier, abutment breastwalls and wingwalls w/ spalls ([Photo Nos. UW-07](#) thru [UW-09](#)). Work Done includes new sheet piling installed (backfilled with concrete) along the full length of abutments (w/ timber relieving platforms) and new fabric formed grout bags placed around the entire periphery of the concrete pier (w/ timber relieving platform). The undermined / voided areas at various locations beneath the timber relieving platforms / abutments / pier (w/ exposed timber piles) were filled with grout / concrete ([Photo Nos. UW-05](#) and [UW-06](#)). A copy of the Underwater Diving Inspection is attached at the end of the report for additional information. See page 16-53 (PDF file: [043B006_20150611cy16_uw.pdf](#)).

Based on the Stage II In-Depth Scour Evaluation, the structure is determined to be scour critical (Item 113 coded as 3), because the total estimated scour depth is below the pile tip limits.

The bridge is scour critical and the following major recommendation were made in the Stage II In Depth Bridge Scour Evaluation Report:

Installation of stone riprap extending across the entire area under the west span, and 25 feet beyond the east face of the pier and the east abutment at the east span, placed level with the existing channel bed to a depth of 2'-0":

TOTAL (ITEM 94, 96, & FJ) = \$228,000

This structure is under design for scour countermeasures and construction is tentatively scheduled in 2015 (pending NJDEP permitting).

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

CONCLUSIONS AND RECOMMENDATIONS (cont'd):

We recommend that the following Emergency / Priority repairs should be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety and extend its useful life:

Protect the exposed ends of the north and south leading ends of concrete encased through girder bridge railings by attaching w-beam steel guide rail to both through girders and installing terminals at both leading ends, on a Priority 1 basis ([Photo No. 16-11](#)).

See Priority Repair [0403B006_20150327cy16_PR1_01.pdf](#) file for more details. A copy of the same is attached to this report (See page 16-53).

Perform a Type-2 Underwater Inspection of the bridge on a 2 year interval.

Monitor the bridge for scour damage during / after major storm events.

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: KAIGHN AV (CR 607)/COOPER RIVER Insp. Date: 03/25/2015

1 - STRUCTURAL DATA

IDENTIFICATION

8 Structure No.: 043B006 M82 County Bridge No.: M83 Municipal Bridge No.:
(AB) Name: KAIGHN AV (CR 607)/COOPER RIVER
1 State Code: 2 Highway Agency District: DISTRICT 03 (SOUTH)
(1A) State Code 34 - New Jersey 4 Place Code: 57660 - Pennsauken (Township of)
(1B) Region Code 2 - Region 2 - New York/New Jersey
3 County Code: 007 - CAMDEN COUNTY (A) Town: 0427 - Pennsauken Township
5A Inventory Route (On/Under): 1: Route carried "on" the structure 9 Location: 0.15 MI W OF RT30&130 JCT
5B Inventory Route Signing Prefix: 4 - COUNTY HIGHWAY
5C Level of Service: 1 - MAINLINE 11 Mile Point: 0.160
5D Inventory Route Number: 607 (AA) Inventory Route: 9004 - Camden County
5E Directional Suffix: 0 - NOT APPLICABLE (FV) Inventory Route Milepoint: 0
6 Features COOPER RIVER (AC) Non-Inventory Feature: WW: Roadway and/or railroad over waterway
Intersected:
(AD) Adm. Juris. Non-Inv Feature:
(AE) Alternate Agency:
7 Facility KAIGHN AV (CR 607)
Carried by
Structure:
(AF) Alternate Structure Number: B006
16 Latitude: 395600.17 98 Border Bridge Code:
17 Longitude: -750509.89 (98AA) State Code:
M84 Latitude (Degrees): 39.93338 (98AB) Region Code:
M85 Longitude (Degrees): -75.08608 (98B) % Resp.:
99 Border Bridge Structure Number:
M142 GPS Location: Northeast Corner

CLASSIFICATION

21 Maintenance Responsibility: 02 - County Highway Agency 26 Func. Class. of Inv. Route: 16 - Urban - Minor Arterial
M94 Maint. Resp.: 37 Historical Significance: 5 - Not eligible
22 Owner: 02 - County Highway Agency M91 On/Off System: 1: On-System Structure
M93 Owner: M96 Comments
M95 Ownership Resolved: Ownership:
101 Parallel Structure Designation: N - No parallel structure (BB) Orphan Bridge: N
103 Temporary Struct. Designation: (BP) Bridge Demolition: N
104 Highway System of Inv. Route: 0 - Structure/Route is NOT on NHS (CP) Federal Report: _ - Highway carrying NBIS bridges included in reports to FHWA
112 NBIS Bridge Length: Yes (CR) Off-Route Bridge: N
Agency Admin. Area: (FX) Federal Error Cannot be Corrected: N

STRUCTURE TYPE AND MATERIAL

43A Main Span Material: 3 - Steel
 43B Main Span Design: 03 - Girder and Floorbeam System
 44A Approach Span Material:
 44B Approach Span Design:
 45 Number of Main Spans: 2
 46 Number of Approach Spans: 0
 (AJ) Type of Slope Protection:
 (AK) Type of Abutment: 23: (B) Full Height on Timber Piles
 (AL) Type of Pier: 22: All Solid Wall Pier on Timber Piles
 (AT) Special Material 1:
 (AT) Special Material 2:
 (AU) Additional Structure Type 1: F: Non-redundant Construction
 (AU) Additional Structure Type 2:
 Fracture Critical Details:

M143 Structure Type Primary:
M144 Structure Type Secondary:
M97 Struct. Mat. Type Desc:
 107 Deck Structure Type: 1 - Concrete Cast-in-Place
 108A Wearing Surface: 6 - Bituminous
 108B Membrane: 0 - None
 108C Deck Protection: 0 - None
 (AV) Widened Structure Type:
 1st Widened Material:
 1st Widened Design:
 2nd Widened Material:
 2nd Widened Design:

AGE AND SERVICE

27 Year Built: 1924
 28A Lanes On Structure: 2
 28B Lanes Under Structure: 0

106 Year Reconstructed:
 42A Type of Service On: 5 - Highway-pedestrian
 42B Type of Service Under: 5 - Waterway

GEOMETRIC DATA

32 Approach Roadway Width (w/ shoulders): 40 ft
 33 Bridge Median: 0 - No median
 34 Skew: 0 deg
 35 Structure Flared: 0 - No flare
M98 Str. is Standalone or Connected:
M99 Length of Portion Included: ft
M101 Total Structure Opening: ft²
M145 Design Vertical Inside Opening: ft
M146 Available Vertical Inside - South or West End: ft
M147 Available Vertical Inside - North or East End: ft

48 Length of Maximum Span: 69 ft
 49 Structure Length: 112 ft
M141 Effective CoMBIS Width: ft
 50A Left Curb/Sidewalk Width: 8.0 ft
 50B Right Curb/Sidewalk Width: 8.0 ft
 51 Bridge Roadway Width, Curb-to-Curb: 40.0 ft
 52 Deck Width, Out-to-Out: 42.0 ft
 (AM) Depth of Fill over Structure: 0.0 ft
 Total length: 111.55 ft
 Deck Area: 4685.1 ft²

NAVIGATION DATA

38 Navigation Control: 0 - No navigation control on waterway (bridge permit not required)
 39 Navigation Vertical Clearance: 0 ft
 40 Navigation Horizontal Clearance: 0 ft

111 Pier/Abutment Protection:
 116 Min. Nav. Vertical Clearance under Lift Bridge: ft
 (AP) Fender System:

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: KAIGHN AV (CR 607)/COOPER RIVER Insp. Date: 03/25/2015

UTILITIES AND APPURTENANCES

(HA) Bridge Noise Barrier:

Type of Material 1:
Type of Material 2:
Barrier Height 1: 0.00 ft
Barrier Height 2: 0.00 ft

(AO) Utilities:

Utilities 1: G: Gas Main
Utilities 2:
Utilities 3:
Utilities 4:

Sign Structures:

(GS) Overhead Sign Structure:
(GT) Cantilever Sign Structure:

(GU) Fascia Mounted Sign Structure:

RAILROAD

(BC) USRA Code:
(BE) Rail Milepost: 0.000

(BD1) Rail On:
(BD2) Rail Under:

TEMPORARY STRUCTURES

(GV) Bridge: N
(GW) Shoring: N
(GZ) Cond. Desc.:

(GY) Measures: N
(GX) Repairs: N

2 - LOAD RATING AND POSTING

NBI Load Ratings:	Alternate Load Ratings:																																																
31 Design Load: 0 - Unknown 65 Inventory Rating Method: 1 - Load Factor (LF) 66 Inventory Rating: 42 tons 63 Operating Rating Method: 1 - Load Factor (LF) 64 Operating Rating: 70 tons Rating Date 04/13/1995	Alt. Design Load: Alt. Inventory Rating Method: -1 Alt. Inventory Rating: tons Alt. Operating Rating Method: -1 Alt. Operating Rating: tons Alt. Rating Date																																																
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41 Posting Status: A - Open 70 Posting: 5 - Equal to or above legal loads (CG1) Posted Load Type: (CG2) Posted Load Limit: tons (AI) Speed Limit Posting: mph Load Rating Review Recommended: <input type="checkbox"/>	(BK) Overstress %: (CH1) Load Rating/Posting Combo: L: Load Factor Rating (CH2) Load Rating/Posting Combo: tons (AN) Plans Available: N Load Rating Engineer: Unknown																																																
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3A - INSPECTION INFORMATION

APPRAISAL ITEMS

Structurally Deficient/Functionally Obsolete: ND	Sufficiency Rating: 83.4
67 Structural Evaluation: 5 - Somewhat better than minimum	70 Bridge Posting: 5 - Equal to or above legal loads
68 Deck Geometry: 5 - Somewhat better than minimum	71 Waterway Adequacy: 8 - Bridge Above Approaches
69 Underclearances, Vertical & Horizontal: N - Not applicable	72 Approach Roadway Alignment: 6 - Equal to present minimum criteria

EXISTING BRIDGE CONDITION

58 Deck: 5 - Fair Condition (minor section loss)	(BA) Approach Roadway Condition: 6: Satisfactory Condition - more significant defects such as large spalls, severe settlements (1" to 2") or major collision damage to guide rails. Moderate amounts of slope embankment erosion.
59 Superstructure: 5 - Fair Condition (minor section loss)	
60 Substructure: 5 - Fair Condition (minor section loss)	61 Channel/Channel Protection: 8 - Banks are protected
62 Culvert: N - Not Applicable	113 Scour Critical Bridge: 3 - Foundations unstable for scour conditions
63 Operating Rating Method: 1 - Load Factor (LF)	64 Operating Rating: 70 tons
65 Inventory Rating Method: 1 - Load Factor (LF)	66 Inventory Rating: 42 tons

CONDITION REMARKS

Deck Distress/Unrepaired Spalls: ft²		
<u>(BF) Deck:</u>	<u>(BG) Superstructure:</u>	<u>(BH) Substructure:</u>
1. K: Det. railings	1. C: Loss of section	1. I: Undermining
2. C: Less than 2% spalls	2. A: Mod/severe rusting	2. C: Medium/wide cracks
3. A: Medium to wide cracks	3. D: Encasement deterioration	3. J: Exposed rebars
4. L: Det. sidewalks	4.	4.
5. Q: Leakage w/efflorescence	5.	5.
<u>(BI) Channel:</u>	<u>(BJ) Culvert:</u>	
1.	1.	
2.	2.	

HIGHWAY SAFETY/FENCING

36A Bridge Rail: 0 - Does not meet acceptable standards/safety	(AG) Type of Bridge Rail: 17: Encased Thru-Girder type
36B Transition: 0 - Does not meet acceptable standards/safety	(AH) Height of Bridge Rail: 2.83 ft
36C Approach Rail: 0 - Does not meet acceptable standards/safety	(AQ) Chain Link Fence Height: 0.00 ft
36D End Treatments: 0 - Does not meet acceptable standards/safety	(FN) Fencing Warranted: YES - Conditions warrant chain link fencing on the
	(FO) Pedestrian Traffic Fencing Status: 0: Inspected fencing does not meet
	(FP) Fencing Improvement Cost: \$ 34

SCOUR EVALUATION

*113 Scour Critical Bridge: 3 - Foundations unstable for scour	(FA) FHWA Scour Category: 07: Scour Critical
(FB) Date of Stage 1 Scour Eval.: 6/1/1992	(FF) Date of Stage 2 Scour Eval.: 1/1/1998
(FC) Stage 1 Scour Eval. Consultant: G03 - Gannett Fleming	(FG) Stage 2 Scour Eval. Consultant: S37 - Stone & Webster
(FD) Stage 1 Scour Eval. Prioritization Category: 2 - Relatively high potential for scour damage	(FH) Scour Critical Elements: SC ABUTMENTS AND PIER
(FE) Stage 1 Scour Eval. Sufficiency Rating: 55	

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: KAIGHN AV (CR 607)/COOPER RIVER Insp. Date: 03/25/2015

SCOUR COUNTERMEASURES

(FJ) Scour Countermeasures Cost: \$ 228

(FL) Scour Monitoring Required/Type: A: Visual Inspection After Storm Events

(FI) Recommended Scour Countermeasures:

(FK) Scour Countermeasures Installed/Type:

1. C: Grout/Cement Filled Bags
2. P: Other Type
- 3.

PROPOSED IMPROVEMENTS

75A Type of Work: 38 - Other Structural Work

75B Work To Be Done By: 1 - Work to be done by contract

76 Length of Structure Improvement: 112 ft

(BO) Owner's Maintenance Cost: \$

94 Bridge Improvement Cost: \$ 228000

95 Roadway Improvement Cost: \$ 0

96 Total Project Cost: \$ 228000

97 Year of Improvement Cost Estimate: 2015

3B - INSPECTION INFORMATION

INSPECTION DATES

Inspection Report Author: Palmay, Robert	93A FC Inspection Date: 03/25/2015
Primary Type of Inspection: Regular Inspection	92A FC Inspection Frequency (in months): 24
Previous Cycle Inspection Date: 03/27/2013	Next FC Inspection Date: 03/25/2017
90 Inspection Date: 03/25/2015	93B UW Inspection Date: 06/11/2015
91 Inspection Frequency (in months): 24	92B UW Inspection Frequency (in months): 24
Next Inspection Date: 03/25/2017	Next UW Inspection Date: 06/11/2017
Pontis Element Inspection Date: 03/25/2015	UW Inspected By:
Pontis Element Frequency (in months): 24	93C SI Date: 1/1/1901
Next Pontis Element Inspection Due: 03/25/2017	92C SI Frequency (in months):
(AW) Date of Mechanical/Electrical inspection: 1/1/1901	Next SI Date:
(AW1) Mechanical Insp. Type:	(AR) Special Equipment: A: Small Boat (less than 16' long)
(AW2) Electrical Insp. Type:	(AR) Special Equipment:
(AW3) Traffic Safety Insp. Type:	(AR) Special Equipment:
(AW4) Mechanical Insp. Date:	Special Inspection By:
(AW5) Electrical Insp. Date:	(AS) Special Testing Type:
(AW6) Traffic Safety Insp. Date:	
(AW7) Movable Bridge Type:	
(AX) Date of Deck Condition Survey: 1/1/1901	(AS) Special Testing Type:
<i>M132 Confined Space Entry:</i>	
<i>M105 Description of Inspection Type:</i>	(AS) Special Testing Type:
	(AY) Date of Special Testing:
	1/1/1901

PAINT CONDITIONS AND DATE

(GD) Fascia Beam:	(GA) Is Painting Required? No: No parts of the structure require painting
(GE) Fascia Bottom Flange:	(GB) Environment:
(GF) Interior Beam:	(GC) Date of Current Paint Inspection: 1/1/1901
(GH) Interior Bottom Flange:	(GR) Date of Last Painting: 1/1/1901
(GI) Beam Ends:	(GP) Remarks 1:
(GJ) Connections:	
(GK) Bracings:	
(GL) Bearings:	
(GM) Substructure:	(GQ) Remarks 2:
(GN) Above Deck Superstructure:	
(GO) Railings/Fence:	

(AZ) FATIGUE DETAIL

Location 1:	Location 3:
Location 2:	

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: KAIGHN AV (CR 607)/COOPER RIVER Insp. Date: 03/25/2015

IN-DEPTH FRACTURE CRITICAL/PIN-HANGER

(FY) Special FCM Insp. Required: (FS) FCM's Inspected:
(FZ) Special P/H Insp. Required: (FT) Combo In-Depth Fracture Critical/Pin-Hanger Inspection:
(FQ) Latest In-Depth FC/ Pin-Hanger Inspection Date: 1/1/1901
(FQ1) Special FCM Insp. Date:
(FQ2) Special P/H Insp. Date:

(FR) Consultant: _
(FR1) Special FCM Insp. Consultant:
(FR2) Special P/H Insp. Consultant:

CYCLE DATA

(P1) Group Number: 04C5 (BM) Federal Job Number:
(P2) Work Spec Number: (BN) State Job Number:
(CI) Cycle Number: 16 (P3) NTP Date: 03/13/2015
(CJ) Inspection Type: R: Regular Inspection Funding Category: None
(CM) Current Consultant: B34 - Buchart-Horn (P4) State Project Manager: Robert Flanagan
(CO) Previous Consultant: S14 - SJH Engineer.. (P5) State Assistant PM: John Soldwedel
M87 Contract State Agreement No.: 2015BI006B County Project Manager: Kevin Becica
Agreement Modification Number: *M130 Project Name:*
Contract ID: 15-50814
Contract Date: 03/04/2015

STRUCTURE STATUS

Bridge Status: 3 - Active
Bridge Lifecycle Phase: 1 - Service
Data Last Updated: 03/25/2015

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: KAIGHN AV (CR 607)/COOPER RIVER Insp. Date: 03/25/2015

4A - ROADWAY DATA

ROADWAY IDENTIFICATION

Roadway Name: Kaighn Avenue
 Bridge ID/Structure Number: 043B006 5A Position of Route (On/Under): 1: Route carried "on" the structure
 Roadway SRI: 04000607__ 5B Route Signing Prefix: 4 - COUNTY HIGHWAY
 NBI Roadway?: Yes 5C Level of Service: 1 - MAINLINE
 5D Route Number: 607
 5E Directional Suffix: 0 - NOT APPLICABLE

HIGHWAY NETWORKS AND SERVICE CLASSIFICATION

11 Milepoint: 0.160 100 STRAHNET Highway Designation: 0 - Not a STRAHNET route
 12 Base Highway Network: Inventory Route is not on the Base Network 102 Traffic Direction: 2 - 2-way traffic
 13A LRS inventory Route: 104 NHS System: 0 - Structure/Route is NOT on NHS
 13B Subroute Number: 105 Federal Lands Highways:
 13R Ramp Code: 0 - Not Applicable
 20 Toll Facility: 3 - On free road. The structure is toll-free and carries a toll-free highway. 110 Designated Truck Highway Network: Inventory route not on network
 26 Functional Classification: 16 - Urban - Minor Arterial
 School Bus: Transit Route: Emergency Route:

TRAFFIC DATA

28 Number of Lanes: ON 2 UNDER 0 ADT Class: ADT Class 4
 Number of Medians: 0 29 ADT Total: 14780
 Roadway Speed Limit: 35 mph 30 Year of ADT: 2015
 19 Bypass/Detour Length: 1 miles 114 Future ADT: 18600
 Detour Speed: 25 mph 115 Year of Future ADT: 2035
 (FM) Incidents Reported: 109 Truck ADTT (%): 4
 Accident Count: Rate: (FW) Estimated ADT: Yes

VERTICAL AND HORIZONTAL CLEARANCES

10 Vertical Clearance:	99.99 ft	32 Approach Roadway Width:	40 ft
53 Minimum Vertical Clearance over Bridge:	99.99 ft	47 Inventory Route, Total Horizontal Clearance:	40.0 ft
54A Minimum Vertical Underclearance Ref:	N - Feature not a highway or railroad	51 Bridge Roadway Width, Curb-to-Curb:	40.0 ft
54B Minimum Vertical Underclearance:	0.00 ft	55A Minimum Lateral Underclearance Ref:	N - Feature not a highway or railroad
(DJ) Minimum Vertical Underclearance (including shoulders):	0.00 ft	55B Minimum Lateral Underclearance on Right:	0.0 ft
		56 Minimum Lateral Underclearance on Left:	0.0 ft

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	3 - Mod.	4685	sq. ft.	0	4685	0	0
1120 - Efflorescence/Rust Staining		4685			4685	0	0
510 - Wearing Surfaces		4462	sq. ft.	4012	450	0	0
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)		450			450	0	0
107 - Steel Open Girder/Beam	3 - Mod.	214	ft.	160	0	54	0
1000 - Corrosion		54			0	54	0
891 - Concrete Encasement		214	ft.	0	160	54	0
1080 - Delamination/Spall/Patched Area		214			160	54	0
113 - Steel Stringer	3 - Mod.	1824	ft.	0	1524	300	0
1000 - Corrosion		1824			1524	300	0
891 - Concrete Encasement		1824	ft.	0	1824	0	0
1120 - Efflorescence/Rust Staining		1824			1824	0	0
152 - Steel Floor Beam	3 - Mod.	420	ft.	0	210	210	0
1000 - Corrosion		420			210	210	0
891 - Concrete Encasement		420	ft.	0	210	210	0
1080 - Delamination/Spall/Patched Area		210			0	210	0
1120 - Efflorescence/Rust Staining		210			210	0	0
210 - Reinforced Concrete Pier Wall	3 - Mod.	62	ft.	0	52	10	0
1090 - Exposed Rebar		10			0	10	0
1190 - Abrasion/Wear (PSC/RC)		52			52	0	0
215 - Reinforced Concrete Abutment	3 - Mod.	248	ft.	0	241	7	0
1090 - Exposed Rebar		5			0	5	0
1190 - Abrasion/Wear (PSC/RC)		243			241	2	0
234 - Reinforced Concrete Pier Cap	3 - Mod.	62	ft.	32	16	14	0
1080 - Delamination/Spall/Patched Area		16			16	0	0
1090 - Exposed Rebar		14			0	14	0
304 - Open Expansion Joint	3 - Mod.	186	ft.	186	0	0	0
311 - Movable Bearing	3 - Mod.	4	each	0	0	4	0
1000 - Corrosion		2			0	2	0
2210 - Movement		2			0	2	0
313 - Fixed Bearing	3 - Mod.	4	each	0	0	4	0
1000 - Corrosion		4			0	4	0
331 - Reinforced Concrete Bridge Railing	3 - Mod.	224	ft.	152	50	19	3
1090 - Exposed Rebar		69			50	19	0
1190 - Abrasion/Wear (PSC/RC)		3			0	0	3
802 - Concrete Curbs/Sidewalks	3 - Mod.	224	ft.	164	40	20	0
1190 - Abrasion/Wear (PSC/RC)		60			40	20	0

Structure No.: 043B006 Route: 9004 Cycle No.: 16
Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

LOAD RATING SUMMARY SHEET (LRSS)

(Form NJ-BI-101 Created 1/25/2011)

Project Information: (LOAD RATINGS NOT PERFORMED THIS CYCLE)

Group: _____ Agreement No.: _____ Contract ID: _____ Agree/Mod No.: _____

Rating Information:

Method: LRFR: Yes / **No** LFR: **Yes** / No ASR: Yes / **No** Other (Specify): _____

Rating Date: 04/13/1995 Computer Software Used: PennDOT BAR 7 Version: 7.4

Load Testing: Yes / No Cycle Rating Performed: 6 Design Load: Unknown

Structure Information:

Plans Available? Yes / **No** Contract Designation: _____

Overlay? **Yes** / No Considered in Rating? Yes / No Type/Thickness: Bitu. Conc./Unknown

Section Losses? Yes / **No** Considered in Rating? Yes / No Item 59: 5

For LRFR Use Only:

Surface Roughness Factor: _____ Condition Factor: _____ System Factor: _____

ADTT (one direction): _____ Resistance Factor: _____ FCM: Yes / No

Load Rating Engineer (LRE):

Name: _____ Firm: _____ Initial: _____

Load Rating Reviewer (LRR) certification as per the NBIS Title 23 CFR Section 650.309(c):

Name: _____ N.J. P.E. No.: _____

Firm: _____

I certify that this rating is an accurate representation of the subject structure, considering all deterioration and/or changes to loading conditions, to the extent determinable by research and visual inspection and testing performed. I am charged with the overall responsibility for bridge capacity evaluation for the above mentioned structure.

Sign and Seal if
Rating Performed
in this Cycle

LOAD RATINGS NOT PERFORMED THIS CYCLE

Sign

Date

LOAD RATING SUMMARY SHEET (LRSS) (cont.)

Rating Comments:

The Load Factor/Working Stress and LRFR ratings, computed in accordance with the FHWA directive dated November 1993, AASHTO Manual for Bridge Evaluation, 2011, as modified by the NJDOT Highway Bridge Load Rating Manual and Section 43 of the NJDOT Design Manual, Bridges and Structures, are as follows:

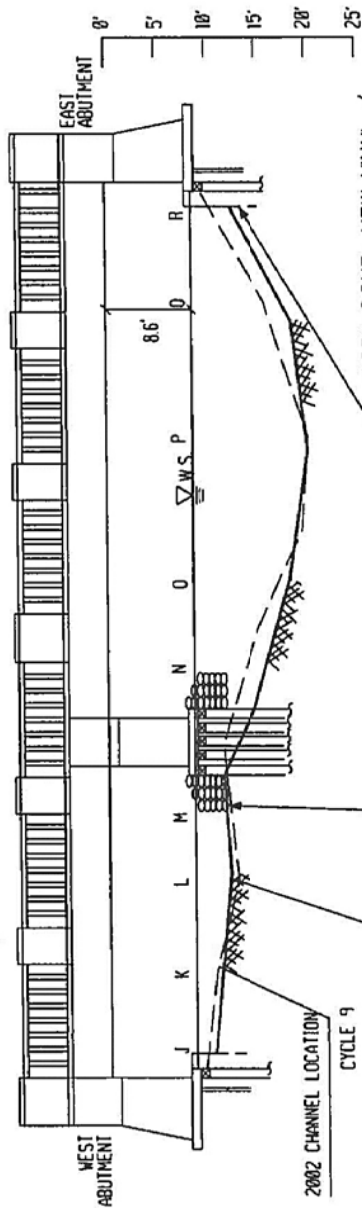
<u>Material</u>	<u>Compressive Strength f_c</u>	<u>Tensile Strength</u>	<u>Allowable Stresses (Psi)</u>		
			<u>Yield</u>	<u>Inventory</u>	<u>Operating</u>
Structural Steel	---	---	33,000	18,000	25,000

<u>Member</u>	<u>Truck Type (Tons)</u>		<u>Rating (Tons) / Rating Factor</u>							
			<u>LRFR</u>				<u>LRFR</u>			
			<u>As-Built</u>		<u>As-Insp.</u>		<u>As-Built</u>		<u>As-Insp.</u>	
			<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u> ¹	<u>Inv.</u>	<u>Op.</u> ¹
Stringer ² Cond. Rating = 5	H15	(15T)	23	39	23	39	---	---	---	---
	HL-93	(NL)	---	---	---	---	---	---	---	---
	HS-20	(36T)	42	70	42	70	---	---	---	---
	3	(25T)	38	63	38	63	---	---	---	---
	3S2	(40T)	61	102	61	102	---	---	---	---
	3-3	(40T)	74	124	74	124	---	---	---	---
	SU4	(27T)	---	---	---	---	---	---	---	---
	SU5	(31T)	---	---	---	---	---	---	---	---
	SU6	(35T)	---	---	---	---	---	---	---	---
SU7	(39T)	---	---	---	---	---	---	---	---	

¹ Operating level rating of design load or legal load rating

² Controlling Rating
(NL) = Notional Load

ROUTE	STRUCTURE NO.	DATE	CYCLE NO.
9004	043B-006	6/11/2015	16



NOTES:

1. THE CLEAR DIMENSIONS GIVEN ARE REFERENCED FROM THE BOTTOM OF BEAM TO THE STREAMBED.
2. THE WATER DEPTH DIMENSIONS ARE MEASURED FROM THE WATER SURFACE (AT THE TIME OF THE INSPECTION) TO THE STREAMBED.
3. FOOTING ELEVATION UNKNOWN SINCE PLANS ARE UNAVAILABLE.

--- 2002 CHANNEL BOTTOM (BASELINE)
 ——— 2015 CHANNEL BOTTOM (CYCLE 16)

WORK DONE: NEW VINYL COMPOSITE SHEETING WITH CONCRETE BACKFILL INSTALLED ALONG THE FULL LENGTH OF THE EAST AND WEST ABUTMENTS. THE UNDERMINED AREAS BENEATH THE TIMBER RELIEVING PLATFORM / ABUTMENTS WERE FILLED WITH GROUT / CONCRETE (TYPICAL EAST & WEST ABUTMENTS).

**SOUTH ELEVATION
 LOOKING NORTH
 NTS**

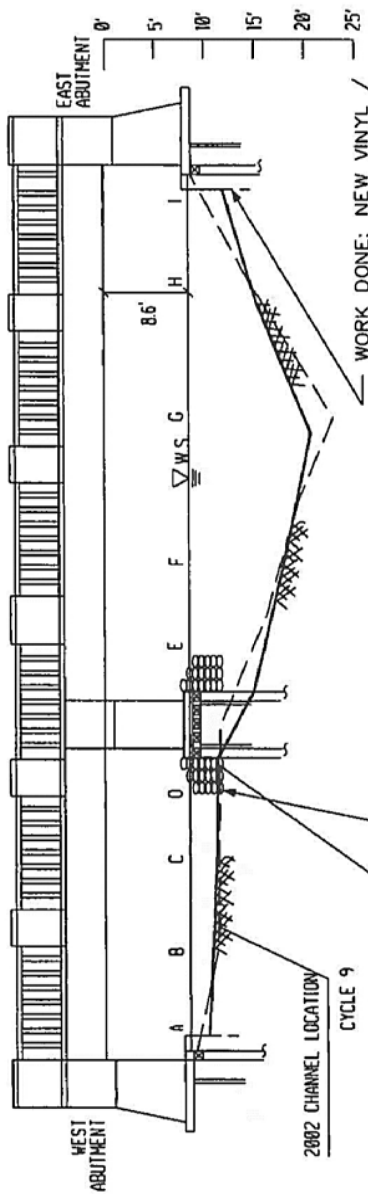
WORK DONE: NEW FABRIC FORMED GROUT BAGS INSTALLED AROUND THE ENTIRE PERIMETER OF THE PIER. THE UNDERMINED AREAS BENEATH THE TIMBER RELIEVING PLATFORM / PIER WERE FILLED WITH GROUT / CONCRETE.

POINT	CYCLE 9		CYCLE 16	
	CLEAR DIMENSION	WATER DEPTH	CLEAR DIMENSION	WATER DEPTH
J	9.5'	1.9'	10.5'	1.9'
K	10.7'	2.7'	11.3'	2.7'
L	12.9'	3.6'	12.2'	3.6'
M	11.5'	2.9'	11.5'	2.9'
N	15.0'	6.0'	14.6'	6.0'
O	19.5'	9.7'	18.3'	9.7'
P	20.1'	11.5'	20.1'	11.5'
Q	15.8'	9.9'	18.5'	9.9'
R	9.5'	3.8'	12.4'	3.8'

NEW JERSEY DEPARTMENT OF TRANSPORTATION
 STRUCTURE NO. 043B-006
 KAIGHN AVENUE (CR 607) OVER COOPER RIVER

TOWNSHIP: PENNSAUKEN COUNTY: CAMDEN
 ECM ENGINEERS, INC. Crew Chief:
 CONSULTING ENGINEERS
 127 ROUTE US 206, SUITE 30
 HAMILTON, NJ 08610
 Glen J. Fitzgerald, P.E.

ROUTE	STRUCTURE NO.	DATE	CYCLE NO.
9004	043B-006	6/11/2015	16



**NORTH ELEVATION
LOOKING NORTH
NTS**

NOTES:

1. THE CLEAR DIMENSIONS GIVEN ARE REFERENCED FROM THE BOTTOM OF BEAM TO THE STREAMBED.
2. THE WATER DEPTH DIMENSIONS ARE MEASURED FROM THE WATER SURFACE (AT THE TIME OF THE INSPECTION) TO THE STREAMBED.
3. FOOTING ELEVATION UNKNOWN SINCE PLANS ARE UNAVAILABLE.

--- 2002 CHANNEL BOTTOM (BASELINE)
 ——— 2015 CHANNEL BOTTOM (CYCLE 16)

WORK DONE: NEW VINYL COMPOSITE SHEETING WITH CONCRETE BACKFILL INSTALLED ALONG THE FULL LENGTH OF THE EAST AND WEST ABUTMENTS. THE UNDERMINED AREAS BENEATH THE TIMBER RELIEVING PLATFORM ABUTMENTS WERE FILLED WITH GROUT CONCRETE (TYPICAL EAST & WEST ABUTMENTS)

WORK DONE: NEW FABRIC FORMED GROUT BAGS INSTALLED AROUND THE ENTIRE PERIMETER OF THE PIER. THE UNDERMINED AREAS BENEATH THE TIMBER RELIEVING PLATFORM / PIER WERE FILLED WITH GROUT CONCRETE.

POINT	CYCLE 9 2002		CYCLE 16 JUNE 2015	
	CLEAR DIMENSION	CLEAR DIMENSION	CLEAR DIMENSION	WATER DEPTH
A	9.2'	10.4'	10.4'	1.8'
B	11.4'	10.8'	10.8'	2.3'
C	11.5'	11.3'	11.3'	2.7'
D	11.6'	11.4'	11.4'	2.8'
F	16.4'	15.0'	15.0'	6.4'
F	19.5'	18.1'	18.1'	9.5'
G	23.0'	20.8'	20.8'	12.2'
H	14.5'	15.4'	15.4'	6.8'
I	8.8'	12.0'	12.0'	3.4'

NEW JERSEY DEPARTMENT OF TRANSPORTATION
 STRUCTURE NO. 043B-006
 KAIGHN AVENUE (CR 607) OVER COOPER RIVER

TOWNSHIP: PENNSAUKEN COUNTY: CAMDEN
 ECM ENGINEERS, INC. Crew Chief:
 CONSULTING ENGINEERS
 127 ROUTE US 206, SUITE 30
 GLEN J. FITZGERALD, P.E.
 HAMILTON, NJ 08610



Photo No: 16-01

Location:	North elevation.
Description:	General view.



Photo No: 16-02

Location:	South elevation.
Description:	General view.



Photo No: 16-03

Location:	Roadway, looking east.
Description:	General view.



Photo No: 16-04

Location:	Roadway, looking west.
Description:	General view.



Photo No: 16-05

Location:	Upstream channel, looking south.
Description:	General view.



Photo No: 16-06

Location:	Downstream channel, looking north.
Description:	General view.



Photo No: 16-07

Location: Superstructure (west span), looking southwest.
Description: General view of concrete encased riveted steel through girders / floorbeams / stringers system. Note: North through girder and floorbeam FB2 bottom flange concrete encasements are spalled with exposed steel. Also note large incipient spalls w/ cracks and efflorescence throughout stringer bottom flanges.

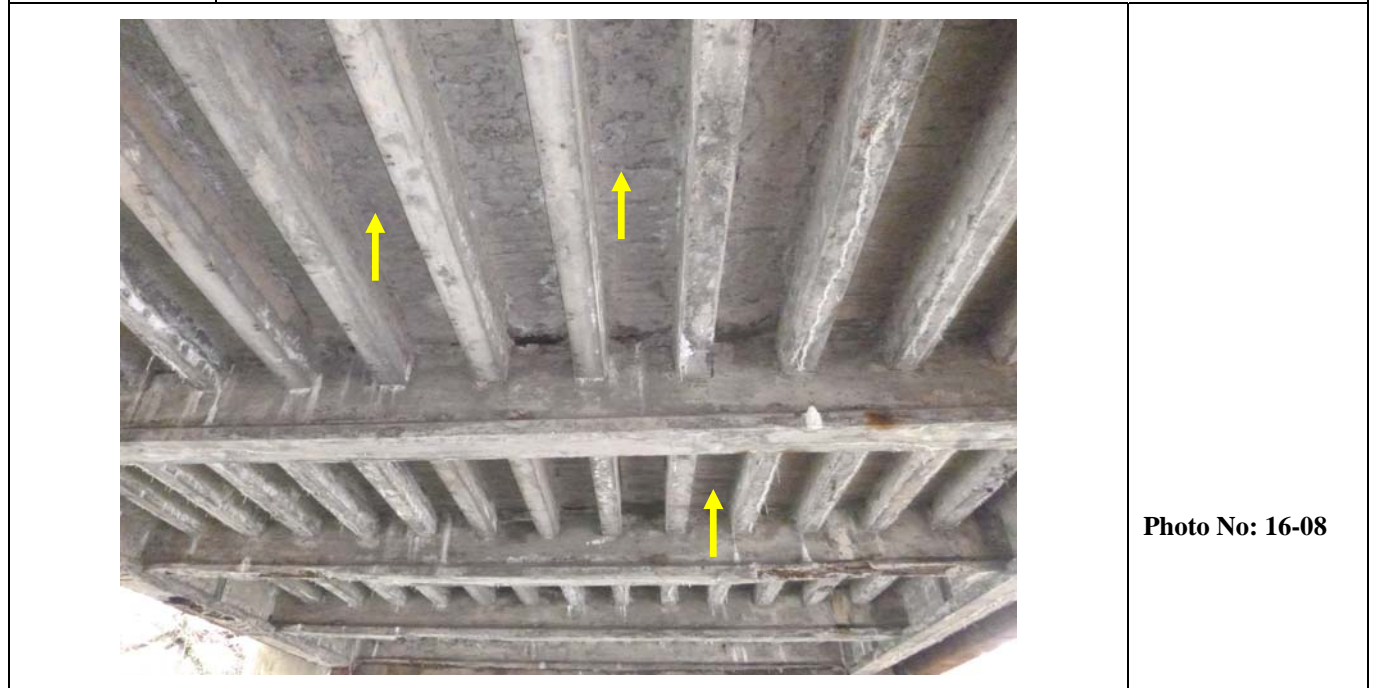


Photo No: 16-08

Location: Superstructure (east span), looking east.
Description: General view of concrete encased riveted steel through girders / floorbeams / stringers system. Note: floorbeam and stringer concrete encasements with cracks and efflorescence. Also note spalled areas w/ heavy efflorescence / contamination throughout underside of deck.



Photo No: 16-09

Location:	South sidewalk, looking northwest.
Description:	General view of underside of south sidewalk. Note: Utility pipe along the south through girder.



Photo No: 16-10

Location:	Top of deck (west span), looking northwest.
Description:	General view. Note: Longitudinal and transverse cracks, small spalls, and patched areas (10% deck area) and large potholes near centerline of westbound lane over pier deck joint.



Photo No: 16-11

Location:	Concrete encased through girder, south bridge railing, looking northeast.
Description:	Note: West leading end of the south bridge railing is exposed (Typical at north bridge railing, leading end), recommended repairs, on a Priority 1 basis.



Photo No: 16-12

Location:	Top of deck, westbound lane over pier, looking south.
Description:	General view. Note: Transverse cracks and large potholes in westbound lane over pier deck joint.



Photo No: 16-13

Location:	West span underside of south sidewalk, east end, looking east.
Description:	Note: Underside of sidewalk w/ severe scaling and exposed rebars throughout.



Photo No: 16-14

Location:	South parapet (west span) at west end, looking southeast.
Description:	Note: Severe scaling and spalling w/ exposed rebars at west end of parapet.



Photo No: 16-15

Location:	West end of north bridge railing, looking northeast.
Description:	Note: Severe scaling w/ exposed steel through girder concrete encased top flange.



Photo No: 16-16

Location:	West span at east end, south railing, looking northwest.
Description:	Note: South bridge railing w/ fine to medium horizontal crack w/ efflorescence along the through girder top flange encasement and severe scaling at east end.



Photo No: 16-17

Location:	North sidewalk at pier, looking east.
Description:	Note: Sidewalk w/ a large spall over the pier.



Photo No: 16-18

Location:	West approach, 45' from bridge, looking northeast.
Description:	General view. Note: Wide transverse cracks and uneven large bituminous concrete patched areas w/ potholes at 45' from bridge.



Photo No: 16-19

Location:	Southwest approach sidewalk and parapet, looking southwest.
Description:	Note: Severe scaling and spalled area w/ exposed rebar w/ disintegrated concrete, near the bridge.



Photo No: 16-20

Location:	Northeast approach sidewalk concrete slabs, looking southwest.
Description:	General view. Note: wide cracks throughout with severe differential settlement and debris accumulation.



Photo No: 16-21

Location:	Southeast approach sidewalk / curb, looking southwest.
Description:	Note: Severe scaling with moderate settlement in approach slab section, at bridge.



Photo No: 16-22

Location:	Southeast approach parapet and pylon, looking southwest.
Description:	Note: Pylon at the bridge parapet is severely scaled and spalled with fine to wide vertical cracks w/ efflorescence.



Location: Northeast approach embankment, looking west.

Description: Note: Moderate erosion of northeast embankment.



Location: Floorbeam FB4 (west span), looking southeast.

Description: Note: Floorbeam FB4 (from west) bottom flange exposed with moderate to severe corrosion. Also note cracks in stringer concrete encasements / underside of deck w/ heavy efflorescence and stalactites.



Photo No: 16-25

Location:	Pier cap, north end, looking southwest.
Description:	Note: Moderate to severe rusting of both bearings at north end of pier and spalls at north end of pier.



Photo No: 16-26

Location:	East through girder bearing at west abutment, looking northwest.
Description:	Note: Moderate to severe rusting of the bearing at west abutment.



Photo No: 16-27

Location: North through girder (east span), looking southeast.
Description: Note: North through girder / floorbeam bottom flange concrete encasements spalled with exposed steel. Also note cracks in stringer concrete encasements / underside of deck w/ heavy efflorescence/stalactites.



Photo No: 16-28

Location: West abutment, looking northwest.
Description: General view. Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (w/ timber relieving platform). The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete.



Photo No: 16-29

Location: West abutment bridge seat, looking northwest.
Description: Note: Large spall w/ a exposed rusted hanging reinforcing bar w/ delaminated concrete near middle.



Photo No: 16-30

Location: East abutment, looking northeast.
Description: General view. Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (w/ timber relieving platform). The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete.



Photo No: 16-31

Location: East abutment, north end, looking east.

Description: Note: Spall with exposed rebar at bridge seat, near north through girder and breastwall w/ moderate to severe scaling with exposed aggregates at bottom 2/3 height. Also note new sheet piling.



Photo No: 16-32

Location: Center pier, looking northwest.

Description: General view. Work Done: New fabric formed grout bags (3 - 6 tiers) placed along the periphery of pier (w/ timber relieving platform). The undermined / voided areas (up to 4 feet deep) at various locations beneath the timber relieving platform / pier (w/ exposed timber piles) filled with grout / concrete.



Photo No: 16-33

Location:	Pier north end, west side of pier, looking southeast.
Description:	Note: Spalls at north end of pier bridge seat and severe scaling along the base.



Photo No: 16-34

Location:	Pier east side 1/3 length from south end, looking southwest.
Description:	Note: Spalls w/ exposed rusted rebar near top on east face of pier.



Photo No: 16-35

Location:	Waterway, looking northwest.
Description:	Note: Small boat used during inspection.

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
 BUREAU OF STRUCTURAL EVALUATION AND BRIDGE MANAGEMENT
 FIELD NOTES
 CAMDEN COUNTY**

Inspectors: R. Palmay Name: Kaighn Avenue (CR 607) over Cooper River
 Crew Chief: W. Munz, P.E.
 Temperature: 45°F Weather: Sunny
 Special Equipment Used: Small Boat

RATINGS:

- N Not applicable.
- 9 Excellent Condition.
- 8 Very Good Condition – no problems noted.
- 7 Good Condition – some minor problems.
- 6 Satisfactory Condition – some minor deterioration of structural elements.
- 5 Fair Condition – minor section loss to primary structural elements.**
- 4 Poor Condition – advanced section loss to primary structural elements.
- 3 Serious Condition – seriously deteriorated primary structural elements.
- 2 Critical Condition – facility should be closed until repairs are made.
- 1 Imminent Failure Condition – facility closed. Study of repairs is feasible.
- 0 Failed Condition – facility is closed and beyond repair.

GPS COORDINATES			
@Southwest corner			
N	39°	55' 59.17"	Lat.
W	75°	05' 9.89"	Long.

GENERAL

Type of Bridge: Two span, simply supported, concrete encased steel through girders / floorbeams / stringers system.

Year Built: 1924 Year of Widening / Major Repairs: N/A

No. of Lanes: On 2 Under Waterway

Vertical Clearances: Over Deck: Unlimited.

Minimum Under: N/A

Maximum Under (Item 10): N/A

Horizontal Underclearance: Total Horizontal Clearance: N/A (Waterway)

Right N/A

Left N/A

Overall Physical Condition of Structure: Fair due to the superstructure and substructure.
 (Items 59 and 60)

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

DECK

SI&A Item 58 Condition Rating: 5

SPAN # West

RATING	COMPONENT	REMARKS
6	Wearing Surface (Bituminous Concrete)	Longitudinal and transverse cracks, sealed cracks, small spalls, and patched areas (10% deck area, Photo Nos. 16-10 and 16-12).
5	Underside of Deck (Concrete)	Several spalled areas with heavy efflorescence, stalactites / contamination throughout underside of deck (Typical Photo Nos. 16-08, 16-24 and 16-27).
N	Median	None
N	Curbs	None
5	Sidewalks (Concrete)	Fine transverse and diagonal cracks with light scaling. North: Severe scaling at pier 4" long x 8' wide and light debris at existing saw cut locations (Photo No. 16-17). South: Minor settlement at west abutment and light debris (Photo No. 16-13).
4	Parapets (Concrete)	North: Heavy spalling w/ exposed rusted rebar, fine to medium vertical and horizontal cracks throughout. South: Severe scaling west end w/ exposed rebar (5 SF), spalls w/ exposed rebars throughout (6 F) (Photo No. 16-14).
6	Bridge Railings (Through Girder, Concrete Encased)	North: Surface spalls w/ exposed rebar (15 SF) throughout. South: Severe scaling throughout (12 SF) w/ exposed rebar (1 SF) at east end. Fine to medium horizontal crack w/ efflorescence (full length) at top flange. (Typical Photo Nos. 16-15 and 16-16).
N	Deck Joints / Filler Material	Paved over
N	Drains and Scuppers	None
N	Light Stands	None
7	Utilities	No significant defects. 2' x 3' insulated line beneath south fascia.
N	Others	N/A

Additional Remarks:

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

DECK

SI&A Item 58 Condition Rating: 5

SPAN # East

RATING	COMPONENT	REMARKS
5	Wearing Surface (Bituminous Concrete)	Longitudinal and transverse cracks, sealed cracks, small spalls, and patched areas (10% deck area). Large potholes (4 SF up to 3" deep) near centerline westbound lane over pier joint; shallow pothole (3 SF) at westbound lane near mid span. (Typical Photo Nos. 16-10 and 16-12).
5	Underside of Deck (Concrete)	Several spalled areas with heavy efflorescence, stalactites / contamination throughout underside of deck (Photo Nos. 16-08, 16-24 and 16-27).
N	Median	None
N	Curbs	None
5	Sidewalks (Concrete)	North: 1 SF spall at west end. (3' x 6") spall over the pier. South: Severe scaling with exposed rebar at multiple locations (3 SF). Severe scaling (4' x 3') at east deck joint. Spalled areas throughout with heavy efflorescence. (Typical Photo No. 16-17).
5	Parapets (Concrete)	Moderate to severe scaling with exposed rusted rebar throughout, both sides. South: Severe scaling throughout and surface spalls w/ exposed rusted rebar throughout (7 SF). (Typical Photo No. 16-16).
5	Bridge Railings (Through Girder, Concrete Encased)	Severe scaling at west end (30 SF) w/ exposed steel and east end (20 SF), north side, exposed east end. South: Moderate to severe scaling w/ surface spalls w/ exposed rusted rebar (10 SF). Exposed rusted rebar, fine horizontal and vertical cracks throughout (Typical Photo Nos. 16-15 and 16-16).
N	Deck Joints / Filler Material	Paved over
N	Drains and Scuppers	None
N	Light Stands	None
7	Utilities	No significant defects. 2' x 3' insulated line beneath south fascia.
N	Others	N/A

Additional Remarks:

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

APPROACHES

SI&A Item BA Rating: 6

SI&A Item 72 Rating: 6

APPROACH West

RATING	COMPONENT	REMARKS
6	Approach Pavement (Bituminous Concrete)	Wide transverse cracks in both lanes 20' from bridge; uneven bituminous concrete patched areas (15' long x 7' wide) w/ small shallow potholes (1 SF) at 45' from bridge (due to ongoing construction) (Photo No. 16-18).
N	Approach Shoulder	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate to steep upgrade towards bridge. Horizontal: Tangent.
N	Guide Rail Conditions	None
5	Sidewalks (Bituminous Concrete)	Work Done: New bituminous concrete (90 SF) at 15' from bridge. North: Moderate to severe scaling. South: Settlement with moderate to severe at bridge; severe scaling (25 SF) dirt accumulation and spall w/ exposed rebar (2 SF) disintegrated concrete at bridge (Photo No. 16-19).
4	Curbs (Concrete)	North: Missing curb section (20 LF) w/ severe scaling and differential settlement throughout. South: Missing curb section (45 LF) at bridge. (Typical Photo No. 16-21).
8	Utilities	No significant defects.
7	Approach Roadway Embankment	No significant defects.
4	Parapets (Concrete)	Concrete parapet extension. Fine vertical cracks throughout with moderate scaling and some exposed reinforcing. Large hole in south parapet (2' x 1'') w/ exposed rusted rebar 20' from bridge (Typical Photo No. 16-14).

Additional Remarks:

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

APPROACHES

SI&A Item BA Rating: 6

SI&A Item 72 Rating: 6

APPROACH East

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	No significant defects.
N	Approach Shoulder	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade towards bridge. Horizontal: Tangent.
N	Guide Rail Conditions	None
5	Sidewalks (Concrete)	North: Wide cracks throughout with severe differential settlement and debris accumulation w/ 5' undermining at east end slab. South: Severe scaling (40 SF) with moderate settlement in approach slab Section, at bridge. (Photo No. 16-21).
4	Curbs (Concrete)	Settlement with severe scaling, cracks, disintegration and vegetation growth (south 20 LF and north 35 LF) (Typical Photo No. 16-21).
N	Utilities	None
5	Approach Roadway Embankment	Moderate erosion w/ heavy vegetation growth at northeast (Photo No. 16-23).
5	Parapet (Concrete)	Severe scaling with exposed rusted rebar both sides with small spalls. South pylon at bridge is severely scaled and spalled with fine to wide vertical cracks w/ efflorescence throughout (10±SF) (Photo No. 16-22).

Additional Remarks:

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 5

SPAN # West

RATING	COMPONENT	REMARKS
5	Through Girders (Steel Concrete Encased, 2 Nos.)	North Through Girder: Encasement spalled at bearing and at bottom of flange with exposed rebar, large incipient spalls w/ cracks and efflorescence and spalls throughout bottom flanges. South Through Girder: Bottom flange encasement completely spalled east half and incipient spalls (4 SF) and spalls w/ exposed rusted rebar in west half of bottom flange. Encasements w/ efflorescence and stalactites and fine wide cracks throughout. (Typical Photo No. 16-07).
	Floorbeams (Steel Concrete Encased, 4 Nos.) Numbered from West to East	Floorbeams: Large spalls and incipient spalls and wide cracks at bottom flange throughout, moderate rust throughout. Floorbeams FB1 and FB4 bottom flanges are exposed with moderate to severe corrosion (Photo No. 16-24).
	Stringers (Steel Concrete Encased, Nos.) Numbered from South to North	Stringers: Fine to wide cracks medium cracks with efflorescence on all stringers, incipient and partial spalls throughout (Typical Photo Nos. 16-24).
N	Diaphragms / Cross Frames	None
5	Bearings (Steel)	Moderate to severe rust at both bearings. Southeast bearing undermined approximately 2” below masonry plate (east side full length 8 undermined) Northeast bearing undermined 1½” at east side of masonry plate full length (6 undermined) (Typical Photo Nos. 16-25 and 16-26).
	Deflection and Vibration	None noted at time of inspection
6	Sidewalk Brackets (Concrete)	Sidewalk brackets encasement has random cracking w/ efflorescence; southeast and southwest brackets have spalls w/ exposed severely rusted steel (6 SF); northwest brackets w/ spall (1 SF) (Photo No. 16-09).

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of large trucks in ADT = 4%

Category	Detail Description and Location
N/A	None

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 5

SPAN # East

RATING	COMPONENT	REMARKS
5	Through Girders (Steel Concrete Encased, 2 Nos.)	North Through Girder: Encasement spalled and incipient spalls at bottom flange with exposed/rusted rebar and severe rust throughout, severe scaling to concrete encasement and flange ≈ 5% section loss on the exposed bottom flange near the east end. South Through Girder: Encasement spalled at bottom flange at pier. Signs of efflorescence at east abutment with stalactites throughout; medium /wide cracks w/ efflorescence and incipient spalls throughout. (Typical Photo No. 16-27).
	Floorbeams (Steel Concrete Encased, 6 Nos.) Numbered from West to East	Floorbeams: Floorbeam encasements spalled at north & south ends exposing severely rusted steel (FB1 entire length). Moderate rust at bottom exposed flange with efflorescence and stalactites, FB3- wide horizontal crack with incipient spall at bottom flange (Typical Photo No. 16-08).
	Stringers (Steel Concrete Encased, Nos.) Numbered from South to North	Stringers: Fine to medium horizontal cracks with efflorescence and stalactites throughout, most with incipient spalls or partially spalled encasement, heavy spalling to concrete encasement of stringer under north sidewalk (Typical Photo Nos. 16-08).
N	Diaphragms / Cross Frames	None
5	Bearings (Steel)	Moderate to severe rust at both bearings. Rocker nests (both) over pier are frozen solid (Typical Photo Nos. 16-25 and 16-26).
	Deflection and Vibration	None noted at time of inspection
6	Sidewalk Brackets (Concrete)	Fine wide cracks w/ efflorescence, spalls and incipient spalls w/ some exposed steel (Photo No. 16-09).

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of large trucks in ADT = 4%

Category	Detail Description and Location
N/A	None

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
6	Breastwall (Concrete)	Moderate to severe scaling with exposed aggregates at bottom 1/3 height, severe scaling at north corner (2 SF) (Photo No. 16-28). 3' high band (splash zone) of 1/2" deep scaling with exposed aggregate (See Underwater Inspection Report- June 11, 2015 by ECM Engineers, Inc.).
7	Backwall (Concrete)	No significant defects
5	Bridge Seat (Concrete)	Large spall w/ exposed rusted and hanging rebar (10 SF) w/ delaminated concrete near centerline of bridge (Photo No. 16-29).
7	Wingwalls / Retaining Walls (Concrete)	No significant defects
N	Embankment / Slope Protection	None
8	Footings / Waterway Probing	Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (w/ timber relieving platform). The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete (Photo No. 16-28). (See Underwater Inspection Report - June 11, 2015 by ECM Engineers, Inc.)

Additional Remarks: Abutment full height on timber piles.

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

ABUTMENT East

RATING	COMPONENT	REMARKS
6	Breastwall (Concrete)	Moderate to severe scaling with exposed aggregates at bottom 2/3 height; severe scaling at south corner (2 SF) and at bottom wall (10 SF) near north through girder at south construction joint (2 SF). (Typical Photo Nos. 16-30 and 16-31). 4' high band (splash) of 1/2" deep scaling with exposed aggregate (See Underwater Inspection Report- June 11, 2015 by ECM Engineers, Inc.).
7	Backwall (Concrete)	No significant defects
6	Bridge Seat (Concrete)	Spall with exposed rebar (4 SF) at north end, through girder. (Typical Photo No. 16-31).
7	Wingwalls / Retaining Walls (Concrete)	No significant defects.
N	Embankment / Slope Protection	None
8	Footings / Waterway Probing	Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (w/ timber relieving platform). The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete (Photo No. 16-30). (See Underwater Inspection Report - June 11, 2015 by ECM Engineers, Inc.)

Additional Remarks: Abutment full height on timber piles.

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

PIER Center

RATING	COMPONENT	REMARKS
5	Solid Wall Pier (Concrete)	<p>Fine vertical cracks w/ efflorescence at random locations along with medium scaling lower half, throughout.</p> <p>West Face: Medium horizontal crack at mid length, west face (12 LF) w/ incipient spall (10 LF).</p> <p>East Face: Medium horizontal cracks at 1/3 length from south, east face w/ spall and incipient spalls w/ exposed rebars (7 SF) (Photo No. 16-34).</p> <p>North End: Fine random cracks with efflorescence at north end, east and west faces, severe scaling, spalls at north end, with exposed rebar (24 SF). Two large spalls on west face at north end (8 SF± each). incipient spalls w/ fine map cracking and efflorescence at north end, east and west sides (46 SF). Large spall on north end (3 SF) (Photo No. 16-33).</p> <p>South End: Fine random cracks w/ efflorescence at south end, east and west faces w/ severe scaling, spall, incipient spalls (10 SF) w/ exposed rusted rebars (5 SF). Two small spalls along east face at south end (1 SF± each).</p> <p>4' high band (splash zone) of 1/2" deep scaling with exposed aggregate (See Underwater Inspection Report - June 11, 2015 by ECM Engineers, Inc.).</p>
5	Bridge Seat (Concrete)	<p>Severe scaling at north end extending from coping.</p> <p>Spalled and incipient spalls in pedestal north end under north girder of west span undermined bearing east side 1 1/2" full width.</p> <p>Spalled pedestal south end under south girder west span.</p> <p>South fascia bearing at west span undermined 2". (Photo No. 16-25).</p>
7	Footings / Waterway Probing	<p>Work Done: New fabric formed grout bags placed around the periphery of the pier (w/ timber relieving platform). The undermined / voided areas (up to 4 feet deep) at various locations beneath the timber relieving platform / pier (w/ exposed timber piles) filled with grout / concrete. (Photo No. 16-32). (See Underwater Inspection Report- June 11, 2015 by ECM Engineers, Inc.).</p>

Additional Remarks:

Solid wall pier on timber piles.

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

SUBSTRUCTURE/SCOUR

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
COUNTERMEASURES		
	Description	Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (Photo No. 16-28) and some stone riprap.
7	Condition	No significant defects. This structure is under design for scour countermeasures and construction is tentatively scheduled in 2015 (pending NJDEP permitting).

PROBING/SCOUR		
7	Findings	Work Done: The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete (Photo No. 16-28). No scour or undermining noticed.
	Changes Since Prior Inspection	See "Work Done" above.
	Debris	None

Repair Quantities: _____

ABUTMENT East

RATING	COMPONENT	REMARKS
COUNTERMEASURES		
	Description	Work Done: New sheet piling installed (backfilled with concrete) along the full length of abutment (Photo No. 16-30) and some stone riprap.
7	Condition	No significant defects. This structure is under design for scour countermeasures and construction is tentatively scheduled in 2015 (pending NJDEP permitting).

PROBING/SCOUR		
7	Findings	Work Done: The undermined / voided areas (up to 12" deep) at various locations beneath the timber relieving platform / abutment (w/ exposed timber piles) filled with grout / concrete (Photo No. 16-30). No scour or undermining noticed.
	Changes Since Prior Inspection	See "Work Done" above.
	Debris	Minor

Repair Quantities: _____

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

SUBSTRUCTURE/SCOUR

SI&A Item 60 Condition Rating: 5

PIER Center

RATING	COMPONENT	REMARKS
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COUNTERMEASURES

	Description	Work Done: New fabric formed grout bags placed around the periphery of the pier (Photo No. 16-32).
7	Condition	No significant defects. This structure is under design for scour countermeasures and construction is tentatively scheduled in 2015 (pending NJDEP permitting).

PROBING/SCOUR

7	Findings	Work Done: The undermined / voided areas (up to 4 feet deep) at various locations beneath the timber relieving platform / pier (w/ exposed timber piles) filled with grout / concrete. (Photo No. 16-32). No scour or undermining noticed.
	Changes Since Prior Inspection	See "Work Done" above.
	Debris	None

Repair Quantities: _____

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

WATERWAY/CHANNEL

SI&A Item No. 61: 8

SI&A Item No. 71: 8

WATERWAY Cooper River

Prioritization Category: 2

SPAN(S) Two

Scour Sufficiency Rating: 55.0

RATING	COMPONENT	REMARKS
FLOW CONDITIONS		
	Direction	Tidal - Downstream is north.
	Magnitude	Channel width is slightly wider than bridge opening.
	Velocity	Medium
EMBANKMENTS		
8	Upstream	Stable; no significant defects.
8	Downstream	Stable; no significant defects.
8	Channel Countermeasures	Some riprap along upstream and downstream embankments. No significant defects.
CHANNEL MOVEMENT AND CHANGES		
	Horizontal Location	Centered through structure.
	Cross Section	Thalweg is in center of both spans (Refer to the sounding data and cross sections).
	Alignment	Straight
	Changes Since Previous Inspection	None noted
	Navigation Clearances	N/A
	Waterway Opening	Appears adequate for normal flow.
6	Debris in Channel	Old vertical piles in west span.

Repair Quantities: _____

Structure No.: 043B006 Route: 9004 Cycle No.: 16
 Name: Kaighn Avenue (CR 607) over Cooper River Insp. Date: 03/25/2015

HIGHWAY SAFETY

Coding of SI&A Item 36: 0000
 1: Meets Currently Acceptable Standards
 0: Does Not Meet Currently Acceptable Standards
 N: Not Applicable

RATING		COMPONENT	REMARKS
0		Bridge Railing	2'-10" high concrete encased through girder bridge railing, blunt ends.
0	0	Transition to Bridge Railing	None. Abrupt termination at all four corners.
	1	Curb / Sidewalk Terminations	Continuous
0		Approach Guide Rails	None
0		Approach Guide Rail End Terminals	None

DECK GEOMETRY

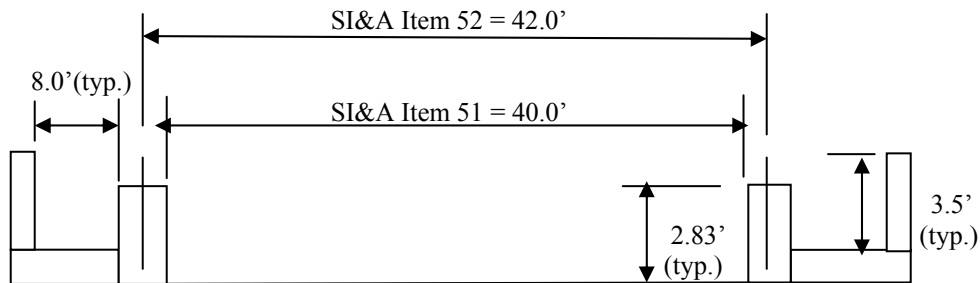
SI&A Item 68 Rating: 5

COMPONENT	REMARKS
Bridge Cross Section	Bridge roadway width is consistent with approaches. See deck cross section on the following page.
Adequacy of Lane / Shoulder Widths	Two (2) 20' travel lanes Curb to curb = 40.0' ADT: 14,780 (2015) Table 2A
Vertical Clearance over Deck	Unlimited

*Posting for Load / Speed / Clearance Restrictions (Include a photo)	None
--	------

DECK CROSS SECTION

KAIGHN AVENUE Looking East



Typical Cross Section N.T.S.

Structure No.: 043B006 Route: 9004 Cycle No.: 15
 Name: Kaighn Avenue over Cooper River Insp. Date: 03/27/2013

FENCING

Coding of SI&A Item FN: Y
 Coding of SI&A Item FO: 0
 Coding of SI&A Item FP (in thousands): \$34

Warranted (Per Design Manual Section 23):	<u>Yes/No</u>	
If Yes: (#3b) Description: Consistent with Item 1, existing/potential for pedestrian traffic nearby: built up area		
<u>Current Status of Fence & Sidewalk:</u>	<u>Left Side</u>	<u>Right Side</u>
a. Fence:	Yes/ <u>No</u>	Yes/ <u>No</u>
b. Sidewalk Width:	8.0 FT	8.0 FT
c. Total Height of fence above curb/sidewalk:	N/A	N/A
d. Type of Fence (per Design Manual Section 23):	N/A	N/A
Action Recommended: Install Type 3B CLF along both sides of the bridge		
Estimated Cost: \$150/LF x 224 LF = \$33,600 (ITEM FP) Say = \$34,000		

WORK DONE HISTORICAL DATA

CYCLE NO.	YEAR	WORK DONE SUMMARY
16	2015	New sheet piling installed (backfilled with concrete) along the full length of abutments (w/ timber relieving platforms) and new fabric formed grout bags placed around the entire periphery of the concrete pier (w/ timber relieving platform). The undermined / voided areas at various locations beneath the timber relieving platforms / abutments / pier (w/ exposed timber piles) filled with grout / concrete.
15	2013	Concrete patching repair on top of the concrete railing at the south side. New bituminous overlay at both approaches. New light pole installed at southwest approach.
14	2011	None
13	2009	None

Structure No.: 043B006 Route: 9004 Cycle No.: 15
Name: Kaighn Avenue over Cooper River Insp. Date: 03/27/2013

The following reports, files and memos are associated with this document:

UNDERWATER BRIDGE EVALUATION SURVEY REPORT:

STR. NO: 043B006
NAME: Kaighn Avenue (CR 607) over Cooper River
DATED: June 11, 2015
Prepared By: ECM Engineers, Inc.
127 Route US 206, Suite 30
White Horse Commercial Park
Hamilton, NJ 08610

Prepared For: Buchart Horn, Inc.

This report is in the file named: 043B006_20150611cy16_uw.pdf.

This report was prepared as part of this inspection and is associated with this report by reference.

PRIORITY REPAIRS:

**The following Priority Letter(s) have been included for this structure:
Each Priority Letter has been submitted as a separate PDF file.**

PDF Filename(s): 0403B006_20150325cy16_PR1_01.pdf

Appendix B

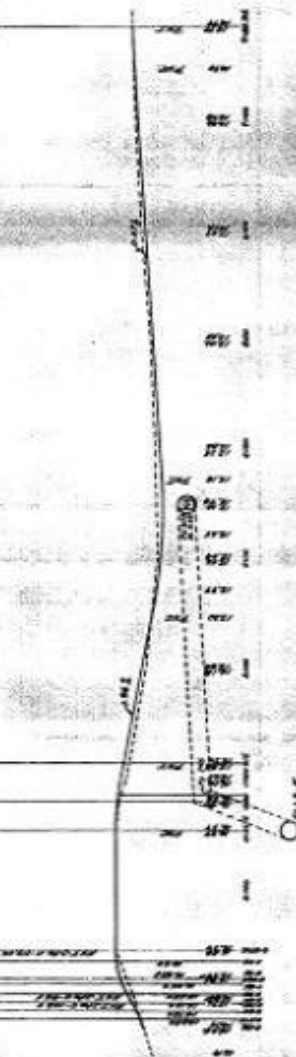
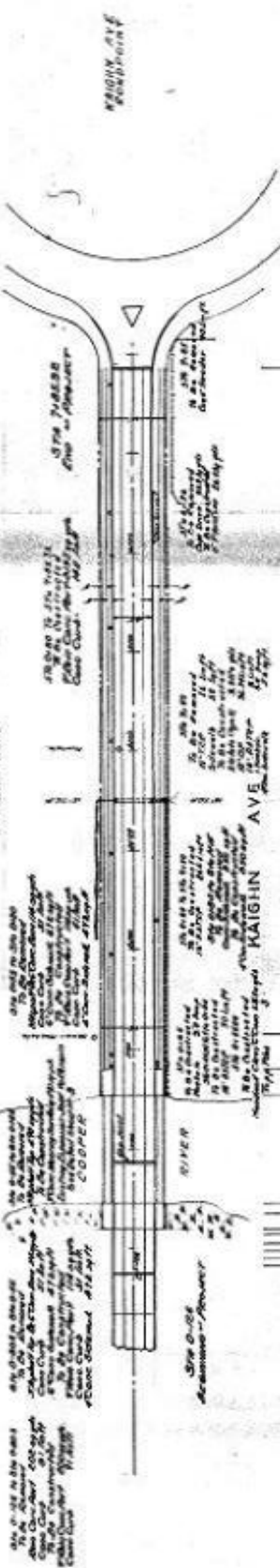
As-Built Plans

100' SCALE
PLAN VIEW

100' SCALE
ELEVATION VIEW

100' SCALE
SECTION VIEW

100' SCALE
SECTION VIEW



KAIGHIN AVE
1927

DRAWING NO. 667
PLAN NO. 1

DATE: 1927

DARWIN COUNTY ROAD

at 21/2

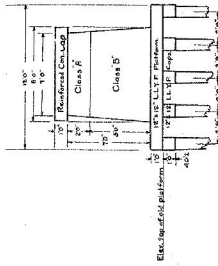
WALLS BETWEEN CAP AND RAIN TABLE

Section: Abutment

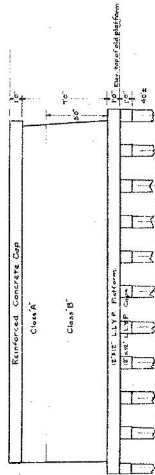
Section: Wing



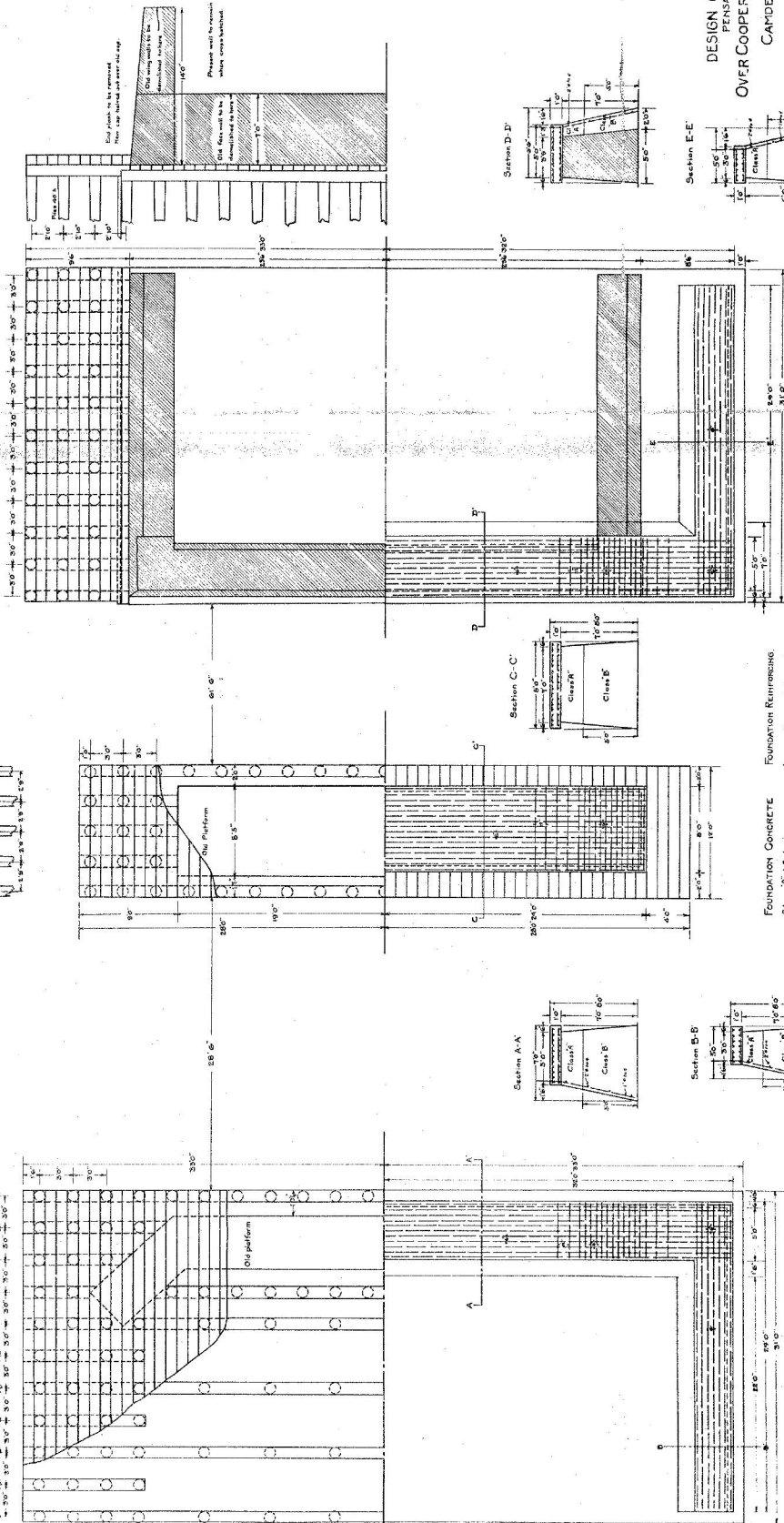
PIER



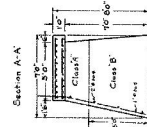
WEST ABUTMENT



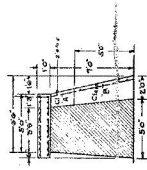
EAST ABUTMENT



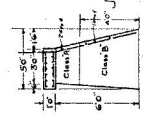
Section C-C'



Section D-D'



Section E-E'



FOUNDATION CONCRETE
Class A' 1:2 A mix
Class B' 1:1 1/2 mix with
1% galv. Anti Hydro persulph.

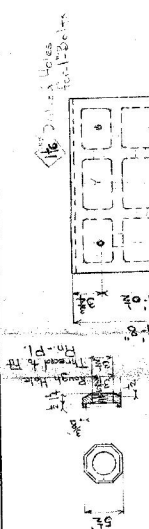
FOUNDATION REINFORCING:
In cap: 7 square deformed.
All others 3/8 round deformed.

DRAWER NO. 3
PLAN NO. E.C. 6

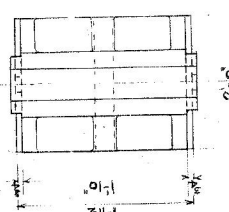
DESIGN OF BRIDGE No 63
PENSAUKEN TOWNSHIP
OVER COOPER RIVER - KAIGHN AVE.
CAMDEN COUNTY, N. J.
J.J. Albertson, County Engineer
Scale 1/4" = 1'-0"

1924

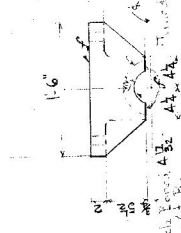
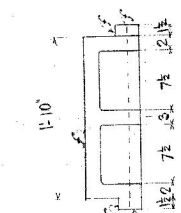
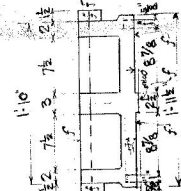
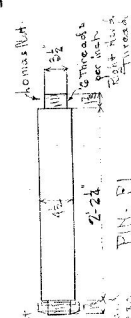
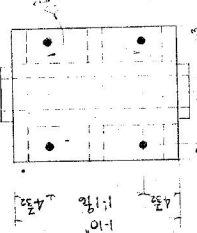
SHEET 3



LOMAS NUT - LNI
 (To be replaced with LNI)
 Part # 1980



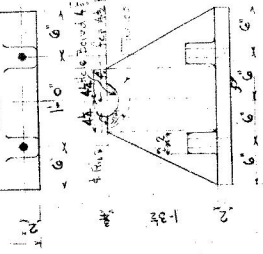
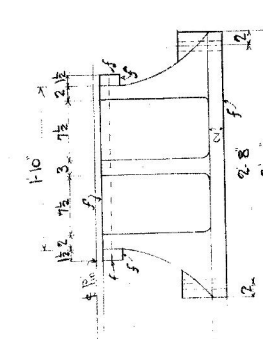
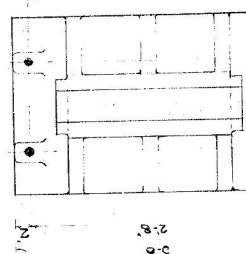
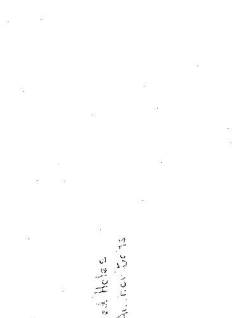
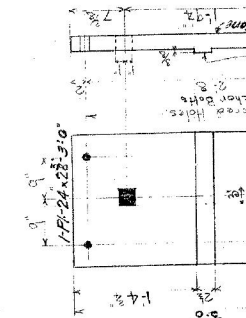
WASHERS - PWI



SHOE - LS2 Part # 1977

SHOE - LS1 Part # 1975

SHOE - LS3 Part # 1979



SHOE - LS1 Part # 1975

ROCKER NEST - RNI

SHOE - LS3 Part # 1979

PLAN No. 106-7

No.	Description	Mark
1	Shoe (Cast Steel)	LS1
2	Shoe (Cast Steel)	LS2
3	Shoe (Cast Steel)	LS3
4	Washer	PWI
5	Pin	PI
6	Bed Plate	BPI
7	Rocker Nest	RNI
8	Shoe (Cast Steel)	LS1

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

PLAN No. 106-7

McCLINTIC MARSHALL CONSTR. CO.

NEW YORK DRAFTING DEPT.

Checked By: [Signature]

Drawn By: [Signature]

Scale: As Shown

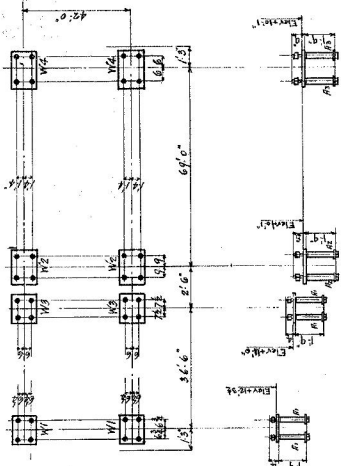
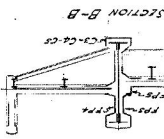
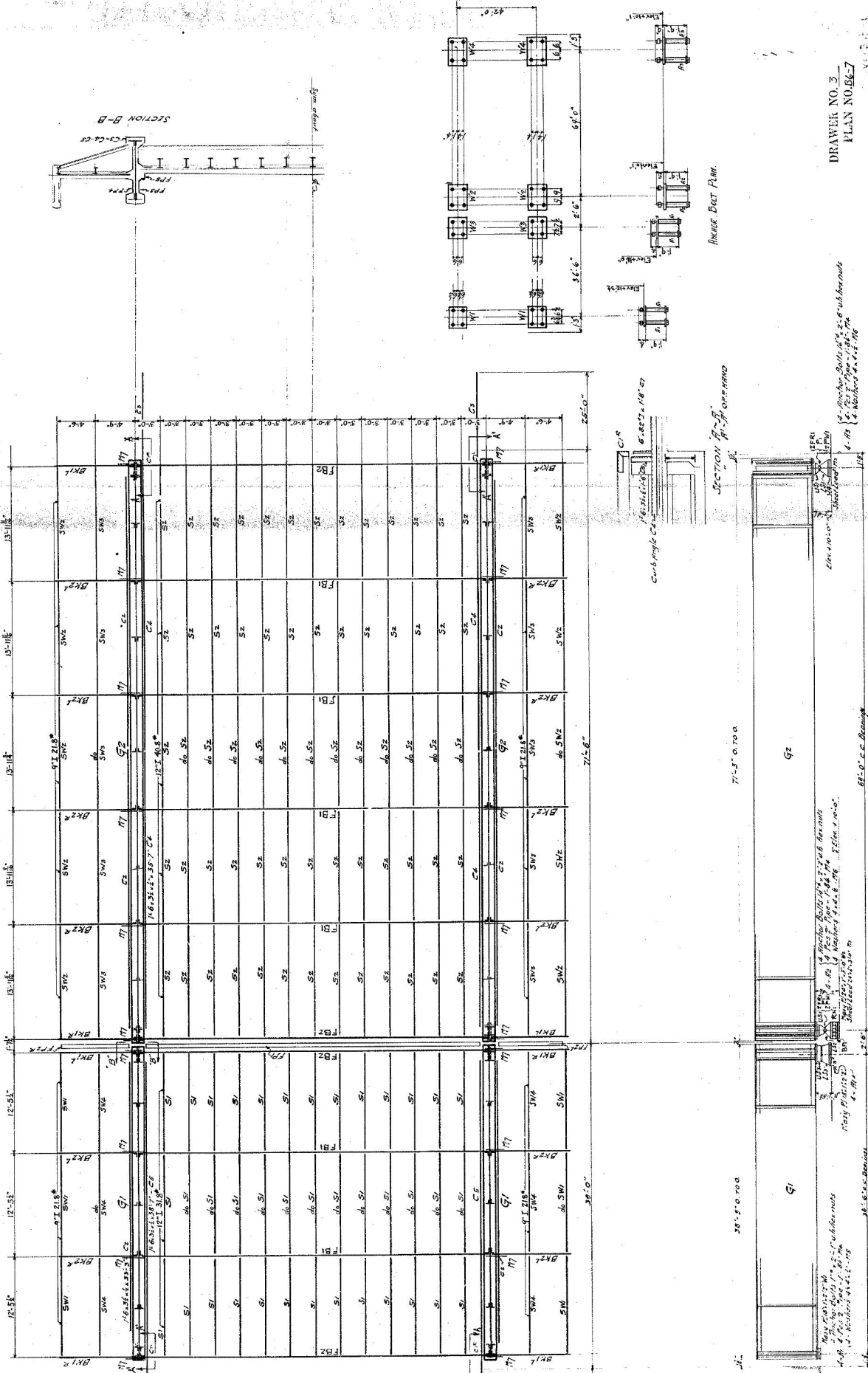
Machine Finished

Material: Cast Steel

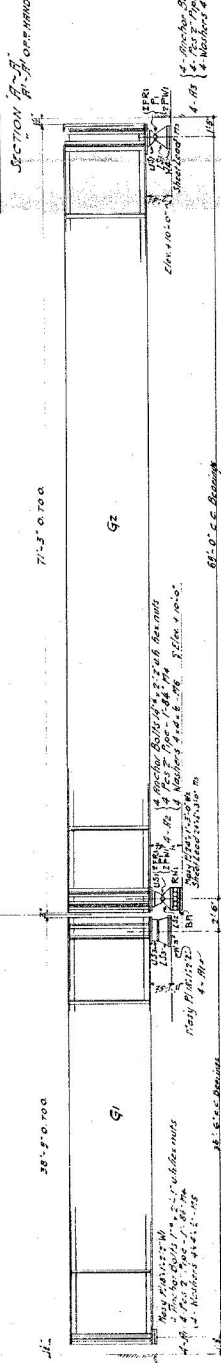
Part No. 1129

Revised 5/26/47

All sharp corners of castings BRIDGE # 33
 To be Filleted.
 All cast steel to be annealed. CAMDEN COUNTY, N.J.
 Note: Have quantities as shown.
 Plans to be altered.
 Machine finished surfaces to be indicated.
 Material: Cast Steel



BRIDGE DECK PLAN



SECTION A-A

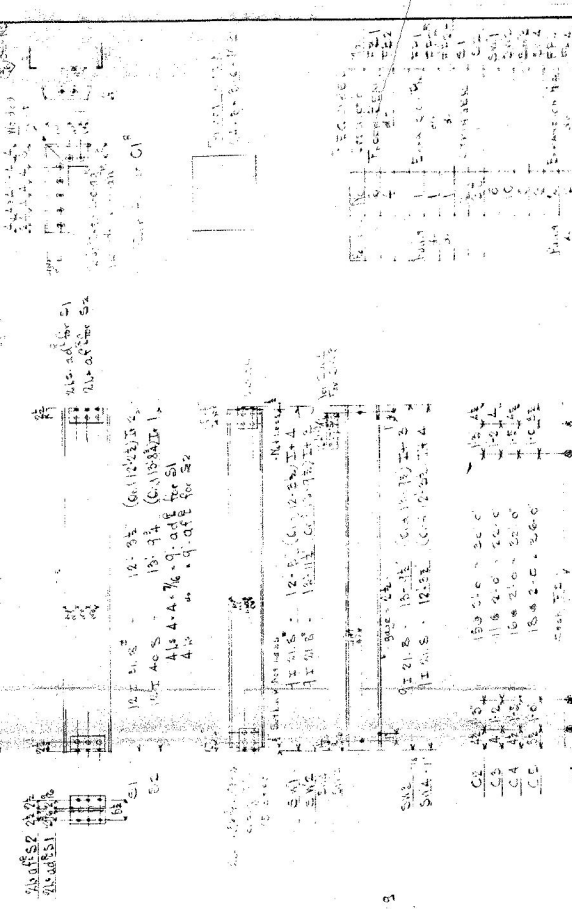
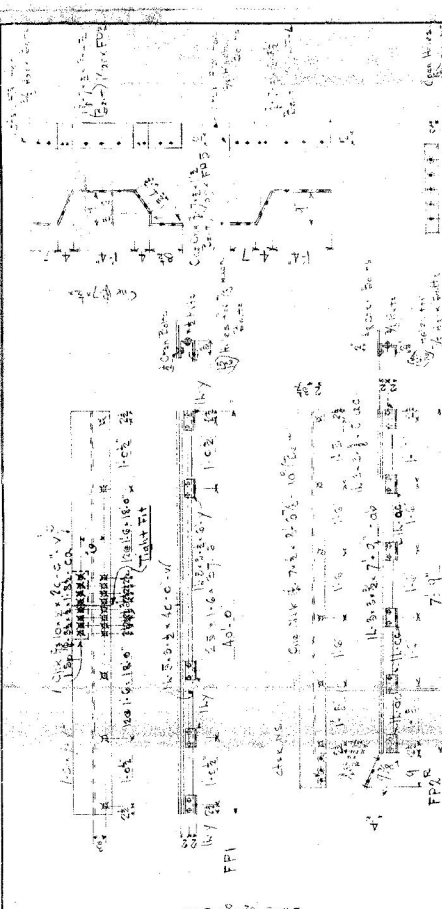
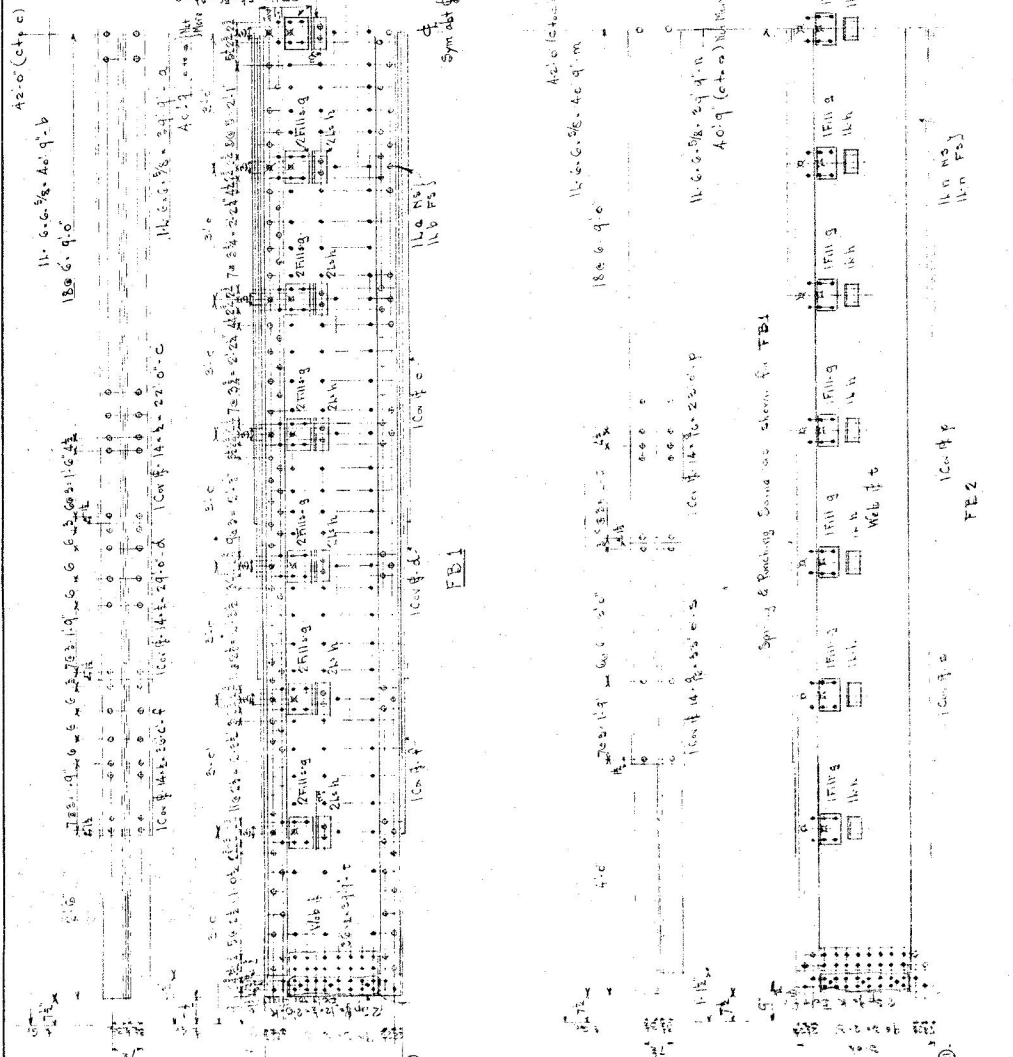
DRAWER NO. 3
PLAN NO. 66-7

BRIDGE No. 3
COOPER RIVER-CAMDEN, N. J.
MCCLENTIC MARSHALL CONSTR. CO.
-FARTSTOWN, WORKS
NEW YORK DRAFTING DEPT.
Drawn By: J.S. In Charge R.F.
Checked By: J.S. DATE: No. 123
Revised: No. 123
Sheet: No. 51

1. - Member bolts 4 x 2.6 x 6 with nuts
2. - 2 x 2 1/2" x 1/4" x 1/4"
3. - 1/4" x 1/4" x 1/4"
4. - 1/4" x 1/4" x 1/4"

1. - 1/4" x 1/4" x 1/4"
2. - 1/4" x 1/4" x 1/4"
3. - 1/4" x 1/4" x 1/4"
4. - 1/4" x 1/4" x 1/4"

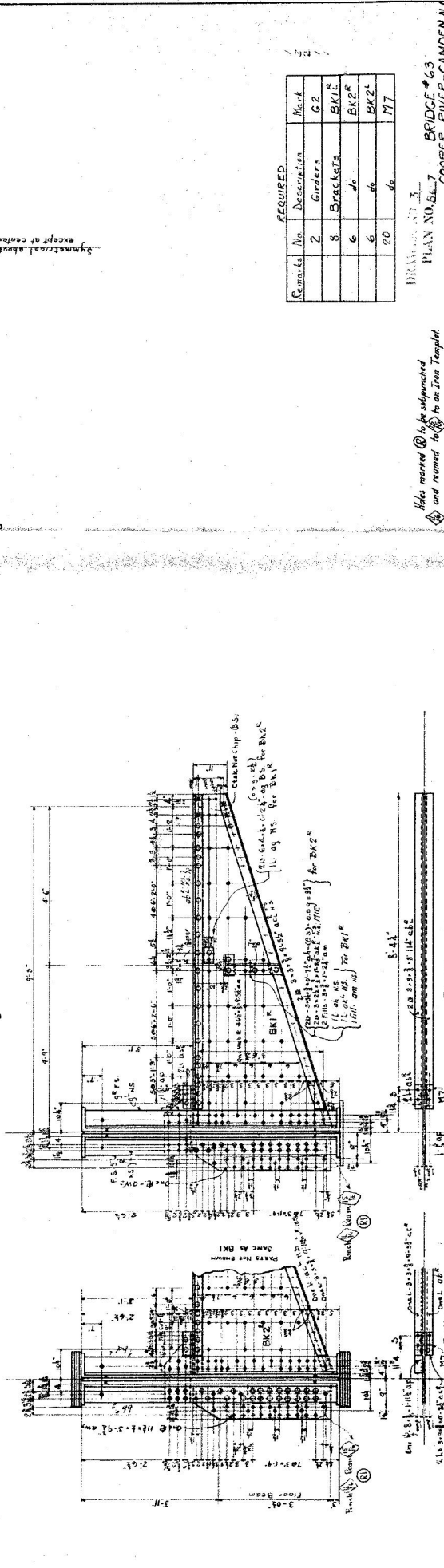
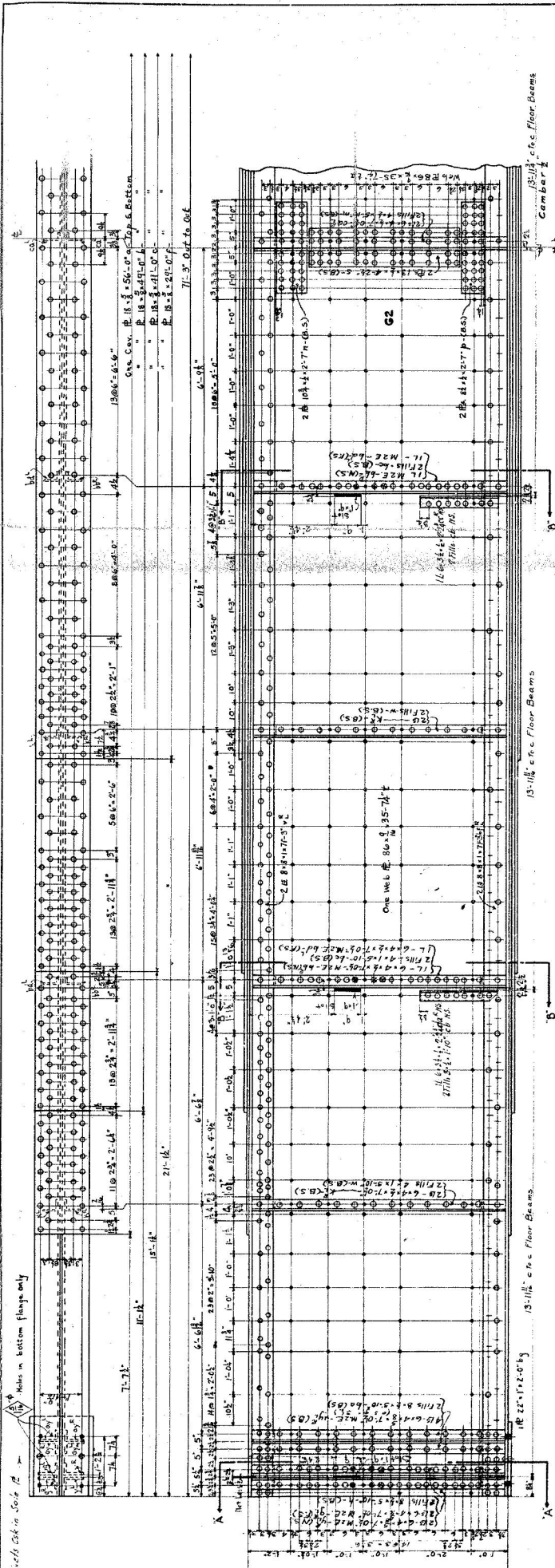
1. - 1/4" x 1/4" x 1/4"
2. - 1/4" x 1/4" x 1/4"
3. - 1/4" x 1/4" x 1/4"
4. - 1/4" x 1/4" x 1/4"



NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	100 ft x 100 ft	1	SQ. FT.	100.00	100.00
2	150 ft x 150 ft	1	SQ. FT.	225.00	225.00
3	200 ft x 200 ft	1	SQ. FT.	400.00	400.00
4	100 ft x 150 ft	1	SQ. FT.	150.00	150.00
5	150 ft x 200 ft	1	SQ. FT.	300.00	300.00
6	200 ft x 250 ft	1	SQ. FT.	500.00	500.00
7	100 ft x 250 ft	1	SQ. FT.	250.00	250.00
8	150 ft x 300 ft	1	SQ. FT.	450.00	450.00
9	200 ft x 350 ft	1	SQ. FT.	700.00	700.00
10	250 ft x 400 ft	1	SQ. FT.	1000.00	1000.00
11	300 ft x 450 ft	1	SQ. FT.	1350.00	1350.00
12	350 ft x 500 ft	1	SQ. FT.	1750.00	1750.00
13	400 ft x 550 ft	1	SQ. FT.	2200.00	2200.00
14	450 ft x 600 ft	1	SQ. FT.	2700.00	2700.00
15	500 ft x 650 ft	1	SQ. FT.	3250.00	3250.00
16	550 ft x 700 ft	1	SQ. FT.	3850.00	3850.00
17	600 ft x 750 ft	1	SQ. FT.	4500.00	4500.00
18	650 ft x 800 ft	1	SQ. FT.	5200.00	5200.00
19	700 ft x 850 ft	1	SQ. FT.	5950.00	5950.00
20	750 ft x 900 ft	1	SQ. FT.	6750.00	6750.00
21	800 ft x 950 ft	1	SQ. FT.	7600.00	7600.00
22	850 ft x 1000 ft	1	SQ. FT.	8500.00	8500.00
23	900 ft x 1050 ft	1	SQ. FT.	9450.00	9450.00
24	950 ft x 1100 ft	1	SQ. FT.	10450.00	10450.00
25	1000 ft x 1150 ft	1	SQ. FT.	11500.00	11500.00
26	1050 ft x 1200 ft	1	SQ. FT.	12600.00	12600.00
27	1100 ft x 1250 ft	1	SQ. FT.	13750.00	13750.00
28	1150 ft x 1300 ft	1	SQ. FT.	15000.00	15000.00
29	1200 ft x 1350 ft	1	SQ. FT.	16350.00	16350.00
30	1250 ft x 1400 ft	1	SQ. FT.	17750.00	17750.00
31	1300 ft x 1450 ft	1	SQ. FT.	19200.00	19200.00
32	1350 ft x 1500 ft	1	SQ. FT.	20700.00	20700.00
33	1400 ft x 1550 ft	1	SQ. FT.	22250.00	22250.00
34	1450 ft x 1600 ft	1	SQ. FT.	23850.00	23850.00
35	1500 ft x 1650 ft	1	SQ. FT.	25500.00	25500.00
36	1550 ft x 1700 ft	1	SQ. FT.	27200.00	27200.00
37	1600 ft x 1750 ft	1	SQ. FT.	28950.00	28950.00
38	1650 ft x 1800 ft	1	SQ. FT.	30750.00	30750.00
39	1700 ft x 1850 ft	1	SQ. FT.	32600.00	32600.00
40	1750 ft x 1900 ft	1	SQ. FT.	34500.00	34500.00
41	1800 ft x 1950 ft	1	SQ. FT.	36450.00	36450.00
42	1850 ft x 2000 ft	1	SQ. FT.	38450.00	38450.00
43	1900 ft x 2050 ft	1	SQ. FT.	40500.00	40500.00
44	1950 ft x 2100 ft	1	SQ. FT.	42600.00	42600.00
45	2000 ft x 2150 ft	1	SQ. FT.	44750.00	44750.00
46	2050 ft x 2200 ft	1	SQ. FT.	46950.00	46950.00
47	2100 ft x 2250 ft	1	SQ. FT.	49200.00	49200.00
48	2150 ft x 2300 ft	1	SQ. FT.	51500.00	51500.00
49	2200 ft x 2350 ft	1	SQ. FT.	53850.00	53850.00
50	2250 ft x 2400 ft	1	SQ. FT.	56250.00	56250.00
51	2300 ft x 2450 ft	1	SQ. FT.	58700.00	58700.00
52	2350 ft x 2500 ft	1	SQ. FT.	61200.00	61200.00
53	2400 ft x 2550 ft	1	SQ. FT.	63750.00	63750.00
54	2450 ft x 2600 ft	1	SQ. FT.	66350.00	66350.00
55	2500 ft x 2650 ft	1	SQ. FT.	69000.00	69000.00
56	2550 ft x 2700 ft	1	SQ. FT.	71700.00	71700.00
57	2600 ft x 2750 ft	1	SQ. FT.	74450.00	74450.00
58	2650 ft x 2800 ft	1	SQ. FT.	77250.00	77250.00
59	2700 ft x 2850 ft	1	SQ. FT.	80100.00	80100.00
60	2750 ft x 2900 ft	1	SQ. FT.	83000.00	83000.00
61	2800 ft x 2950 ft	1	SQ. FT.	85950.00	85950.00
62	2850 ft x 3000 ft	1	SQ. FT.	88950.00	88950.00
63	2900 ft x 3050 ft	1	SQ. FT.	92000.00	92000.00
64	2950 ft x 3100 ft	1	SQ. FT.	95100.00	95100.00
65	3000 ft x 3150 ft	1	SQ. FT.	98250.00	98250.00
66	3050 ft x 3200 ft	1	SQ. FT.	101450.00	101450.00
67	3100 ft x 3250 ft	1	SQ. FT.	104700.00	104700.00
68	3150 ft x 3300 ft	1	SQ. FT.	108000.00	108000.00
69	3200 ft x 3350 ft	1	SQ. FT.	111350.00	111350.00
70	3250 ft x 3400 ft	1	SQ. FT.	114750.00	114750.00
71	3300 ft x 3450 ft	1	SQ. FT.	118200.00	118200.00
72	3350 ft x 3500 ft	1	SQ. FT.	121700.00	121700.00
73	3400 ft x 3550 ft	1	SQ. FT.	125250.00	125250.00
74	3450 ft x 3600 ft	1	SQ. FT.	128850.00	128850.00
75	3500 ft x 3650 ft	1	SQ. FT.	132500.00	132500.00
76	3550 ft x 3700 ft	1	SQ. FT.	136200.00	136200.00
77	3600 ft x 3750 ft	1	SQ. FT.	140000.00	140000.00
78	3650 ft x 3800 ft	1	SQ. FT.	143850.00	143850.00
79	3700 ft x 3850 ft	1	SQ. FT.	147750.00	147750.00
80	3750 ft x 3900 ft	1	SQ. FT.	151700.00	151700.00
81	3800 ft x 3950 ft	1	SQ. FT.	155700.00	155700.00
82	3850 ft x 4000 ft	1	SQ. FT.	159750.00	159750.00
83	3900 ft x 4050 ft	1	SQ. FT.	163850.00	163850.00
84	3950 ft x 4100 ft	1	SQ. FT.	168000.00	168000.00
85	4000 ft x 4150 ft	1	SQ. FT.	172150.00	172150.00
86	4050 ft x 4200 ft	1	SQ. FT.	176350.00	176350.00
87	4100 ft x 4250 ft	1	SQ. FT.	180600.00	180600.00
88	4150 ft x 4300 ft	1	SQ. FT.	184900.00	184900.00
89	4200 ft x 4350 ft	1	SQ. FT.	189250.00	189250.00
90	4250 ft x 4400 ft	1	SQ. FT.	193650.00	193650.00
91	4300 ft x 4450 ft	1	SQ. FT.	198100.00	198100.00
92	4350 ft x 4500 ft	1	SQ. FT.	202600.00	202600.00
93	4400 ft x 4550 ft	1	SQ. FT.	207150.00	207150.00
94	4450 ft x 4600 ft	1	SQ. FT.	211750.00	211750.00
95	4500 ft x 4650 ft	1	SQ. FT.	216400.00	216400.00
96	4550 ft x 4700 ft	1	SQ. FT.	221100.00	221100.00
97	4600 ft x 4750 ft	1	SQ. FT.	225850.00	225850.00
98	4650 ft x 4800 ft	1	SQ. FT.	230650.00	230650.00
99	4700 ft x 4850 ft	1	SQ. FT.	235500.00	235500.00
100	4750 ft x 4900 ft	1	SQ. FT.	240400.00	240400.00

McCLENTIC MARSHALL CONSTR. CO.
 NEW YORK DRAFTING DEPT.
 Drawn By: [Name]
 Checked By: [Name]
 Date: [Date]
 Plan No. 100

Note: [Text]
 and returned to [Name] on [Date]



REQUIRED

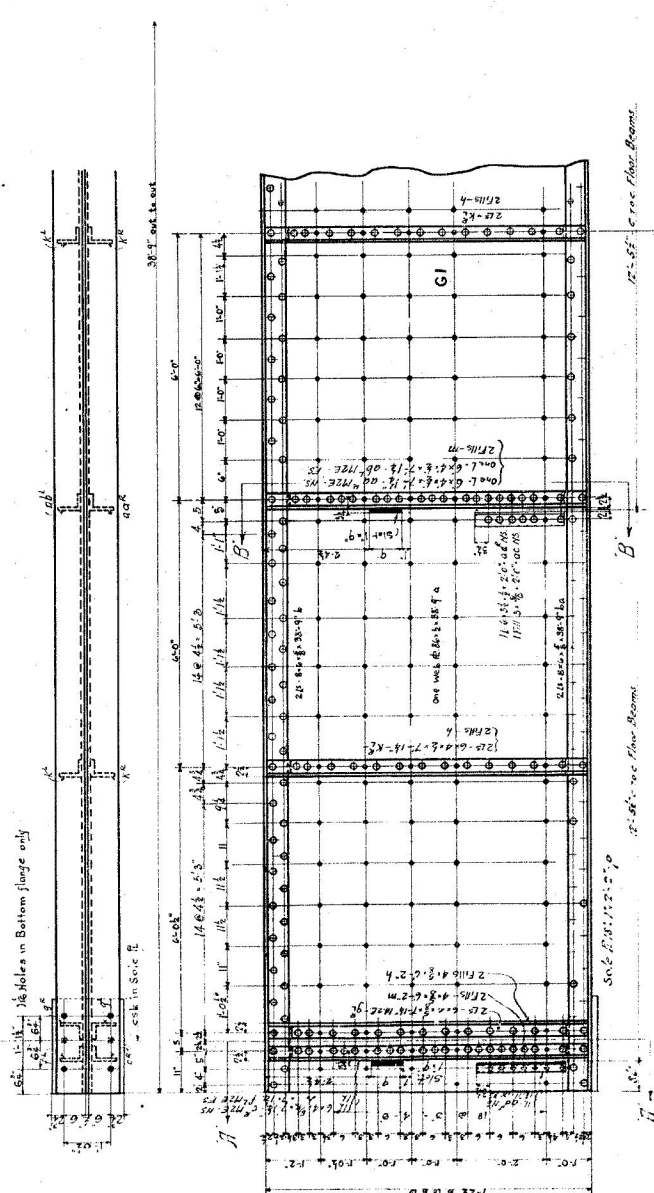
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2	Girders	G2
8	Brackets	BK1C
6	do	BK2C
6	do	BK2L
20	do	MT

DRAWING NO. 7
 PLAN NO. 56.7
BRIDGE # 63
COOPER RIVER-CAMDEN, N.J.
 McCUTCHELL MARSHALL CONSTR. CO.
 PORTTOWN WORKS
 NEW YORK DRAFTING DEPT.
 Drawn By J.S.
 Checked By J.H.C.
 Date 11/25/24
 Sheet No. 125

Notes:
 Knees 3/4" x 4"
 Holes in material 3/4"
 thick and over to
 be sub-punched
 and reamed.

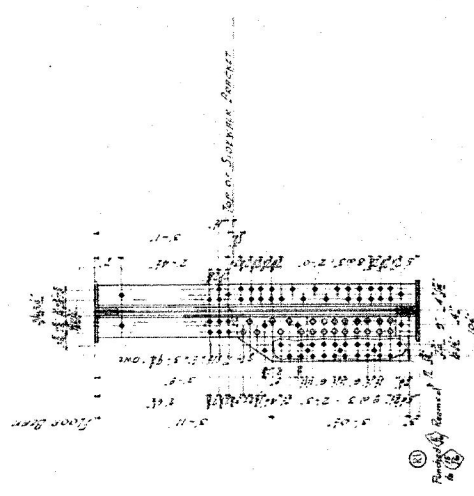
Holes marked (M) to be sub-punched
 and reamed to fit an Iron Template.

No Print



18'-00\"/>

18'-00\"/>



Maxy R 18'-1.5'-0\"/>

Maxy P 24'-1.5'-0\"/>

Remarks	No.	Description	Mark
For	2	Cl	Cl
For	2	M2	M2
For	2	M3	M3
For	2	M4	M4

BRIDGE #43
 COOPER RIVER-CAMDEN CO. NJ
 McCURTIC MARSHALL CONSTR. CO.
 PARTNERSHIP WORKS
 NEW YORK DRAFTING DEPT.
 Drawn By J.S. S. Chappell R.C.
 Checked By J.T.C. DWG. No. 1151
 Period

Holes marked (C) to be subpunched
 and reamed (R) to an Iron Template
 Rivets 7/8\"/>

SECTIONS F-F & B-B

Appendix C

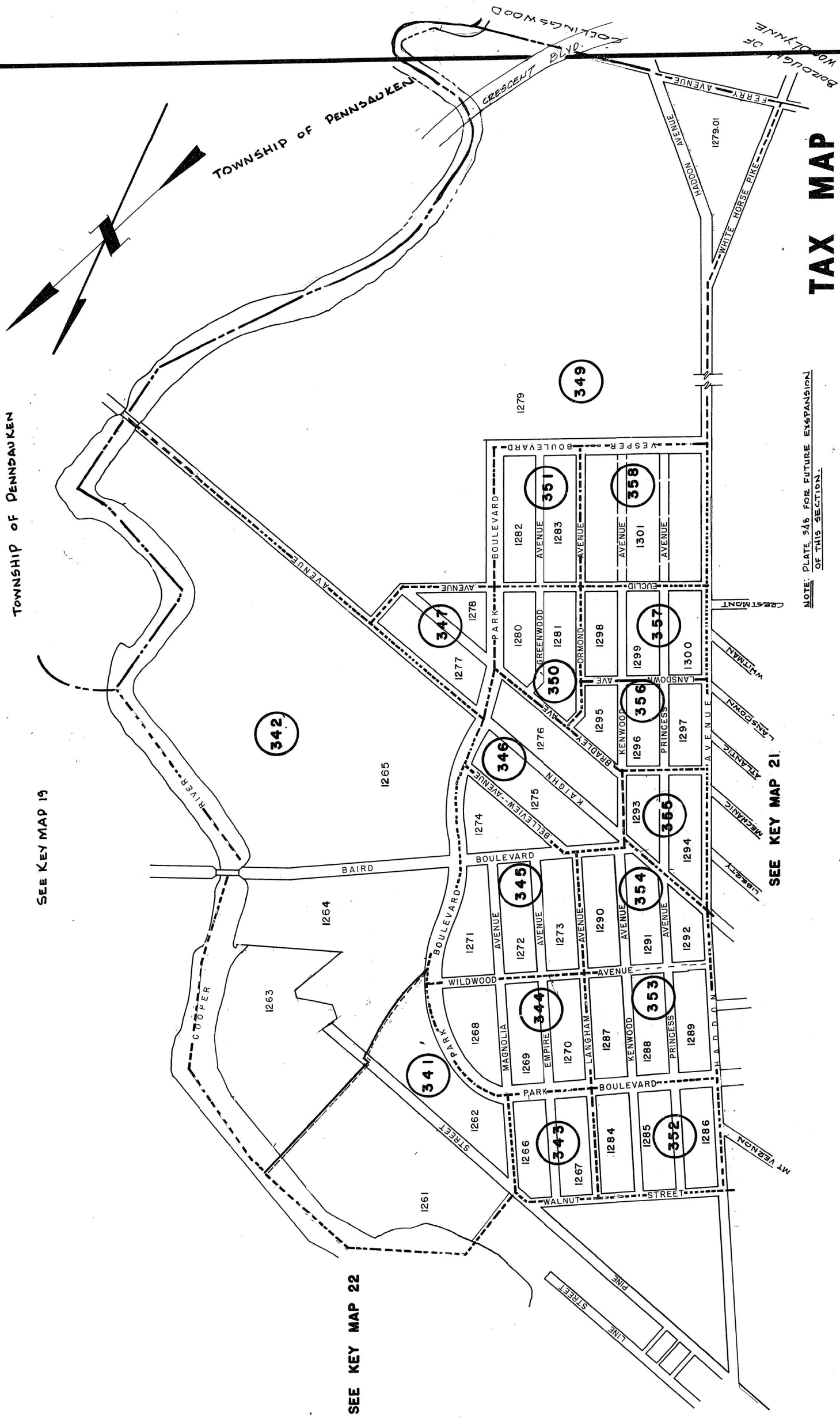
Tax Maps

TOWNSHIP OF PENNSAUKEN

SEE KEY MAP 19

SEE KEY MAP 22

SEE KEY MAP 21



NOTE: PLATE 348 FOR FUTURE EXPANSION OF THIS SECTION.

"THE AREAS, BOUNDARIES, AND DIMENSIONS SHOWN ON THIS TAX MAP ARE DERIVED FROM GROUND SURVEYS, AERIAL SURVEYS, AND RECORDED PLANS, MAPS, DEEDS, AND WILL BE TO BE USED FOR TAX ASSESSMENTS PURPOSES ONLY."

NEW JERSEY DEPARTMENT OF THE TREASURY
DIVISION OF TAXATION
LOCAL PROPERTY AND PUBLIC UTILITY BRANCH
APPROVED FOR THE CITY OF CAMDEN
PROVISIONS OF CHAPTER 172, LAWS OF 1913, ETC.
FOR THE DIRECTOR, DIVISION OF TAXATION

BY *[Signature]* P.E. & S.
LIC. #1434 CHIEF ENGINEERING SECTION
DATE DEC. 16, 1985 SERIAL NO. 652

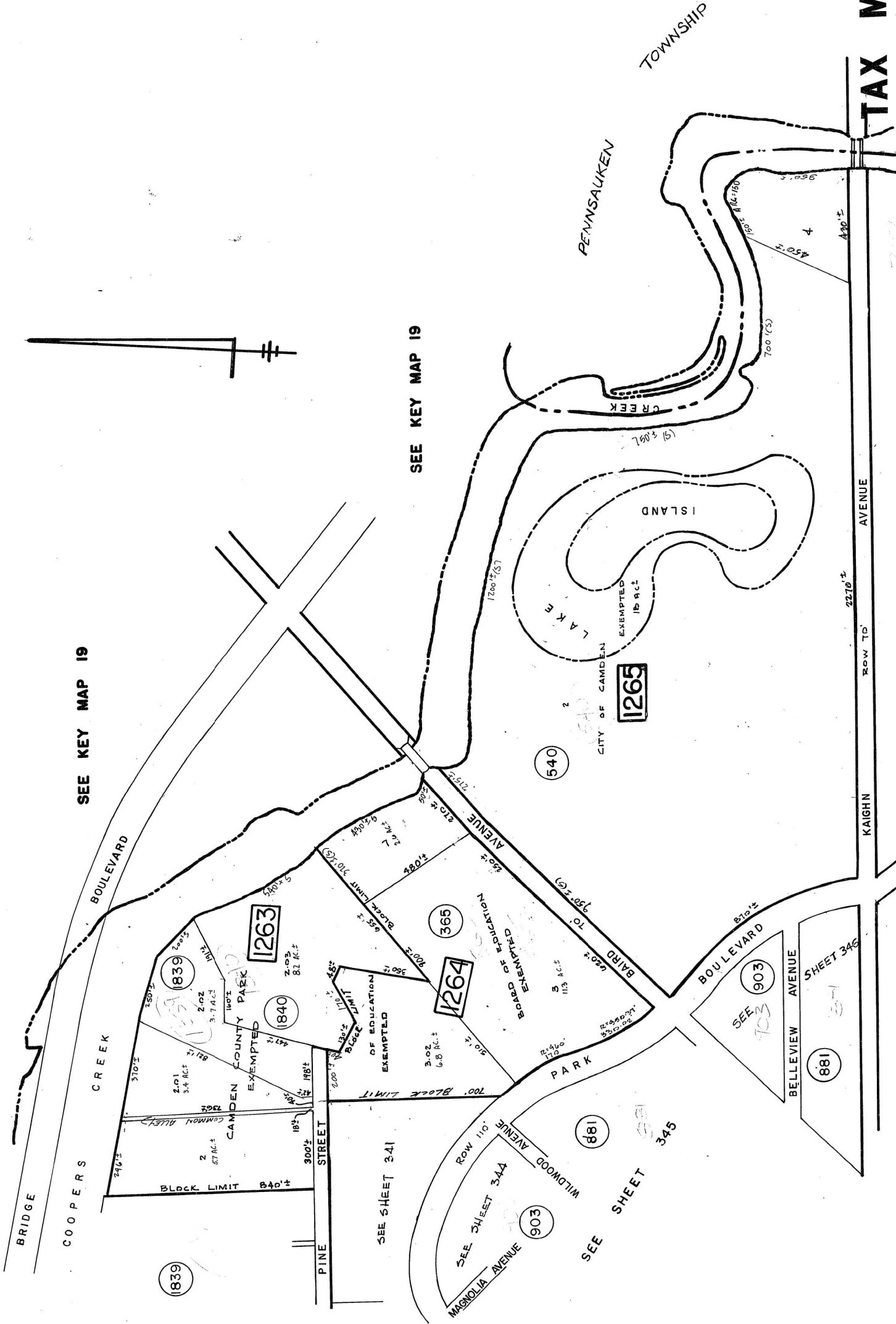
"I HEREBY CERTIFY THAT THIS MAP AND THE SURVEY HAS BEEN MADE UNDER MY IMMEDIATE SUPERVISION, AND COMPLIES WITH THE LAWS OF THE STATE OF NEW JERSEY."

[Signature]
PROFESSIONAL ENGINEER & LAND SURVEYOR NO. 6634

TO SHOW CONDITIONS AS OF SEPT. 1, 1985

TAX MAP
CITY OF CAMDEN
CAMDEN COUNTY NEW JERSEY

SCALE: 1" = 300' 1985
KENNETH R. REMINGTON LIC. NO. 6634
REMINGTON ENGINEERS, INC.
6400 S. CRESCENT BLVD.
PENNSAUKEN N.J.



SEE KEY MAP 19

SEE KEY MAP 19

SEE SHEET 341

SEE SHEET 344

SEE SHEET 345

SEE SHEET 347

SEE SHEET 349

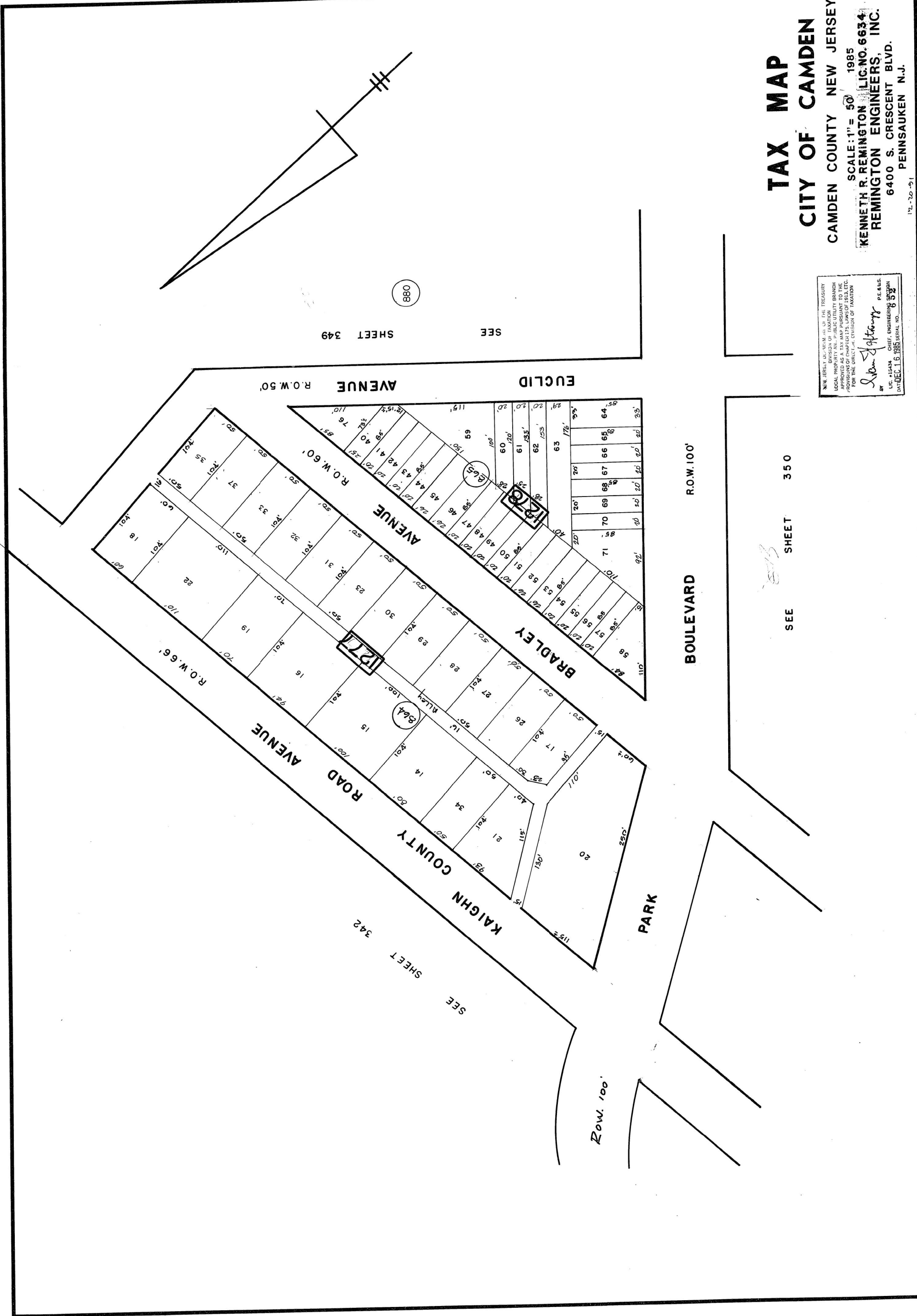


TAX MAP
CITY OF CAMDEN
 CAMDEN COUNTY NEW JERSEY

SCALE: 1" = 200' 1985
KENNETH R. REMINGTON LIC. NO. 6634
REMINGTON ENGINEERS, INC.
 6400 S. CRESCENT BLVD.
 PENNSAUKEN N.J.

NEW JERSEY DEPARTMENT OF THE TREASURY
 DIVISION OF TAXATION
 LOCAL PROPERTY AND PUBLIC UTILITIES BRANCH
 FOR THE DIRECTOR, DIVISION OF TAXATION
 BY *Kenneth R. Remington* P.E. & L.S.
 LIC. #15434, CHIEF ENGINEERING SECTION
 DATE DEC. 16, 1985, SERIAL NO. 652

12-20-91



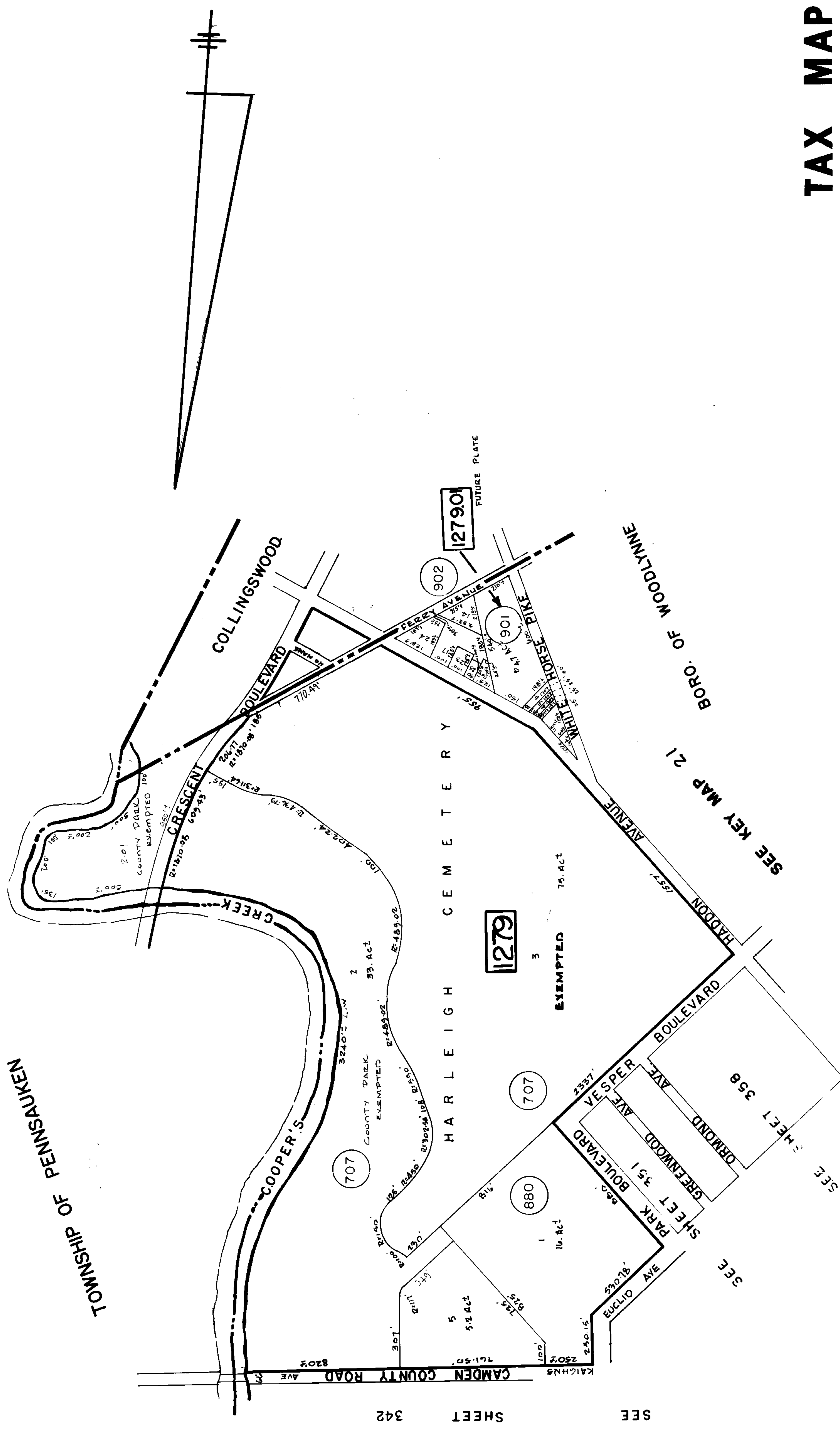
TAX MAP
CITY OF CAMDEN
 CAMDEN COUNTY NEW JERSEY

SCALE: 1" = 50' 1985
 KENNETH R. REMINGTON LIC. NO. 6634
 REMINGTON ENGINEERS, INC.
 6400 S. CRESCENT BLVD.
 PENNSAUKEN N.J.

NEW JERSEY DEPARTMENT OF THE TREASURY
 LOCAL PROPERTY TAXATION DIVISION
 CAMDEN COUNTY TAX MAP PURSUANT TO THE
 PROVISIONS OF CHAPTER 175, LAWS OF 1913, ETC.
 FOR THE DIRECTOR, DIVISION OF TAXATION

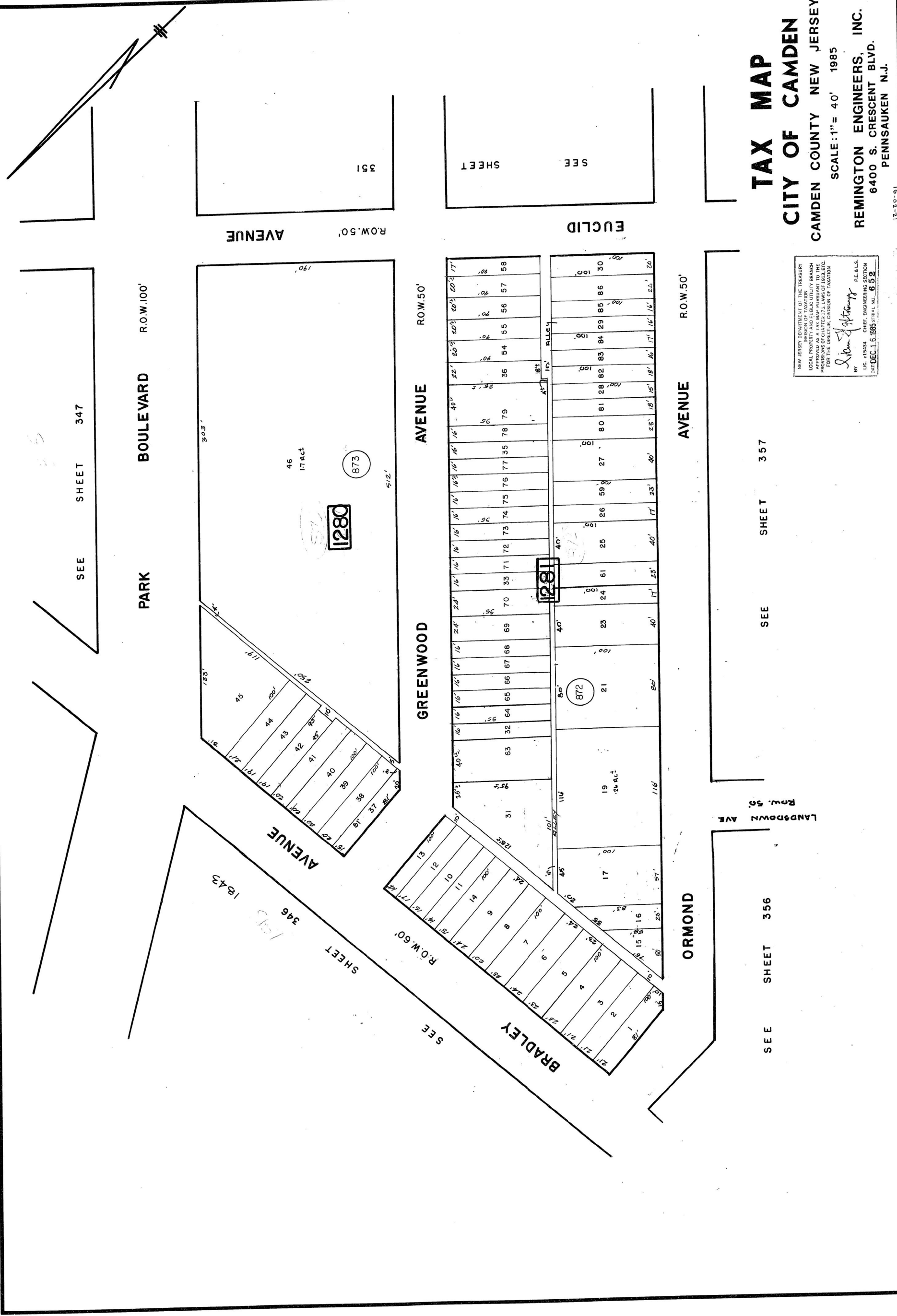
Kenneth R. Remington P.E. & S.
 U.S. ALIENA, CHIEF ENGINEERING SUPERVISOR
 DATE DEC. 16, 1985 SERIAL NO. 652

Sec 21



LOCAL OFFICE
 6400 S. CRESCENT BLVD.
 PENNSAUKEN, N.J. 08104
 DATE: 11.6.1985
 SHEET: 652

TAX MAP
CITY OF CAMDEN
 CAMDEN COUNTY NEW JERSEY
 SCALE: 1" = 300' 1985
REMINGTON ENGINEERS, INC.
 6400 S. CRESCENT BLVD.
 PENNSAUKEN N.J.



TAX MAP

CITY OF CAMDEN

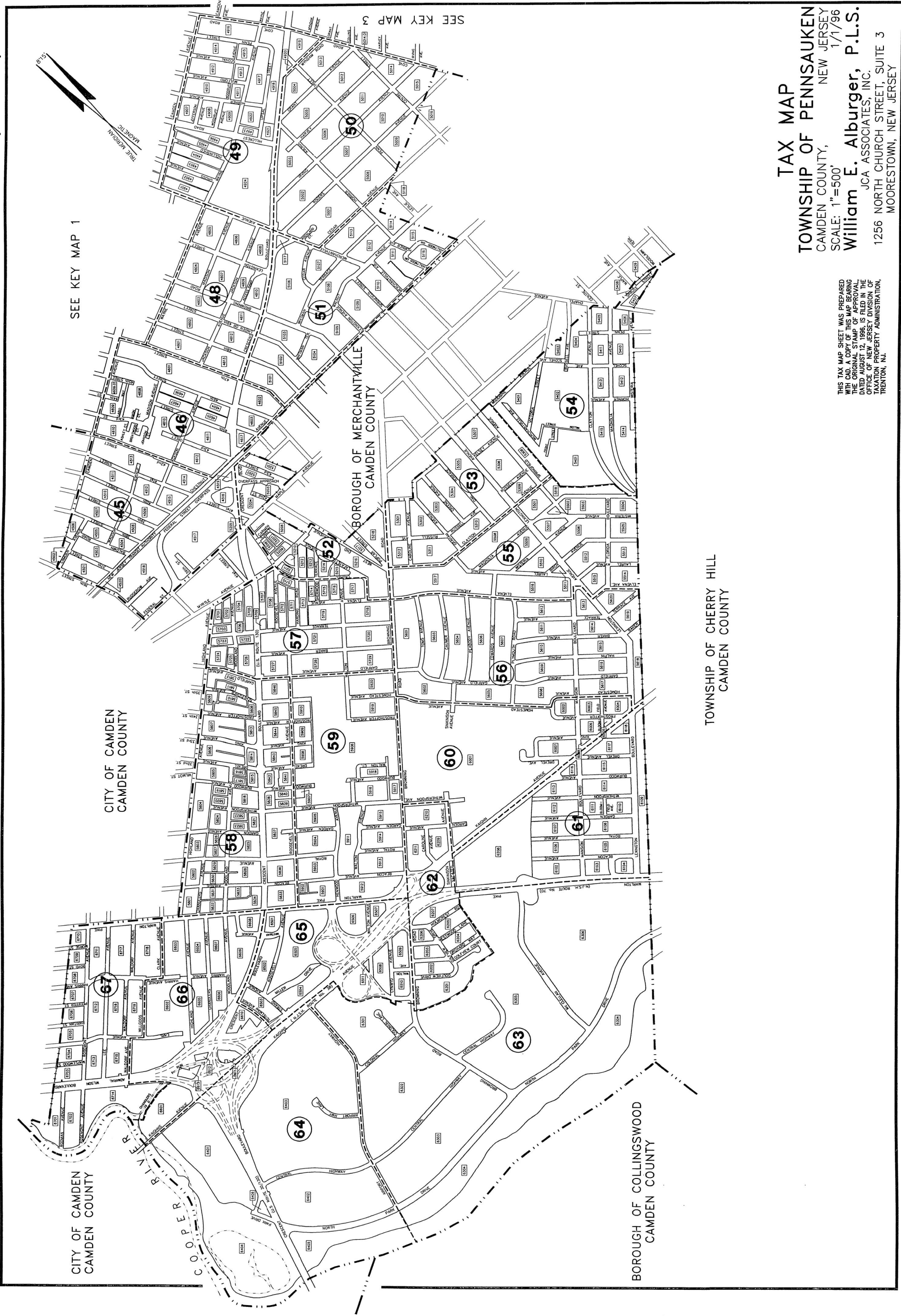
CAMDEN COUNTY NEW JERSEY

SCALE: 1" = 40' 1985

REMINGTON ENGINEERS, INC.
6400 S. CRESCENT BLVD.
PENNSAUKEN N.J.

NEW JERSEY DEPARTMENT OF THE TREASURY
DIVISION OF TAXATION
LOCAL PROPERTY TAX MAPS PREPARED BY BRANCH OFFICES
APPROVED AS A TAX MAP PURSUANT TO THE PROVISIONS OF CHAPTER 173, LAWS OF 1974, ETC.
FOR THE DIRECTOR, DIVISION OF TAXATION

BY *[Signature]* P.E.A.L.S.
LIC. #15434 CHIEF, ENGINEERING SECTION
DATE: DEC. 1, 1985 SERIAL NO. 652



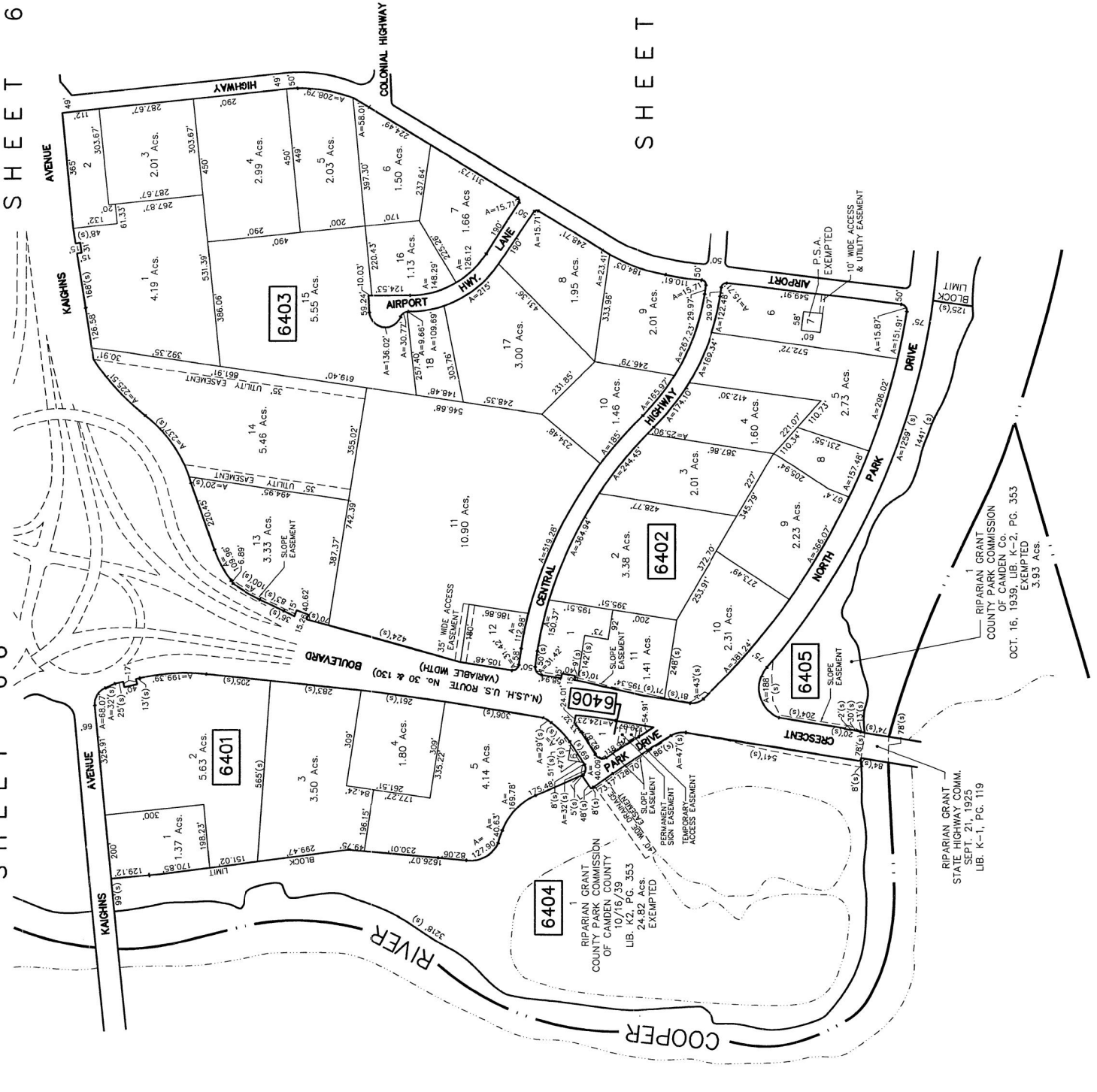
TAX MAP
TOWNSHIP OF PENNSAUKEN
 CAMDEN COUNTY,
 NEW JERSEY
 SCALE: 1"=500'
William E. Alburger, P.L.S.
 JCA ASSOCIATES, INC.
 1256 NORTH CHURCH STREET, SUITE 3
 MOORESTOWN, NEW JERSEY

THIS TAX MAP SHEET WAS PREPARED WITH CAD. A COPY OF THIS MAP BEARING THE ORIGINAL STAMP OF APPROVAL, DATED AUGUST 12, 1996, IS FILED IN THE OFFICE OF NEW JERSEY DIVISION OF TAXATION PROPERTY ADMINISTRATION, TRENTON, NJ.

REVISED BY JCA ASSOCIATES, INC. TO OCT. 1, 2001
 REVISED BY JCA ASSOCIATES, INC. TO OCT. 1, 2002



SHEET 66 SHEET 65



SHEET 63

CITY OF CAMDEN

BOROUGH OF COLLINGSWOOD

TAX MAP
TOWNSHIP OF PENNSAUKEN
 CAMDEN COUNTY, NEW JERSEY
 SCALE: 1"=200'
William E. Alburger, P.L.S.
 JCA ASSOCIATES, INC.
 1256 NORTH CHURCH STREET, SUITE 3
 MOORESTOWN, NEW JERSEY

THIS TAX MAP SHEET WAS PREPARED WITH CAD. A COPY OF THIS MAP BEARING THE ORIGINAL STAMP OF APPROVAL, DATED AUGUST 12, 1996, IS FILED IN THE OFFICE OF NEW JERSEY DIVISION OF TAXATION PROPERTY ADMINISTRATION, TRENTON, NJ.

1 RIPARIAN GRANT STATE HIGHWAY COMM. SEPT. 21, 1925 LIB. K-1, PG. 119
 1 RIPARIAN GRANT COUNTY PARK COMMISSION COUNTY OF CAMDEN, N.J. OCT. 16, 1939, LIB. K-2, PG. 353 EXEMPTED 3.93 ACES.

Appendix D

Crash Data and Collision Diagrams

**Summary of Crash Analysis, 2013-2016
Kaighns Avenue (CR 607) over Cooper River
City of Camden, Camden County, NJ**

Total number of crashes in analysis: **27**

Crash Type by Year					
<u>Crash Type</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>Total</u>
Same Direction, Rear-End	4	4	2	1	11
Same Direction, Sideswipe		1	1		2
Same Direction, Sideswipe w/Overturned Vehicle		1			1
Opposite Direction, Sideswipe			1	1	2
Struck Parked Vehicle			2		2
Fixed Object	1		3	1	5
Left Turn	1		3		4
TOTAL	6	6	12	3	<u>27</u>

Time of Day			
AM Midnight - Noon	Number of Crashes	PM Noon - Midnight	Number of Crashes
Midnight – 1:00		Noon – 1:00	3
1:00 – 2:00	1	1:00 – 2:00	2
2:00 – 3:00		2:00 – 3:00	
3:00 – 4:00	2	3:00 – 4:00	2
4:00 – 5:00		4:00 – 5:00	1
5:00 – 6:00	1	5:00 – 6:00	2
6:00 – 7:00	1	6:00 – 7:00	
7:00 – 8:00		7:00 – 8:00	
8:00 – 9:00	1	8:00 – 9:00	1
9:00 – 10:00		9:00 – 10:00	2
10:00 – 11:00	1	10:00 – 11:00	2
11:00 – Noon	4	11:00 - Midnight	1

Month of Year											
Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
1	5	7	1	1	3	2	2	2	1		2

Lighting Conditions	
Day	Night
16	11

Roadway Conditions		
Dry	Wet	Ice/Snow
19	8	

CITY OF CAMDEN



IH ENGINEERS, P.C.
103 COLLEGE ROAD EAST
PRINCETON, NJ 08540

JOHN W. KORUNOW JR
IH ENGINEERS, P.C.
N.J. PROFESSIONAL LICENSE NO. GE04034200

APPROVED: _____ DATE: _____

Revisions	NO.	DATE	BY

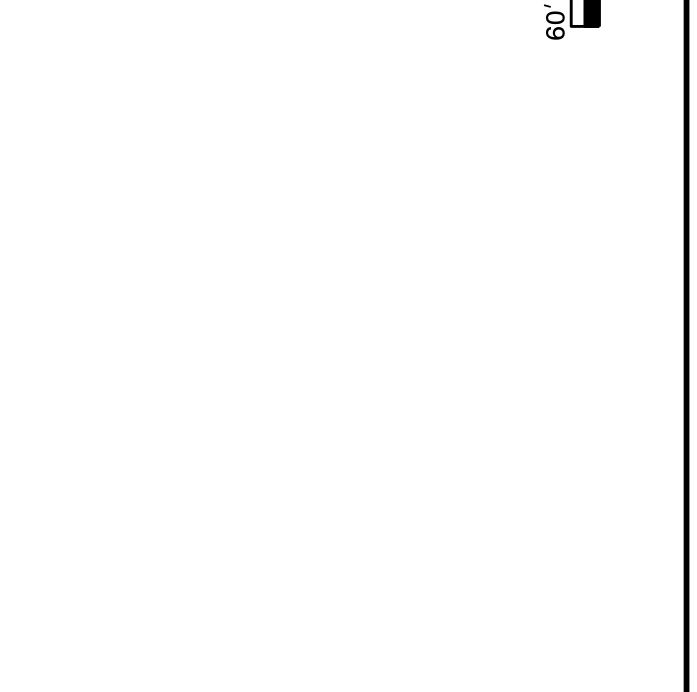
Designed By: _____
NSL
Checked By: _____
NSL
Approved By: _____
XX
Date: 2016

Scale: AS SHOWN
Sheet No. 1 of 2
Date: 2016

Camden County Department of Public Works
Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwold, New Jersey 08021

**CRASH DIAGRAMS FOR
KAIGHN AVENUE (CR 607)
OVER THE COOPER RIVER**
CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

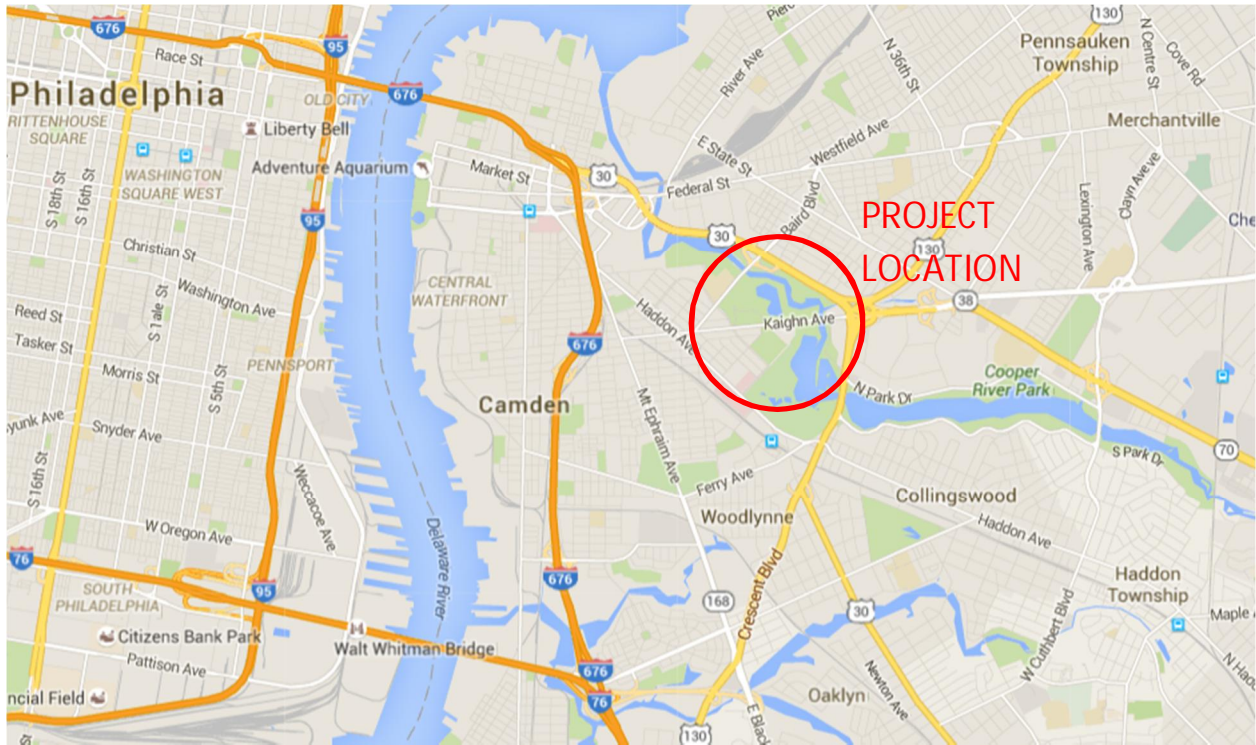
- LEGEND:**
- LIMIT OF MUNICIPALITY
 - SAME DIRECTION REAR END CRASH
 - HEAD ON CRASH
 - ↔ SAME DIRECTION SIDESWIPE CRASH
 - ↔ OPPOSITE DIRECTION SIDESWIPE CRASH
 - ▢ STRUCK PARKED VEHICLE
 - ▢ FIXED OBJECT CRASH
 - ↘ LEFT TURN CRASH
 - ↘ SAME DIRECTION SIDESWIPE WITH OVERTURNED VEHICLE



Y:\IV\RP\C\kaighn Avenue (CR 607) over Cooper River\10 CAD\Crash Diagram 1.dgn
28-JUN-2016 15:29
NL\mk
NJDOT_ful\IBI
IH Engineers, P.C.

Appendix E

Aerial Plan & Photographs



LOCAL CONCEPT DEVELOPMENT STUDY

Keighn Avenue (CR 607) over Cooper River
Bridge Replacement and
Flooding Improvements,
NJ State Structure # 043B006
(Camden County Structure No. 3B-6)
Camden County, New Jersey

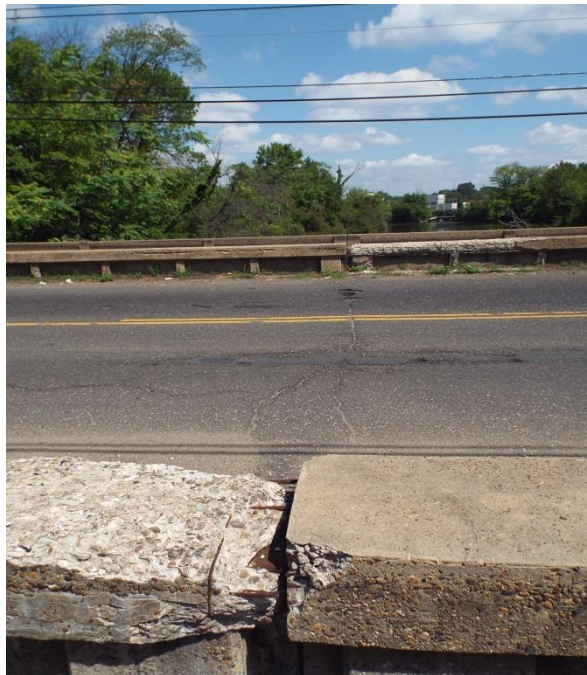


IH Engineers, P.C.

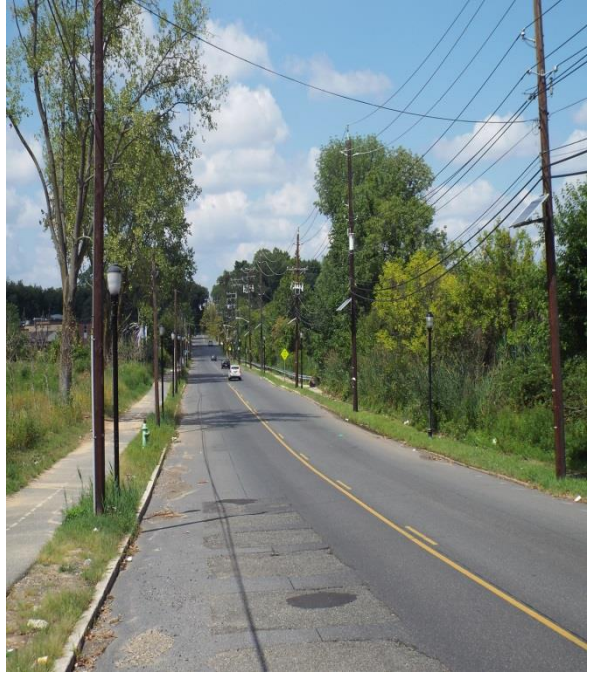
103 College Road East, 1st Floor
Princeton, NJ 08540

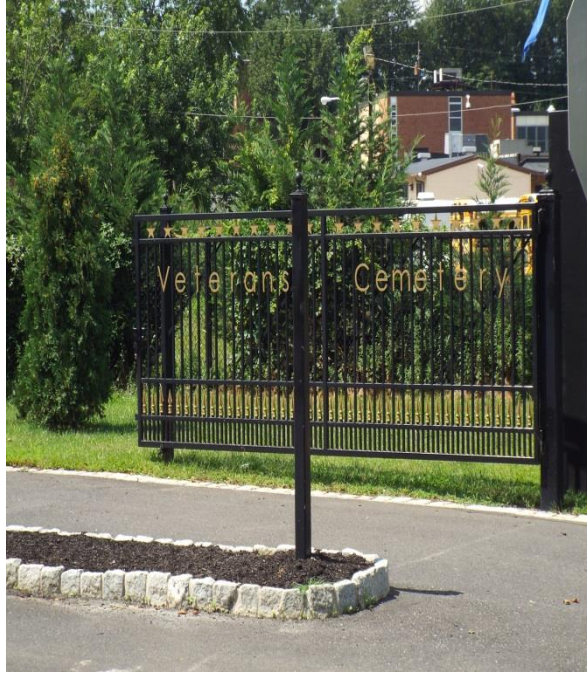


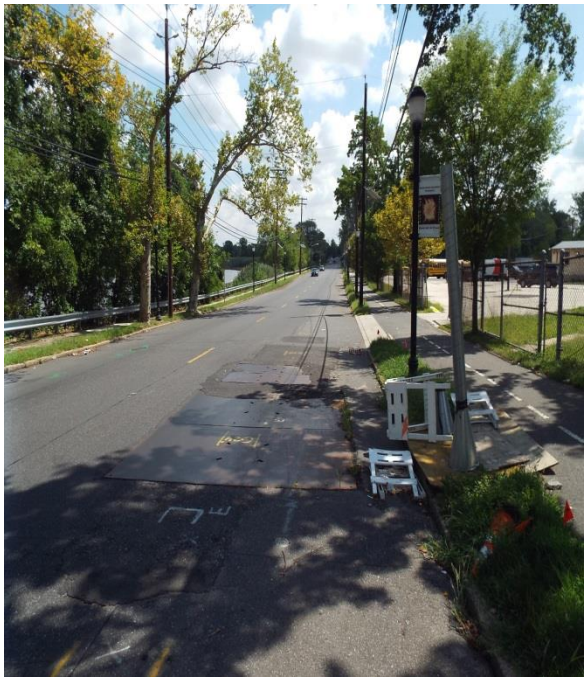


















Appendix F

Straight Line Diagrams

Mile Posts: 2.000 - 2.460

CAMDEN COUNTY 607 (East to West)



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	
Interstate Route	
US Route	
NJ Route	
County Road	
Interchange Number	
Grade Separated Interchange	
Traffic Signal	
Traffic Monitoring Sites	
Road Underpass	
Road Overpass	

Street Name	Kaighns Avenue
Jurisdiction	Camden City, Camden Co
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	40
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

End Camden County 607 MP=2.46

Date last inventoried: June 2011

SRI = 04000607

Appendix G

Environmental Screening and Constraint Map

ENVIRONMENTAL SCREENING

For

**LOCAL CONCEPT DEVELOPMENT STUDY:
CAMDEN COUNTY BRIDGE 3B-6
KAIGHN AVENUE (CR 607) OVER COOPER RIVER**

**Township of Pennsauken and City of Camden
Camden County, New Jersey**

May 10, 2017

PREPARED ON BEHALF OF:

Camden County Division of Engineering
Charles J. DePalma Complex
2311 Egg Harbor Rd., Building 18
Lindenwold, NJ 08021

PREPARED FOR:

IH Engineers, PC
103 College Road East, First Floor
Princeton, NJ 08540
Attn: John W. Korunow Jr., PE, CME, *Transportation Department & Operations
Manager*

PREPARED BY:

Amy S. Greene Environmental Consultants, Inc.
4 Walter E. Foran Boulevard, Suite 209
Flemington, New Jersey 08822
ASGECI Project #3947

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1.0 INTRODUCTION

This Environmental Screening (ES) is presented as part of a Local Concept Development (LCD) Study for the Kaighn Avenue (CR 607) Bridge (State Structure #043B006; Camden County Bridge #3B-6) over the Cooper River, Township of Pennsauken, and City of Camden, Camden County, NJ. The Environmental Screening study was performed by Amy S. Greene Environmental Consultants, Inc. (ASGECI) in the study area of Camden County Bridge #3B-6, over the Cooper River, to assist in the development of a bridge reconstruction plan. This Environmental Screening Report (ESR) provides a preliminary indication of the extent of environmentally sensitive resources located within the study area. The ESR is based upon a review of existing published information and the performance of qualitative field investigations.

1. The project study area limits (study area) evaluated for this report includes all property within five hundred feet of the existing right-of-way of Kaighn Avenue between The Pub restaurant, located at 7600 Kaighn Avenue and a residential property located at 1541 Kaighn Avenue (Appendix A - Figure 1).

Existing mapping, data, and records were reviewed on the Federal, State, County, and Municipal levels. Specific sourcing information is provided within each Section provided herein. ASGECI conducted a wetland delineation on March 14, 2016 and a field reconnaissance of the project study area on and September 7, 2016 to further evaluate environmentally sensitive resources. Detailed discussions of the areas that present possible areas of environmental concern are discussed in this report, and representative color photographs, taken during the field reconnaissance, are contained under Appendix B.

2.0 IDENTIFICATION OF ENVIRONMENTAL RESOURCES

The methodologies utilized in the preparation of this ESR included obtaining and reviewing existing data, performing visual field investigations of the study area, and evaluating all materials collected. A discussion of the technical information used to identify each resource within the study area is described in this section of the ESR. Photographs of the study area are provided in Appendix B.

2.1 LAND USE

The study area consists of all properties surrounding Camden County Bridge 3B-6, beginning approximately 2,175 feet to the west of Kaighn Avenue Bridge, extending approximately 150 feet (ft.) to the north and south of Kaighn Avenue, also known as Dr. Charles Brimm Boulevard, in the City of Camden, Camden County, NJ. Farnham Park is located to the north of Kaighn Avenue, and is subsequently bordered by Baird Boulevard to the north, Dr. Charles Brimm Boulevard to the south, Park Boulevard to the west, and Cooper River to the east. MetEast High School lies within the western limits of the study area, to the south side of Kaighn Avenue; and a residential area lies immediately to the west of MetEast High School, at the southwestern corner of the study area. The eastern portion of the study area can be described as moderately developed. The northeastern and southeastern portions of the study area contain New Jersey Department of Environmental Protection (NJDEP) Freshwater Wetlands and their respective 50-foot wetland transition areas. This portion of Cooper River is tidally influenced and according to NJDEP Bureau of Tidelands mapping, areas now or formerly flowed by the tide in the vicinity of the proposed project are subject to Tidelands Claims. This portion of Cooper River contains 100-year Federal Emergency Management Agency (FEMA) Floodplain areas by the NJDEP. The northeastern and southeastern corners of the study area are occupied by commercial properties, including The Pub, a sneaker outlet, and a thrift shop.

2.2 SURFACE WATER RESOURCES

Surface water resources include all navigable water ways, naturally occurring waterways containing a bed and bank, man-made ditches that drain more than 50 acres of area, floodplains associated with these waterways, and a zone of riparian vegetation located along the banks of these waterways.

2.2.1 Water Quality Classification

The watershed in which the study area is located was identified, and the water quality classifications of major surface water bodies within the study area were reviewed. Sources used to determine site drainage included USGS topographic maps Appendix A, Figure 2, Soil Survey Geographic (SSURGO) Camden County Soils maps Appendix A, Figure 3, and field observations.

The study area is located within the Cooper River Watershed, located in the Lower Delaware Water Region, in Watershed Management Area 18 (WMA 18). The Cooper River Watershed has been classified as a Freshwater 2 - Non-trout (FW2-NT) waterbody according to the NJDEP

Surface Water Quality Standards (SWQS 2011; N.J.A.C. 7:9B), and encompasses approximately 37 square miles within the WMA 18 (NJDEP 2004). According to the NJDEP SWQS, acceptable uses for FW-2 NT waters include:

“...maintenance, migration and propagation of the natural and established biota; primary contact recreation; industrial and agricultural water supply; public potable water supply after conventional filtration treatment (a series of processes including filtration, coagulation, and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and other reasonable uses.”

2.2.2 Regulated Waters

The NJDEP *Flood Hazard Area Control Act (FHACA) Rules* (NJAC 7:13 *et seq.*) indicate that “regulated waters” in NJ include “any segment of water that has a drainage area of less than 50 acres, provided [that the water has a discernable channel]” as well as all streams and drainage ways with an upstream drainage basin area of more than 50 acres. The FHACA regulates certain activities in the Flood Hazard Areas and Riparian Zones of regulated waters.

Within the study area, Kaighn Avenue crosses the Cooper River via Camden County Bridge 3B-6. The Cooper River is a tidal waterway (Appendix A, Figure 4) and is a regulated water under the FHACA regulations. Since the Cooper River is tidally influenced in this area, the River is also regulated under the NJ Waterfront Development Law. The Waterfront Development Law is implemented through the application of the NJDEP Coastal Zone Management rules (N.J.A.C. 7:7) . The Coastal Zone Management rules define the extent of jurisdiction under the Waterfront Development Law in this area as “all tidal waterways and the lands lying thereunder, up to and including the mean high waterline and adjacent upland areas within 100 feet of the mean high water line. For properties within 100 feet of the mean high water line that extend beyond 100 feet of the mean high water line, the regulated waterfront shall extend inland up to 500 feet or to the first paved public road.” Therefore, any proposed work in the study area will be regulated under the waterfront development law. Since a waterfront development permit will be required to replace or reconstruct the Kaighn Avenue Bridge, the standards of the Flood Hazard Area Control Act rules will be applied as a part of the waterfront development permit review (See 7:7-9.26 Flood Hazard Areas and 7:7-9.26 Riparian Zones).

In addition the Cooper River is also considered regulated water under Section 10 of the Rivers and Harbors Act and Section 404 of the Federal Clean Water Act. Any activities below the mean high water line will require a section 10 permit. If any fill is proposed in the River or adjacent wetlands within 100 feet of mean high water, a Section 404 Permit will also be required from the US Army Corp of Engineers (USACE). The US Coast Guard approves the location and plans of bridges and causeways and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation. Any authority planning to construct or modify a bridge or causeway across a navigable waterway of the U.S. must apply for a Coast Guard bridge permit in accordance with 33 CFR 115.50. The site lies within the fifth US Coast Guard District (Appendix A, Figure 5). The type of permits and extent of jurisdiction will depend on the design of the bridge and its location.

2.2.3 Riparian Zones

Riparian Zones can extend 50 ft, 150 ft, or 300 ft from the top of bank of regulated waters. It is anticipated that the riparian zone associated with the Cooper River within the study area will be 50 ft. This determination is based on the fact that the Cooper River is not a Category 1 (C1) waterway nor is the site located upstream of a C1 waterway located within the same HUC 14; the Cooper River is not a trout production waterway nor is it located upstream of a trout production waterway; Cooper River is not a trout maintenance waterway nor is it located within one mile upstream of a trout maintenance waterway; and there is no documented habitat for threatened or endangered species on-site or within one mile upstream of documented habitat for threatened or endangered species critically dependent on the waterway for survival.

The anticipated 50-foot riparian zone limits are illustrated on the Environmental Constraints Map provided in Appendix A (Figure 6).

2.2.4 Floodplains and Flood Hazard Areas

Flood hazard area mapping and available FEMA floodplain maps were analyzed to determine the approximate extent of 100-year floodplains and flood hazard areas within the project area. NJDEP regulates activities in flood hazard areas under the FHACA rules at N.J.A.C. 7:13.

The majority of the study area lies within the FEMA 100-year floodplain (Appendix A, Figure 7). The waters of the Cooper River to the north, within, and immediately to the south of Kaighn Avenue Bridge are located within a tidal floodplain. The lake waters in Farnham Park (adjacent and to the west of Cooper River) and Cooper River Lake, to the north and south of the study area, respectively, are located within a fluvial floodplain. Potential impacts to the Flood Hazard Area of Cooper River must be developed and evaluated during subsequent project design phases. Activities within the flood hazard area may require a FHACA permit from the NJDEP.

2.3 WETLANDS AND WETLAND TRANSITION AREAS

A review of existing mapping sources and a wetland delineation were conducted to determine the approximate extent of wetlands and open waters within the project area. Mapping sources reviewed included Camden County Soil Survey, US Fish and Wildlife Service (USFWS) National Wetlands Inventory Maps, and the NJDEP Freshwater Wetland & Mapped Coastal Wetlands GIS coverages.

There are no NJDEP Mapped Coastal Wetlands pursuant to the NJ Coastal Wetlands Act of 1970 present within the study area limits (Appendix A, Figure 8); however, wetlands as mapped by the NJDEP Office of Information Resources Management, Bureau of Geographic Information and Analysis, are located within the eastern half of the study area on the northern and southern sides of the Bridge. These wetlands are classified as palustrine, forested, broad-leaved deciduous, saturated (PFO1B); and palustrine, forested, broad-leaved deciduous, seasonally flooded/palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded (PFO1C/PSS1C). The wetland areas were identified by ASGECI by utilizing the methodology presented in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (Federal Interagency

Committee for Wetland Delineation 1989) in accordance with the NJ Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A-1 et seq.) and the methodologies outlined in the USACE Wetland Delineation Manual (1987) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (2010) as required by the USACE. Wetlands were delineated in the field and the locations of the upland/wetland boundaries were identified. Wetlands identified in the study area during the field investigation are subject to confirmation by both the NJDEP and USACE.

According to the SSURGO Soils Mapping for Camden County, no hydric soil types have been mapped within the study area. The areas surrounding the Kaighn Avenue Bridge are mapped as Urban Land a non-hydric soil (Appendix A, Figure 3).

The wetland areas identified during the field investigation will be regulated by NJDEP under the provisions of the NJ Freshwater Wetland Protection Act Rules (N.J.A.C. 7:7A). The approximate wetland boundary and its anticipated transition area are shown on the Environmental Constraints Map included in Appendix A.

2.3.1 Wetland Community Description

Prior to the field delineation, the potential for the presence of wetlands within the project area was determined from a review of existing published information including the US Fish and Wildlife Service National Wetlands Inventory Maps, and the NJDEP Freshwater Wetland Maps.

Wetlands were then identified and delineated on the site during the field investigation: Wetland E (along Kaighn Avenue to the north) and Wetlands F and G (to the south of Kaighn Avenue).

Wetland E (Flags E1 through E26) was an emergent herbaceous tidal wetland, which ran adjacent and to the north of Kaighn Avenue.

Wetlands F and G were forested wetland areas to the south of Kaighn Avenue.

Indications of surface hydrology and hydric soils were observed in the wetlands identified within the study area. The soils were characterized by low chroma matrix colors and other hydric soil indicators. Dominant vegetation observed within Wetland E was dominated by pickerelweed (*Pontederia cordata*), cattail (*Typha latifolia*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), marsh-mallow (*Althaea officinalis*), and common reed (*Phragmites australis*). Dominant vegetation in Wetlands F and G was dominated by common reed, goldenrod (*Solidago* sp.), New York ironweed (*Vernonia noveboracensis*), Japanese honeysuckle (*Lonicera japonica*), and green ash (*Fraxinus pennsylvanica*).

State open waters (Cooper River) were flagged to the north and south of Kaighn Avenue Bridge with alpha-numeric designations OWA-1 through OWA-5 (south), OWB-1 through OWB-4 (north), OWC-1 through OWC-4 (north), and OWD-1 through OWD-5 (south).

Photographs of the documented areas are included in Appendix B and the locations of delineated wetlands and water are indicated on a plan included in Appendix F.

2.3.2 Upland Community Descriptions

Upland areas within the study area include primary landscaped areas of residences, businesses and parking lots, MetEast High School (structures, ball fields, and parking lot), Harleigh Cemetery driveway, as well as forested land contained within Farnham Park. Non-hydric/disturbed soils were identified throughout the upland portions of the site. These soils were characterized by higher chroma matrix colors and lack of other hydric soil indicators. Vegetation observed within study area uplands is listed in the following table:

UPLAND VEGETATION OBSERVED IN THE STUDY AREA

Common Name	Scientific Name
Ailanthus	<i>Ailanthus altissima</i>
American elm	<i>Ulmus americana</i>
American pokeweed	<i>Phytolacca americana</i>
Bittersweet (vine)	<i>Celastrus scandens</i>
Blackberry	<i>Rubus</i> sp.
Black cherry	<i>Prunus serotina</i>
Blackjack oak	<i>Quercus marilandica</i>
Black locust	<i>Robinia pseudoacacia</i>
Black oak	<i>Quercus velutina</i>
Black willow	<i>Salix nigra</i>
Box elder	<i>Acer negundo</i>
Bullthistle	<i>Cirsium vulgare</i>
Chicory	<i>Cichorium intybu</i>
Clearweed	<i>Pilea pumila</i>
Common mullen	<i>Verbascum thapsus</i>
Common reed	<i>Phragmites australis</i>
Crab apple	<i>Malus</i> sp.
English ivy	<i>Hedera helix</i>
Evening primrose	<i>Oenothera</i> sp.
Foxtail grass	<i>Alopecurus</i> sp.
Goldenrod species	<i>Solidago</i> sp.
Gray goldenrod	<i>Solidago nemoralis</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Honey locust	<i>Gleditsia triacanthos</i>
Tatarian honeysuckle	<i>Lonicera tatarica</i>
Hops	<i>Humulus lupulus</i>
Indigobush	<i>Amorpha fruticosa</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Japanese knotweed	<i>Fallopia japonica</i>
Lambsquarters	<i>Chenopodium album</i>
Mile-a-minute	<i>Persicaria perfoliata</i>
Mugwort	<i>Artemisia vulgaris</i>

Common Name (Continued)	Scientific Name (Continued)
Mullberry	<i>Morus celtidifolia</i>
Multiflora rose	<i>Rosa multiflora</i>
Norway maple	<i>Acer platanoides</i>
Northern hackberry	<i>Celtis laevigata</i>
NY ironweed	<i>Vernonia noveboracensis</i>
Panic grass	<i>Panicum</i> sp.
Pin oak	<i>Quercus palustris</i>
Poison ivy	<i>Toxicodendron radicans</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Queen Anne's lace	<i>Daucus carota</i>
Ragweed	<i>Ambrosia</i> sp.
Red maple	<i>Acer rubrum</i>
Slippery elm	<i>Ulmus rubra</i>
Sumac sp.	<i>Rhus</i> sp.
Sweet gum	<i>Liquidambar styraciflua</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
White oak	<i>Quercus alba</i>
Wild mustard	<i>Sinapis arvensis</i>

2.3.3 Resource Value Classification and Transition Areas

Wetlands under the regulatory authority of the *NJ Freshwater Wetland Protection Act Rules* at N.J.A.C. 7:7A are assigned Resource Value Classifications of either Ordinary, Intermediate, or Exceptional and are subject to associated transition areas based upon these classifications. Exceptional Resource Value wetlands are assigned the largest standard transition area of 150 ft. Wetlands are assigned an Exceptional Resource Value classification if they are habitat for endangered or threatened species, or drain to trout-production waters. Ordinary Resource Value wetlands do not require transition areas and are characterized by features such as ditches, swales, detention/retention basins, and certain isolated wetlands. All other wetlands are classified as Intermediate Resource Value, which are subject to standard 50-ft. transition areas.

It is anticipated that a portion of the wetland identified within the study area will be classified as Exceptional Resource Value; and will therefore be subject to 150 ft. transition areas where the study area and Rank 4 Habitat intersect (north of MetEast High School Athletic field, across Kaighn Avenue). Please refer to the Environmental Constraints Map in Appendix A (Figure 5) for a graphical reference of anticipated transition area limits.

2.3.4 EPA Priority Wetlands

Certain wetlands in the state of NJ are included on the U.S. Environmental Protection Agency's (EPA) Priority Wetland list. The EPA Priority Wetland list recognizes those areas identified by various Federal, state and private contributors which are considered to be the most important and vulnerable wetlands in the State. A Priority Wetland designation limits the availability of certain

NJDEP Freshwater Wetlands General Permits. The wetlands identified within the study area are not mapped by the State of New Jersey as EPA Priority Wetland.

2.4 SOLE SOURCE AQUIFERS

The project area is located within an area identified by New Jersey Geological Survey (digital Sole Source Aquifer Coverage, 1998) as a Coastal Plain Sole Source Aquifer Region; however, no impact to any underlying aquifer is anticipated due to the nature of the proposed project.

2.5 THREATENED AND ENDANGERED SPECIES

The potential for the presence of threatened and endangered species for the study area was assessed by obtaining records from the New Jersey Natural Heritage Program (NHP) and United States Fish and Wildlife Service (USFWS). The NHP of the Office of Natural Lands Management maintains a database of natural communities and documented sightings of threatened and endangered species. Their data also includes information from the Landscape Project. The NHP, in a letter dated February 8, 2016 (Appendix C) lists the NJ State endangered bald eagle (*Haliaeetus leucocephalus*), as foraging and wintering within the study area and within one mile. A review of the NJDEP Landscape Project Mapping (Landscape Project via NJ-Geo-Web) indicates that Rank 4 habitat for the bald eagle is located along Cooper River and the adjoining water bodies to the immediate north and south of Kaighn Avenue Bridge (Appendix A, Figure 9).

The NHP lists the following additional wildlife species and wildlife habitats within one mile of the study area:

- Great blue heron (*Ardea herodias*) foraging – Special Concern

In addition to the species listed above, an Information, Planning and Conservation (IPaC) Trust Resources Report was generated on March 30, 2017 and reviewed to identify the potential presence of federally listed threatened or endangered species within the project area. According to the IPaC report, no federally threatened or endangered species, critical habitats, or National Wildlife Refuges were identified within the project area; however, twenty four (24) migratory bird species, which are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, could potentially be affected by activities in this location. For a complete list of migratory birds identified refer to Appendix C - Correspondence.

The potential to impact the bald eagle habitat will need to be evaluated further during the permitting phase of the project. Project alternative alignments should also evaluate impacts to the foraging habitat of this species. According to the NJDEP, bald eagle habitat contains forested areas associated with bodies of water where they have access to their diet of fish, small mammals, waterfowl, and dead animal matter (NJDEP 2005).

The Wetland Transition Area to the south of Kaighn Avenue is bordered by Rank 3 Habitat, which encompasses much of the Cooper River Park Historical District. Rank 3 has been assigned to this habitat due to bald eagle wintering and great blue heron foraging activities.

No rare plant species are documented in or immediately adjacent to the study area (Appendix A, Figure 10).

2.6 FISHERIES RESOURCES

2.6.1 Shellfisheries

The Shellfish Growing Water Classification Charts, published annually by the NJDEP Bureau of Marine Water Monitoring, indicate that the waters of Cooper River are not regulated shellfish growing waters.

2.6.2 Anadromous Fish

According to the NJDEP's *Locations of Anadromous American Shad and River Herring During Their Spawning Period in New Jersey's Freshwaters Including Known Migratory Impediments and Fish Ladders* (2005), Cooper River Park Lake, which is located to the east-southeast of Kaighn Avenue Bridge, is inhabited by anadromous fish (e.g., American shad and river herring) during clupeid spawning runs in the spring.

2.6.3 Essential Fish Habitat (EFH)

According to the New Jersey Department of Transportation (NJDOT; 2008) and the National Oceanic and Atmospheric Administration (NOAA) Habitat Conservation Division's National Marine Fisheries Service, the Cooper River does not contain federally managed Essential Fish Habitat (EFH; Appendix C).

2.7 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

The area within 500 feet of the Kaighn Avenue Bridge study area is a mixture of commercial and residential uses. There are also two school houses, including Cooper J. Hatch Family School, located within 500 feet to the southwest of the study area, and MetEast High School, located within the study area, on the southern side of Kaighn Avenue. Commercial uses include a thrift shop, a sneaker outlet, and a pub, all located within 500 feet to the east of the study area. The closest residential area is within the southwestern corner of the study area, to the west of the MetEast High School Athletic Field. More concentrated residential areas exist to the southwest, and to the west of the study area, encompassing large areas to the north and south of Kaighn Avenue. Retail uses continue to the east of the study area, along East Crescent Boulevard in the Borough of Collingswood and Admiral Wilson Boulevard in the Township of Pennsauken. The nearest residential uses located to the east of the bridge in Pennsauken, are located approximately 1000 feet to the northwest off of Woodland Avenue.

Currently, the Kaighn Avenue Bridge is a moderately used transportation link between the City of Camden and the Township of Pennsauken. Any alternatives that would reduce the link between these two cities should consider the socioeconomic impact of that alternative. As project

alternatives are developed, socioeconomic impacts to the land uses in the area should be considered.

Environmental Justice

To determine the relevancy of any environmental justice issues, demographic and select economic data was collected from the USEPA EJSCREEN (v. 2016) website at www.epa.gov/ejscreen (Appendix D). The EJSCREEN analysis was conducted for the Kaighn Avenue right of way plus a 0.7 mile buffer around the right of way. Demographic analysis of this community indicates that there is a large minority (100%) and low income (56%) population living in close proximity to the proposed project area. These percentages are equivalent to the 100th and 90th percentiles, respectively, when compared to the rest of the State of New Jersey.

EJSCREEN combines this demographic information with 11 environmental indicators to determine whether minority and/or low income populations are being subjected to higher than average exposure to environmental risks. According to EJSCREEN, the community living in close proximity to the proposed project is in the 84th percentile or higher for environmental indicators when compared to the rest of the State of New Jersey. Moving forward, heightened sensitivity to environmental justice issues is warranted, and this information should be considered and further evaluated as project alternatives are developed.

2.8 HAZARDOUS WASTE INVESTIGATION

A preliminary study to assess the potential for the presence of hazardous waste was performed for the study area. This included a search of existing records and a limited site reconnaissance. It should be recognized that the hazardous waste investigation was not performed in accordance with ASTM standards E1527 and E1528 for Phase I Environmental Site Assessments, which is beyond the scope of this study. This study does not constitute a Hazardous Waste Screening or Preliminary Assessment in accordance with the NJDOT Procedures Manual. These studies should be performed in subsequent project development phases.

2.8.1 Site Reconnaissance & Mapping Review

A site reconnaissance and review of the NJDEP Known Contaminated Sites mapping was conducted in March of 2016 and January 2017 to identify the presence of any potential contaminated sites within the study area. ASGECI obtained nearby known contaminated site information from the NJDEP Known Contaminated Site List for the NJDEP Site Remediation Program (May 2014) and the NJDEP Bureau of GIS (NJ-GeoWeb 2016). According to the NJDEP *Ground Water Quality Standards* (N.J.A.C. 7:9C), a Classification Exception Area (CEA) is an area within which one or more constituent standards and designated uses are suspended in accordance with N.J.A.C. 7:9C-1.6. No contaminated sites were identified within the study area limits; however one CEA, approximately 3.34 acres in size, was identified within 500 ft. of the study area. The CEA is for a Former Shell Service Station (PI# 129494) and is located approximately 350 ft. to the north of the study area and encompasses the entirety of Block 6702, Lot 3. A significantly smaller CEA (0.18 acres) is situated within the aforementioned CEA and is also associated with the Former Shell Service Station on Block

6702, Lot 3; however, it is located 850 ft. to the north of the study area, and extends northeast under the adjacent Right of Way (ROW) of Admiral Wilson Boulevard. Specific contaminants associated with the larger CEA were not listed by the NJDEP Known Contaminated Sites List; however, volatile organics (VOs; e.g., ethylbenzene and xylenes [total]) were listed for the smaller CEA. The locations of the CEAs are depicted on the Known Contaminated Sites Map, included in Appendix A (Figure 11).

Additionally, according to NJ-GeoWeb, the majority of the study area rests on Historic Fill (Appendix A - Figure 12).

2.9 SECTION 4(F) LAND (RECREATIONAL)

Any lands within the study area that may be categorized as recreational lands or wildlife refuges may be subject to analysis under Section 4(f) of the US Department of Transportation Act. The NJDEP State-owned Open Space and Recreation Areas in NJ GIS coverage (NJDEP Green Acres Program, December 2008), and the NJDEP Green Acres Program Recreational Open Space Inventory (ROSI) were reviewed.

There are three nearby Green Acres (GA) Parcels within the study area limits: Farnham Park, the High School Athletic Field, and Cooper River Park, which is also identified as County Open Space (Appendix A - Figure 13). Farnham Park encompasses most of the land in the study area to the north of the bridge, ending at Copper River; the High School Athletic Field encompasses a small amount of land south of the bridge, to the west; and the Cooper River Park encompasses a small amount of land on the southern side of the bridge, to the east of Cooper River. Any activities conducted on green acres encumbered lands will be considered a diversion and will need to be compensated for. Approval of the uses of these lands must be obtained from NJDEP Green Acres Program and the NJ State House Commission. In addition, certain uses of these properties may require Federal Section 4(f) review due to federal funding of this project.

2.10 FORESTED AREAS

Under the No Net Loss Reforestation Act, P.L. 2001 Chapter 10 (amending P.L. 1993, c. 106[C.13:1L-14.2]), projects conducted by State entities that deforest one-half acre or more of land will require a reforestation plan. The study area is moderately developed along right of way; however, there are forested areas to the north and south of the bridge, forming a forested riparian corridor along Cooper River. Any proposed expansion or realignment of the bridge may result in the loss of some trees, but it is unlikely that project alternatives will result in deforestation of one-half acre or more (Appendix A - Figure 14).

2.11 AIR/NOISE SENSITIVE RECEPTORS

The NJDEP Land Use GIS coverage and the site investigations performed on March 14th September 7th, 2016 confirmed the presence of sensitive receptors within the study area. These receptors include a residential area, MetEast High School, and Jerrothia Riggs Adult Education Center, located in the western portion of the study area. As project development progresses, a

detailed analysis of air/noise sensitive receptors and potential project impacts to such receptors will be performed.

3.0 CULTURAL RESOURCES

Cultural resources information, including details on archaeological resources and historic architecture, was provided by Richard Grubb & Associates (RGA) of Cranbury, NJ and IH Engineering of Princeton, NJ.

3.1 ARCHAEOLOGICAL RESOURCES SUMMARY

According to the RGA Area of Potential Effects Report (February 14, 2017), The Area of Potential Effects for Architectural History (APE) consists only of the limits of ground disturbance”.

3.2 HISTORIC ARCHITECTURE SUMMARY

The following is an excerpt from the RGA Area of Potential Effects Report (February 14, 2017):

“The Kaighns Avenue Bridge over the Cooper River is included in the 1994 New Jersey Historic Bridge Survey (A.G. Lichtenstein & Associates, Inc. 1994). The survey determined that the bridge was a representative example of its type but not technologically significant. It was recommended ineligible for listing on the National Register of Historic Places (NRHP) in 1995 the SHPO concurred.

One previously identified resource listed in or eligible for the NRHP is located in the APE...:

- *Cooper River Park Historic District (SHPO Opinion 2/16/2000; Previous SHPO Opinion 2/28/1994; NR 7/19/2016). The northernmost boundary of this expansive district, which is located within four municipalities of Camden County, is situated along the southern median of Kaighn Avenue. The subject bridge, however, is not located within the district and therefore is not considered a contributing resource. A set of stone steps original to the park’s design and contributing resources to the Cooper River Park Historic District are located in proximity to the proposed bridge replacement, however they will not be impacted by the proposed undertaking.*

The APE was delineated based on any significant direct or visual effects that the proposed undertaking may have on historic architectural resources. A project reconnaissance was completed in April 2016 to delineate the APE... The boundaries of the APE encompass all of the project area, which includes portions of Kaighns Avenue from Admiral Wilson Boulevard (US Route 30) west to Glenn Drive, a small paved path that provides access to Farnham Park, located to the north of the project area, as well as portions of the Cooper River Park located to

the south of the project area... The eastern boundary of the APE adheres to tax parcel boundaries and includes the entire properties located adjacent to the project area. The western edge has been pared down from tax parcel boundaries due to the tree line along the Cooper River, which provides a visual buffer from project effects. East of the bridge, the APE extends onto the boundaries of the roadway only, where only milling and repaving are anticipated.

There is one historic architectural resource located within the APE that is recommended for intensive-level surveying:

- *The Pub (7600 Kaighns Avenue) (Block 08110, Lot 1): a circa 1962 restaurant.”*

Refer to the Area of Potential Effects Report (RGA 2017) in Appendix E for overview photographs and photo plates.

4.0 PERMITS AND APPROVALS

This section identifies potential environmental permits and approvals that may be required for proposed improvements within the study area. Due to federal funding, this project is subject to review under the National Environmental Policy Act (NEPA). Due to the limited amount of impact to the environment and surrounding community, it is anticipated that this project will qualify as a Categorical Exclusion. During the preliminary engineering phase of this project, Categorical Exclusion Documentation (CED) will be compiled and submitted to the Federal Highway Administration for review. Included in this documentation will be information regarding Section 106 review of cultural resources that are potentially eligible for listing on the National List of Historic Places. These sites and/or structures along with any public open space that may be impacted by the project will also be subject to Section 4(f), which will be conducted concurrently with the development of the CED.

The NJDEP regulates activities in freshwater wetlands (including unmapped coastal wetlands), State open waters and wetland transition areas under the *NJ Freshwater Wetlands Protection Act* (NJFWPA). Additionally, the U.S. Army Corps of Engineers (USACE) regulates activities in Waters of the U.S., including wetlands located within 1,000 ft. of tidal waters, under Section 404 of the Federal *Clean Water Act* and Section 10 of the *Rivers and Harbors Act*.

Kaighn Avenue (CR 607) crosses the Cooper River, which is tidally influenced; therefore, certain activities associated with the proposed project may be regulated under the NJDEP Coastal Zone Management (CZM) Rules (N.J.A.C. 7:7). Three different legislative acts are administered under the CZM rules –the Coastal Area Facilities Review Act (CAFRA), the Wetlands Act of 1970, and the Waterfront Development Act. The CAFRA zone does not extend up the Delaware River, so a CAFRA permit will not be required. Review of existing mapping indicates that the project area does not contain mapped coastal wetlands; therefore, a permit under the *NJ Wetlands Act of 1970* is not required. However, certain portions of the project area, particularly the Kaighn Avenue Bridge over Cooper River, are located with the Waterfront

Development Area, and proposed activities associated with these areas may require a Waterfront Development Permit for authorization.

Tidelands include all natural waters of New Jersey that are now or formerly flowed by the mean high tide. The State of New Jersey maintains claim to these tidal areas and holds them in trust for the people of New Jersey. Activities proposed within these tidal areas may require a riparian grant or tidelands license from the NJDEP Bureau of Tidelands Management and the Tidelands Resource Council.

The following permits and authorizations may also be required prior to implementation of the proposed activities including, but not limited to, the following:

Agency	Approval	Statutory Authority
Camden County Soil Conservation District	Soil Erosion & Sediment Control Plan Certification	NJ Soil Erosion & Sediment Control Act of 1975, Chapter 251
NJ State Historic Preservation Office	Determination of No Adverse Effect or Memorandum of Agreement	Section 106 of the National Historic Preservation Act of 1966
NJDEP	Waterfront Development Permit	Coastal Zone Management Rules at N.J.A.C. 7:7-4.1 et seq.
NJDEP	Letter of Interpretation	New Jersey Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A)
NJDEP	Freshwater Wetlands Permits	New Jersey Freshwater Wetlands Protection Act Rules
NJDEP	Water Quality Certificate	New Jersey Freshwater Wetlands Protection Act Rules
NJDEP	Flood Hazard Area Permit	Flood Hazard Area Control Act Rules (N.J.A.C. 7:13)
NJDEP	Stormwater Management Plan Approval	Stormwater Management Rules (N.J.A.C. 7:8)
NJDEP	Riparian Grant or Tidelands License	Tidelands Resource Council
U.S. Army Corps of Engineers	Individual or Nationwide Permit	Section 404 of the Federal Clean Water Act/Section 10 of the Rivers and Harbors Act.
U.S. Coast Guard, Bridge Administration Division	Coast Guard Bridge Permit	Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946

5.0 CONCLUSIONS

During this environmental screening phase, wetlands, surface waters, floodplains and T&E species were identified in the study area that could require NJDEP Land Use Regulation Permits and USACE permits. Concerns have also been identified with regard to archaeological/historical resources and Green Acres Encumbered Parkland. In addition, other issues have been identified which may require further investigation in the next phase of the project, including hazardous sites and air/noise sensitive receptors and timing restrictions (e.g., anadromous fish spawning, bald eagle wintering and foraging, migratory birds, and game fish).

Due to the demographics of the surrounding community, a heightened sensitivity to environmental justice issues during the development of alternatives should be considered.

As project alternatives are developed, the potential environmental impacts to the resources described in this report will be evaluated in further detail.

6.0 LIST OF REFERENCES

- Federal Interagency Committee for Wetland Delineation. 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. US Army Corps of Engineers, US Environmental Protection Agency, US Fish and Wildlife Service, and USDA Soil Conservation Service. Washington, D.C. Cooperative technical publication.
- FEMA National Flood Insurance Program, Q3 Flood Data, CD-ROM Disc 18, New Jersey, Puerto Rico, Virgin Islands, September, 1996.
- N.J.A.C. 7:7A-1 et seq. NJ Freshwater Wetlands Protection Act Rules. Last Amended June 20, 2016.
- N.J.A.C. 7:13-1 et seq. NJ Flood Hazard Area Control Act Rules. Last Amended June 20, 2016.
- NJDEP Federally Owned, Protected Open Space 1:12,000, New Jersey Department of Environmental Protection (NJDEP), Green Acres, Trenton, NJ, 1999.
- NJDEP *Amendment to the Tri-County Water Quality Management Plan*, New Jersey Department of Environmental Protection (NJDEP), Division of Watershed Management, Trenton, NJ, August 2004.
- NJDEP State Owned, Protected Open Space and Recreation Areas in New Jersey, New Jersey Department of Environmental Protection (NJDEP), Green Acres, Trenton, NJ, December 2008.
- NJDEP Surface Water Quality Standards of New Jersey, New Jersey Department of Environmental Protection (NJDEP), Division of Land Use Management, Bureau of Freshwater & Biological Monitoring, Trenton, NJ. February 2010.
- NJDEP 2007 Land Use / Land Cover Update, New Jersey Department of Environmental Protection (NJDEP), Office of Information Management (ORIM), Bureau of Geographic Information Systems (BGIS), Trenton, NJ, May 2010.
- NJDEP “Known Contaminated Site List” for New Jersey, Department of Environmental Protection, Site Remediation Program, Division of Enforcement, Technical & Financial Support, Enforcement & Information Support Element, Bureau of Information Systems (May 2014).
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- NJDEP *Ground Water Quality Standards* (N.J.A.C. 7:9C), New Jersey Department of Environmental Protection (NJDEP), Water Monitoring and Standards, Bureau of Environmental Analysis, Restoration and Standards, Trenton, NJ. Last Updated August 12, 2016.

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<http://www.nj.gov/dep/gis/geoweb splash.htm>.

NJ Natural Heritage Program. Letter to Amy S. Greene Environmental Consultants, Inc. Office of Natural Lands Management, NJ Department of Environmental Protection. Dated February 8, 2016.

N.J.S.A. 13:9B-5. 1987. New Jersey Freshwater Wetlands Protection Act. Last Amended June 20, 2016.

NOAA Habitat Conservation/Habitat Protection/Essential Fish Habitat Mapper. (n.d.). Retrieved December 21, 2016 from <http://www.habitat.noaa.gov/protection/efh/habitatmapper.html>.

Reed, P.B. 1988. National List of Plant Species that Occur in Wetlands: Northeast (Region 1). U.S. Fish and Wildlife Service. St. Petersburg, Florida.

Soil Survey Geographic (SSURGO) Database for Monmouth, New Jersey, Natural Resources Conservation Service (NRCS), United States Department of Agriculture (USDA), Fort Worth, TX, December 2013.

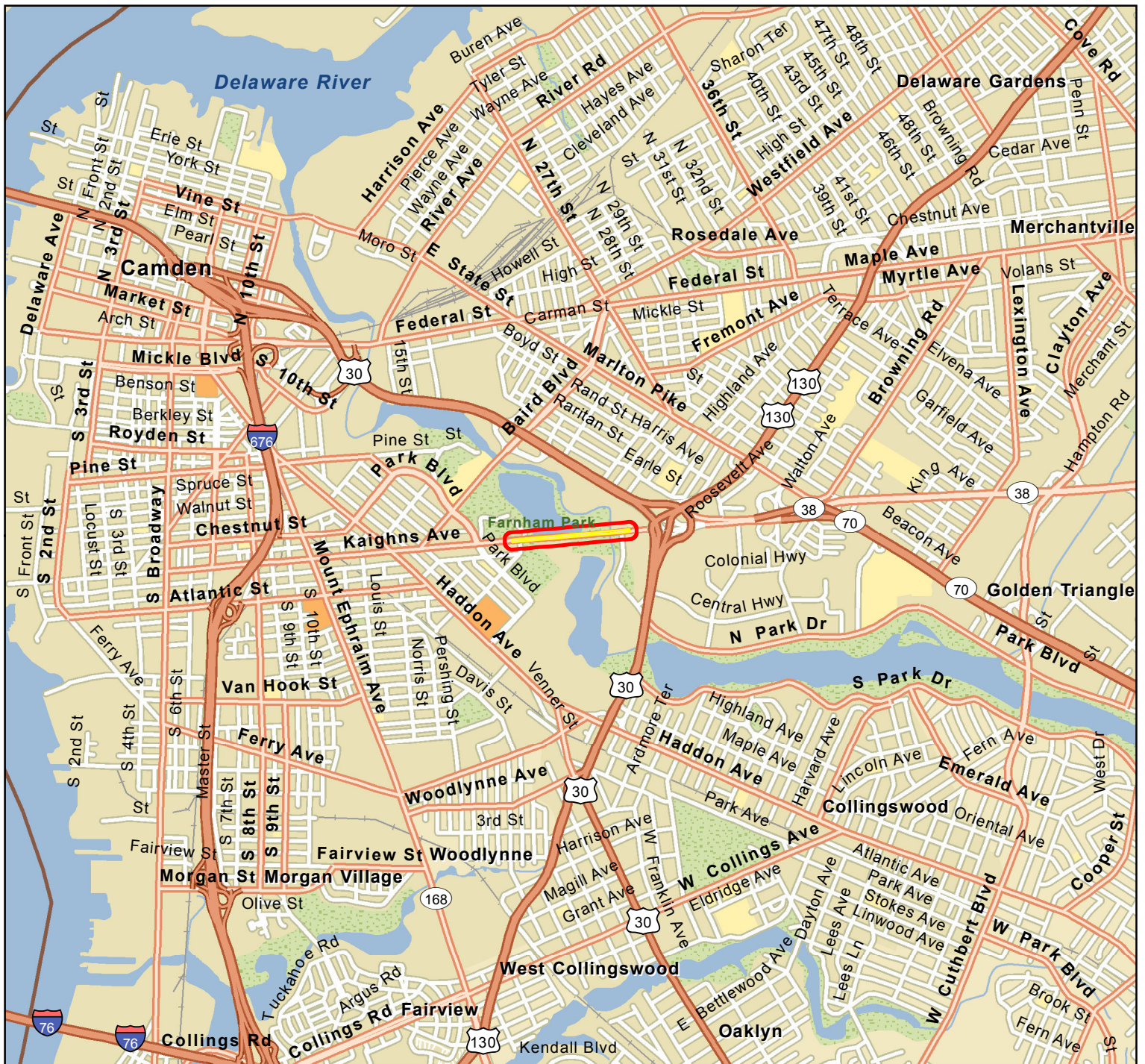
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USFWS. 2017. Information for Planning and Conservation (IPaC). Retrieved on March 23, 2017 from <http://ecos.fws.gov/ipac>.

APPENDIX A

Figures

- Figure 1 – Project Location Map
- Figure 2 – USGS Topographic Map
- Figure 3 – SSURGO Soils Map
- Figure 4 – US Coast Guard Districts Map
- Figure 5 – Tidelands Map
- Figure 6 – Environmental Constraints Map
- Figure 7 – FEMA Floodplain Map
- Figure 8 – NJDEP Wetlands Map
- Figure 9 – NJDEP Landscape Project Map
- Figure 10 – Rare Plant Species Map
- Figure 11 – Known Contaminated Sites Map
- Figure 12 – Historic Fill Map
- Figure 13 – Green Acres Open Space Map
- Figure 14 – Land Use Map



Legend

- Project Limits
- Study Area

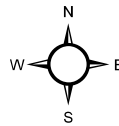
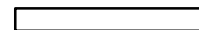


Figure 1 - Project Location / County Road Map

Kaign Avenue (CR 607)
 over the Cooper River
 Camden County Bridge 3B-6
 NJ State Structure # 043B006
 Township of Pennsauken
 and City of Camden
 Camden County, New Jersey

ASGECI Project # 3947

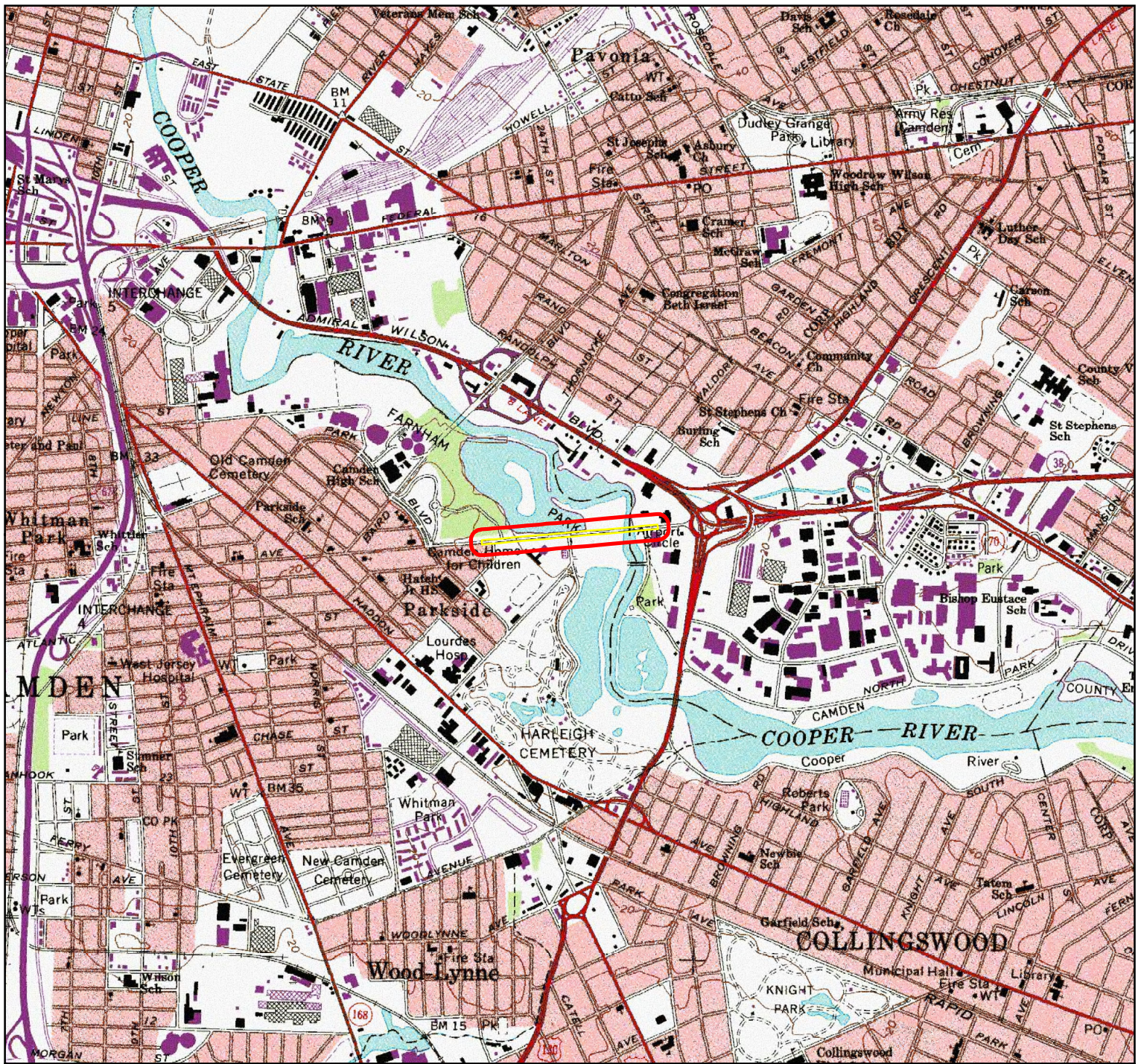
3,000



Feet



Source:
 ESRI Street Map North America, Tele Atlas North America, Inc.,
 published by ESRI® Data & Maps, Redlands, California, 2010.



Legend

- Project Limits
- Study Area

New Jersey State Plane Coordinates in NAD83 for the approximate center of project -
 North: 401,084' // East: 326,863'

Latitude and Longitude Coordinates in NAD83 for the approximate center of project -
 N: 39° 55' 59.08" / W: 75° 05' 21.70"

Source:
 Bit-Mapped 7.5 Minute Color Topographic Images of New Jersey, United States Geological Survey (USGS), Digital Raster Graphic (DRG) Topographic Series Map, Camden NJ/PA Quadrangle, USGS, Reston, Va., January 9, 1996.

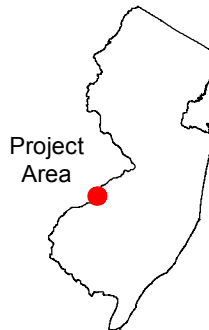
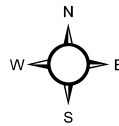


Figure 2
USGS Topographic Map

Kaighn Avenue (CR 607)
 over the Cooper River
 Camden County Bridge 3B-6
 NJ State Structure # 043B006
 Township of Pennsauken
 and City of Camden
 Camden County, New Jersey

ASGECI Project # 3947

2,000



Feet





Legend

- Site Location
- Study Area

SOILS LIST:
UR - Urban land [NL]

Sources:
Soil Survey Geographic (SSURGO) Database for Camden County, New Jersey,
U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, Texas, December 2013.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey -
Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic
Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

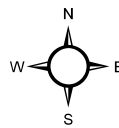


Figure 3
SSURGO Soils Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

600






Feet





Legend

-  Site Location
-  Study Area
-  US Coast Guard District Boundary

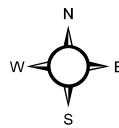
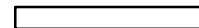


Figure 4
US Coast Guard District Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

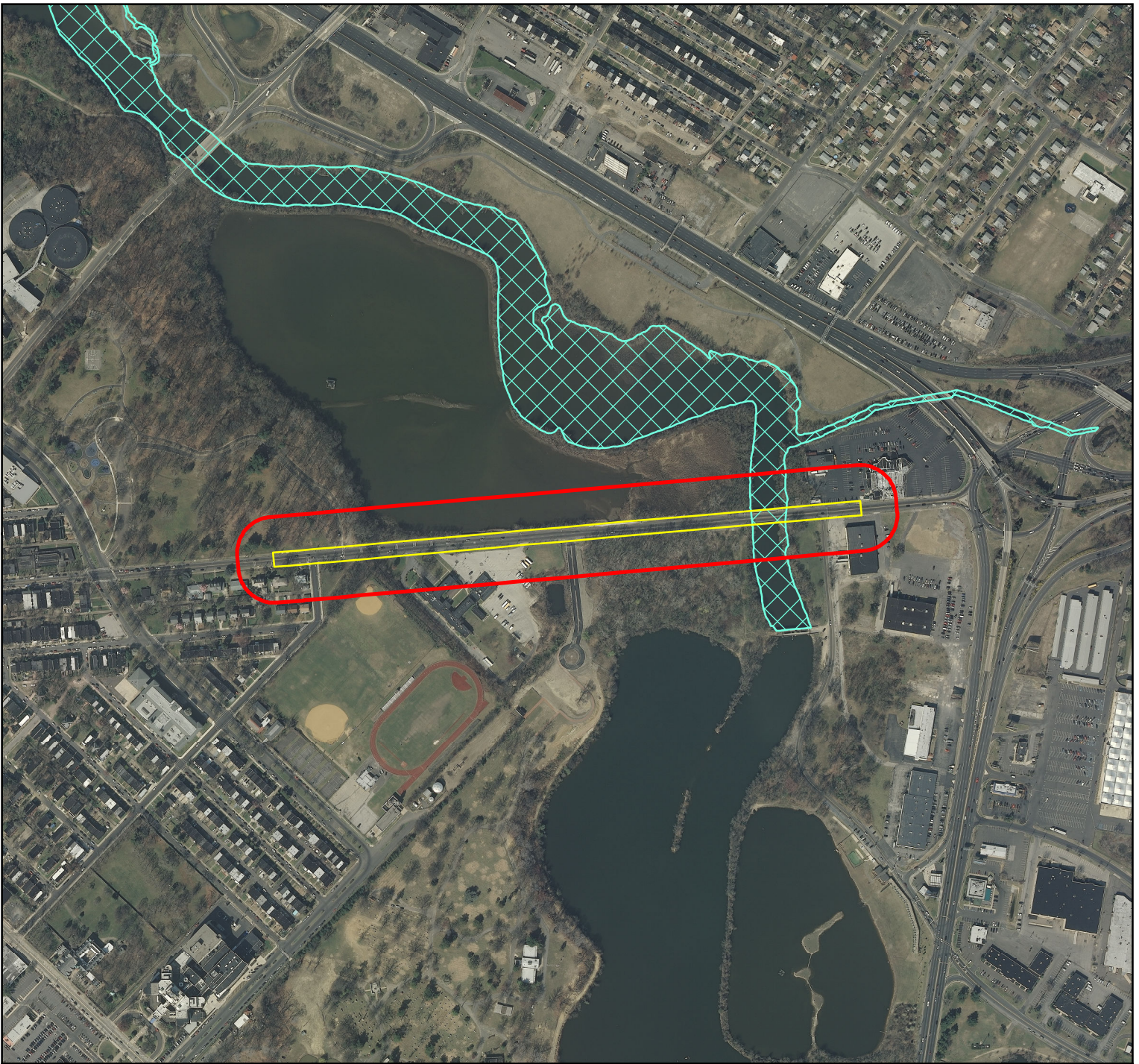
15






Miles



Sources:
United States Coast Guard (USCG) Districts, United States Coast Guard Districts
Operations Systems Center, United States Coast Guard (USCG), December 2010.
ESRI Street Map North America, Tele Atlas North America, Inc.,
published by ESRI® Data & Maps, Redlands, California, 2010.



Legend

-  Site Location
-  Study Area
-  Tidelands (claimed)

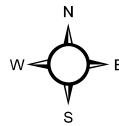


Figure 5
Tidelands Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

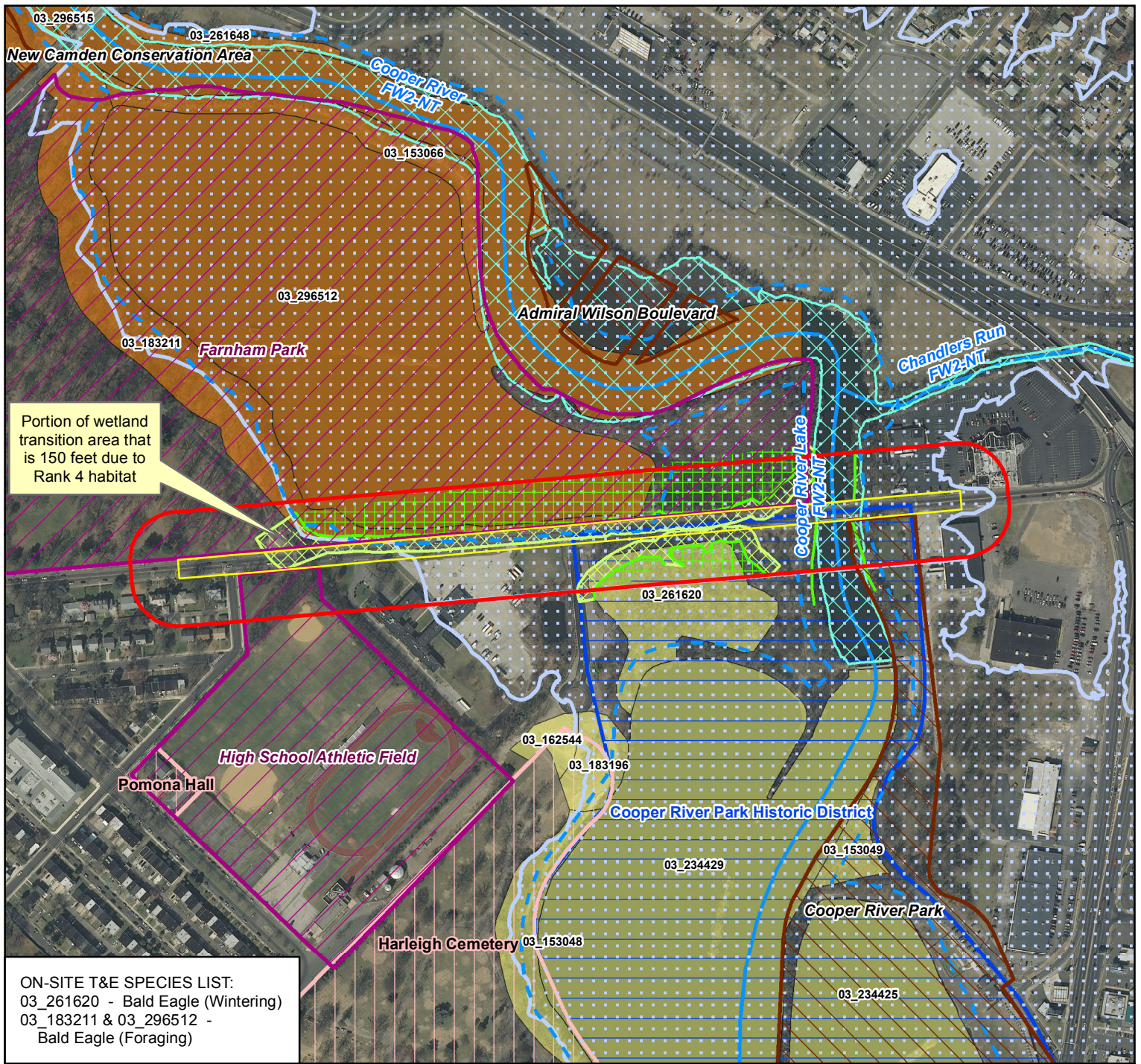
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Feet



Sources:
NJDEP Tidelands (Delaware North), New Jersey Department of Environmental Protection (NJDEP), Bureau of Tidelands Management, Map Date: 1971-1991, Trenton, NJ, 1996, released as vector digital data July 2004.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This map/publication/report was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



ON-SITE T&E SPECIES LIST:
 03_261620 - Bald Eagle (Wintering)
 03_183211 & 03_296512 - Bald Eagle (Foraging)

Legend

- | | |
|------------------------------------|--------------------|
| Site Location | Rank 3 Habitat |
| Study Area | Rank 4 Habitat |
| Streams with Water Quality | County Open Space |
| 50-foot Riparian Buffer Zone Limit | Nearby Green Acres |
| Delineated Wetlands | Historic District |
| Wetland Transition Area | Historic Property |
| 100-year FEMA Floodplain | Tidlands (Claimed) |

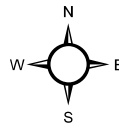


Figure 6
Environmental Constraints Map

Kaighn Avenue (CR 607)
 over the Cooper River
 Camden County Bridge 3B-6
 NJ State Structure # 043B006
 Township of Pennsauken
 and City of Camden
 Camden County, New Jersey

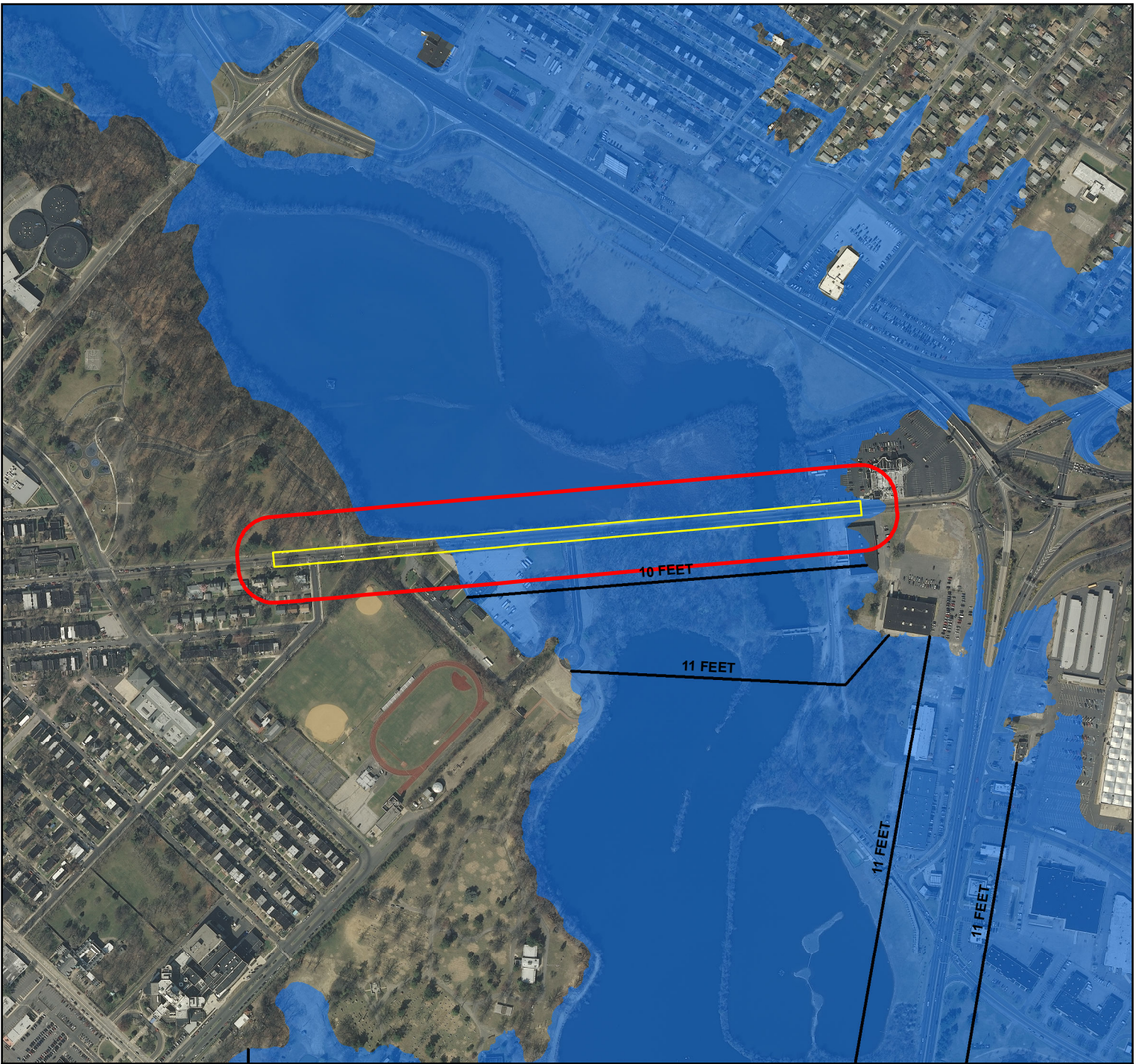
ASGECI Project # 3947

450

Feet



Source: Environmental Constraints Layers are the latest available GIS datasets released by various State departments and agencies as maintained by the New Jersey Department of Environmental Protection (NJDEP), Office of Information Resources Management, Bureau of Geographic Information Systems, Trenton, NJ as of January 2016. Wetland Delineation conducted by Amy S. Greene Environmental Consultants Inc. on March 14, 2016. Wetland Transition Area and Riparian Buffer determined by Amy S. Greene Environmental Consultants Inc., December 2016. New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013. This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

- Site Location
- Study Area
- 100-year FEMA Floodplain
- Base Flood Elevation

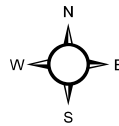


Figure 7
FEMA Floodplain Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

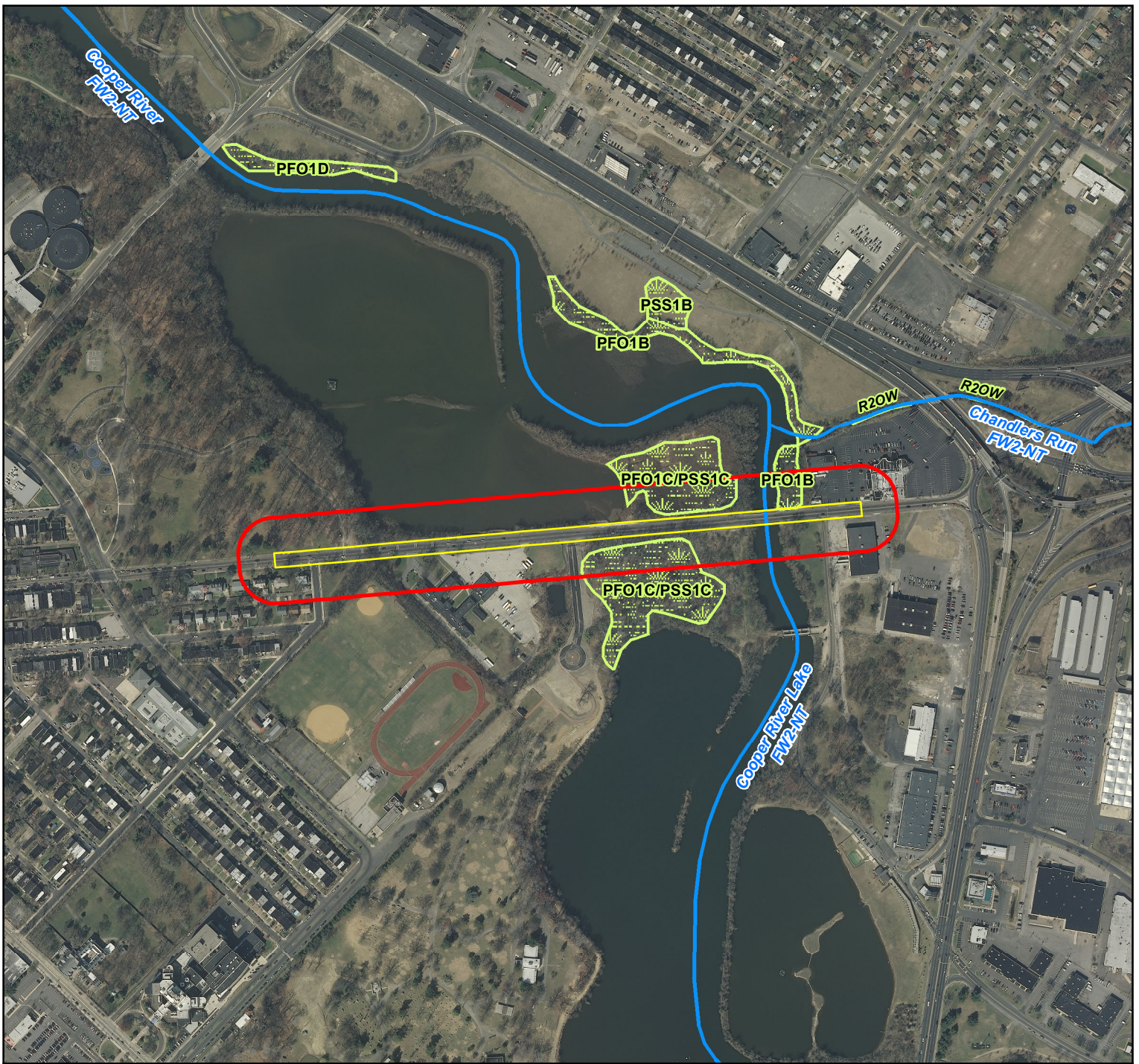
600



Feet

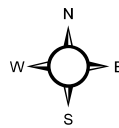


Sources:
Preliminary Digital Flood Insurance Rate Map (DFIRM) Database, Camden County, New Jersey, Federal Emergency Management Agency, vector digital data, Federal Insurance and Mitigation Administration, Washington, DC, September 2014.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

- Site Location
- Study Area
- Streams with Water Quality
- NJDEP Freshwater Wetlands
- NJDEP Linear Wetlands



WETLAND CLASSIFICATIONS:

PFO1B - Palustrine, Forested, Broad-Leaved Deciduous, Saturated
 PFO1C/PSS1C - Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded / Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded

Sources:
 NJDEP Wetlands of New Jersey by County, 1986, New Jersey Department of Environmental Protection (NJDEP), Office of Information Resources Management, Bureau of Geographic Information and Analysis, NJDEP, Trenton, November 1999.
 NJDEP Surface Water Quality Standards of New Jersey, NJ Department of Environmental Protection (NJDEP), Water Monitoring & Standards (WMS), Bureau of Freshwater and Biological Monitoring (BFBM), Trenton, NJ, December 2010.
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
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Figure 8
NJDEP Wetlands Map

Kaighn Avenue (CR 607)
 over the Cooper River
 Camden County Bridge 3B-6
 NJ State Structure # 043B006
 Township of Pennsauken
 and City of Camden
 Camden County, New Jersey

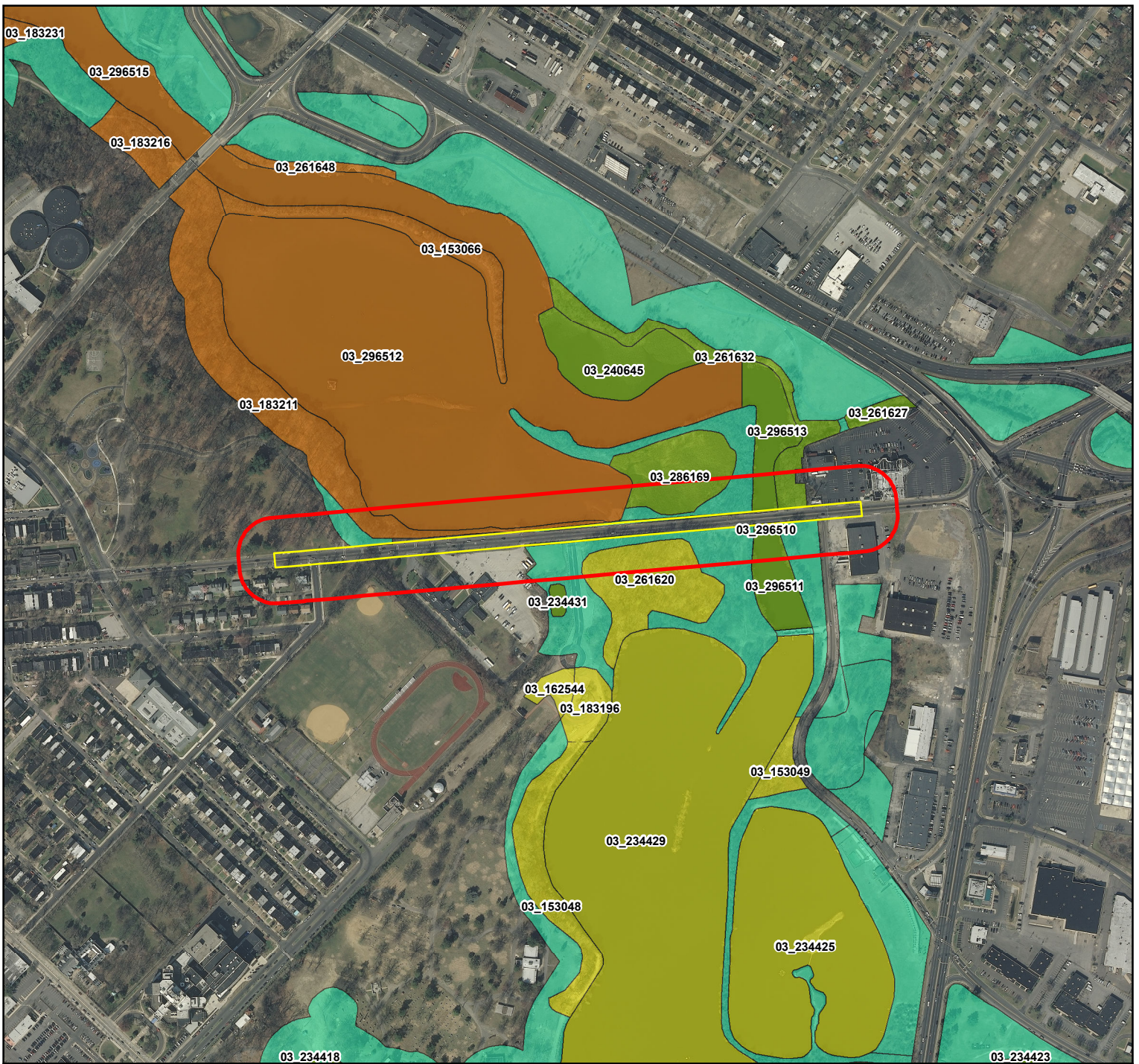
ASGECI Project # 3947

600



Feet





Legend

- Site Location
- Study Area
- Rank 1 Habitat
- Rank 2 Habitat
- Rank 3 Habitat
- Rank 4 Habitat
- Rank 5 Habitat

SPECIES LIST:

- 03_183211 - Bald Eagle (Foraging)
- 03_261620 - Great Blue Heron (Foraging) & Bald Eagle (Wintering)
- 03_261632, 03_286169, 03_296510, 03_296511, & 03_296513 - Great Blue Heron (Foraging)
- 03_296512 - Great Blue Heron (Foraging) & Bald Eagle (Foraging)

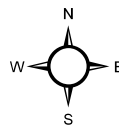


Figure 9
NJDEP Landscape Project Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

600



Feet






Sources:
NJDEP Species Based Habitat by Landscape Region (Version 3.1), New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Endangered Non-Game Species Program, NJ Division of Fish and Wildlife, Trenton, NJ, February 2012.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

-  Site Location
-  Study Area

Natural Heritage Plant Grid

-  Documented Location Known Precisely
-  Documented Location Known Within 1.5 Miles
-  Both 'M' and 'S' Occurrences

Sources:
 NJDEP Natural Heritage Grid Map, NJ Department of Environmental Protection (NJDEP), Office of Natural Lands Management (ONLM), Trenton, NJ, November 2009.
 NJDEP Natural Heritage Priority Sites, NJ Department of Environmental Protection (NJDEP), New Jersey Office of Natural Lands Management (ONLM), Trenton, NJ, March 2007.
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
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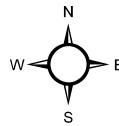
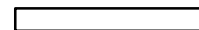


Figure 10
Rare Plant Species Map

Kaighn Avenue (CR 607)
 over the Cooper River
 Camden County Bridge 3B-6
 NJ State Structure # 043B006
 Township of Pennsauken
 and City of Camden
 Camden County, New Jersey

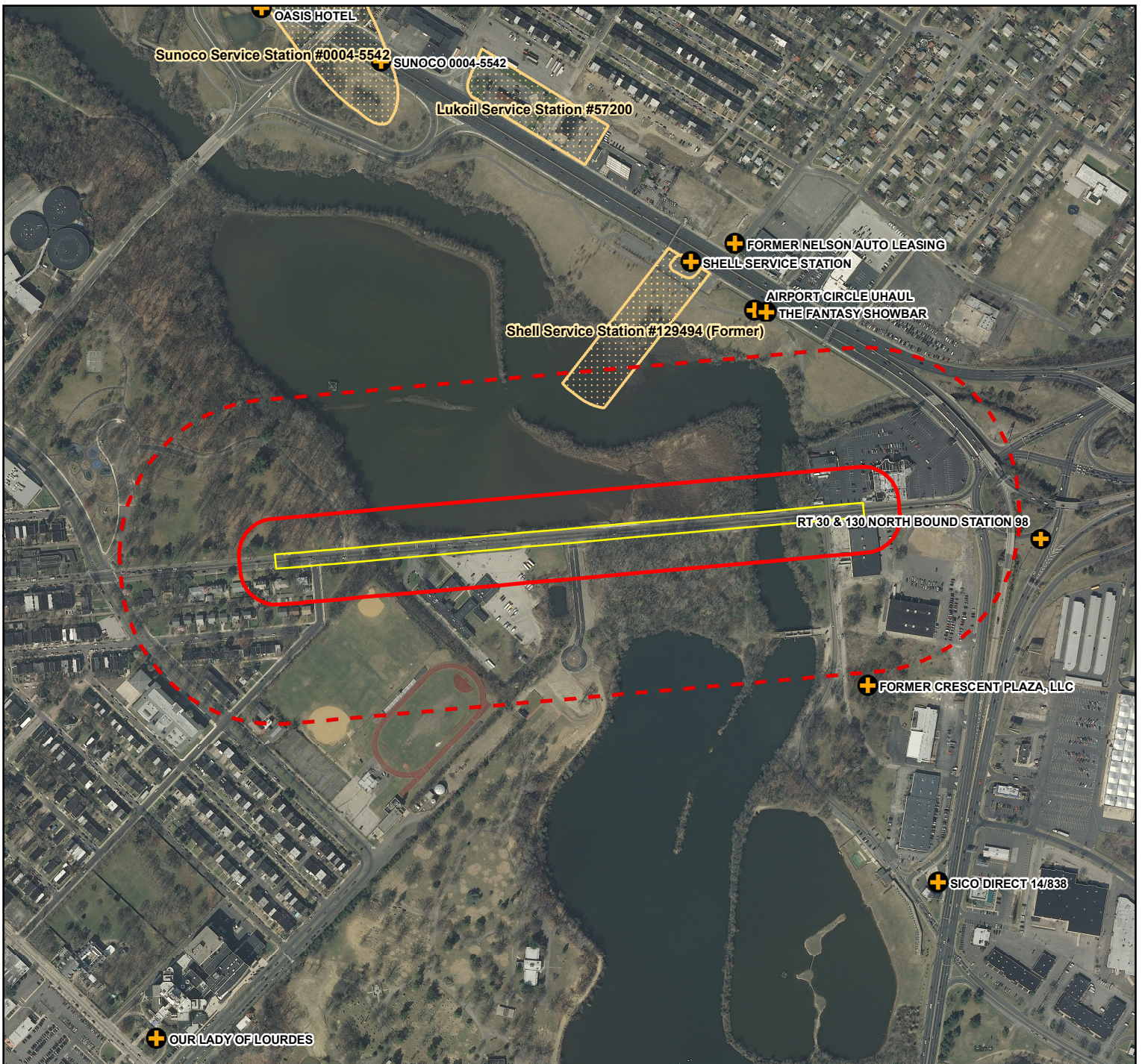
ASGECI Project # 3947

2,000








Feet





Legend

-  Site Location
-  Study Area
-  500-foot Buffer of Study Area
-  Known Contaminated Site
-  Classification Exception Area

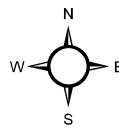


Figure 11
Known Contaminated Sites Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

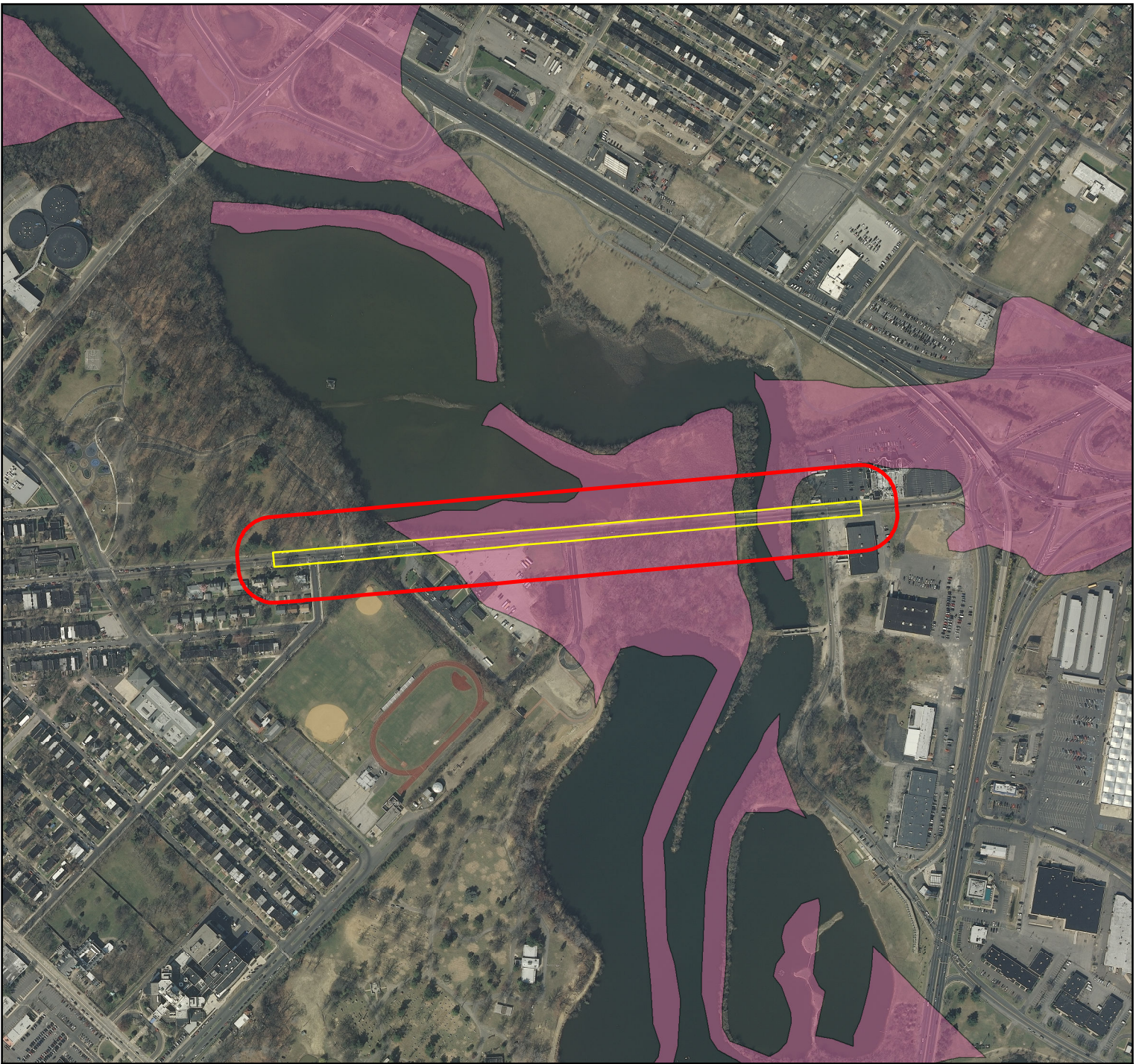
ASGECI Project # 3947

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Feet



Sources:
NJDEP Known Contaminated Site List for New Jersey, Department of Environmental Protection, Site Remediation Program, Division of Enforcement, Technical & Financial Support, Enforcement & Information Support Element, Bureau of Information Systems, May 2014.
NJDEP Classification Exception Areas / Well Restriction Areas Polygon Maps for New Jersey, New Jersey Department of Environmental Protection (NJDEP), Site Remediation Program (SRP), Bureau of GIS (BGIS), Trenton, NJ, September 2016.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

-  Site Location
-  Study Area
-  Historic Fill

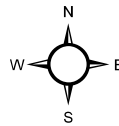


Figure 12
Historic Fill Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

600







Feet



Sources:
Historic Fill For New Jersey As Of January 2016, New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological and Water Survey (NJG&WS), Digital Geodata Series DGS04-7, vector digital data, New Jersey Department of Environmental Protection, Trenton, NJ, January 2016.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

-  Site Location
-  Study Area
-  County Open Space
-  Nearby Green Acres

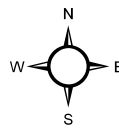


Figure 13
Green Acres and Open Space Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGEI Project # 3947

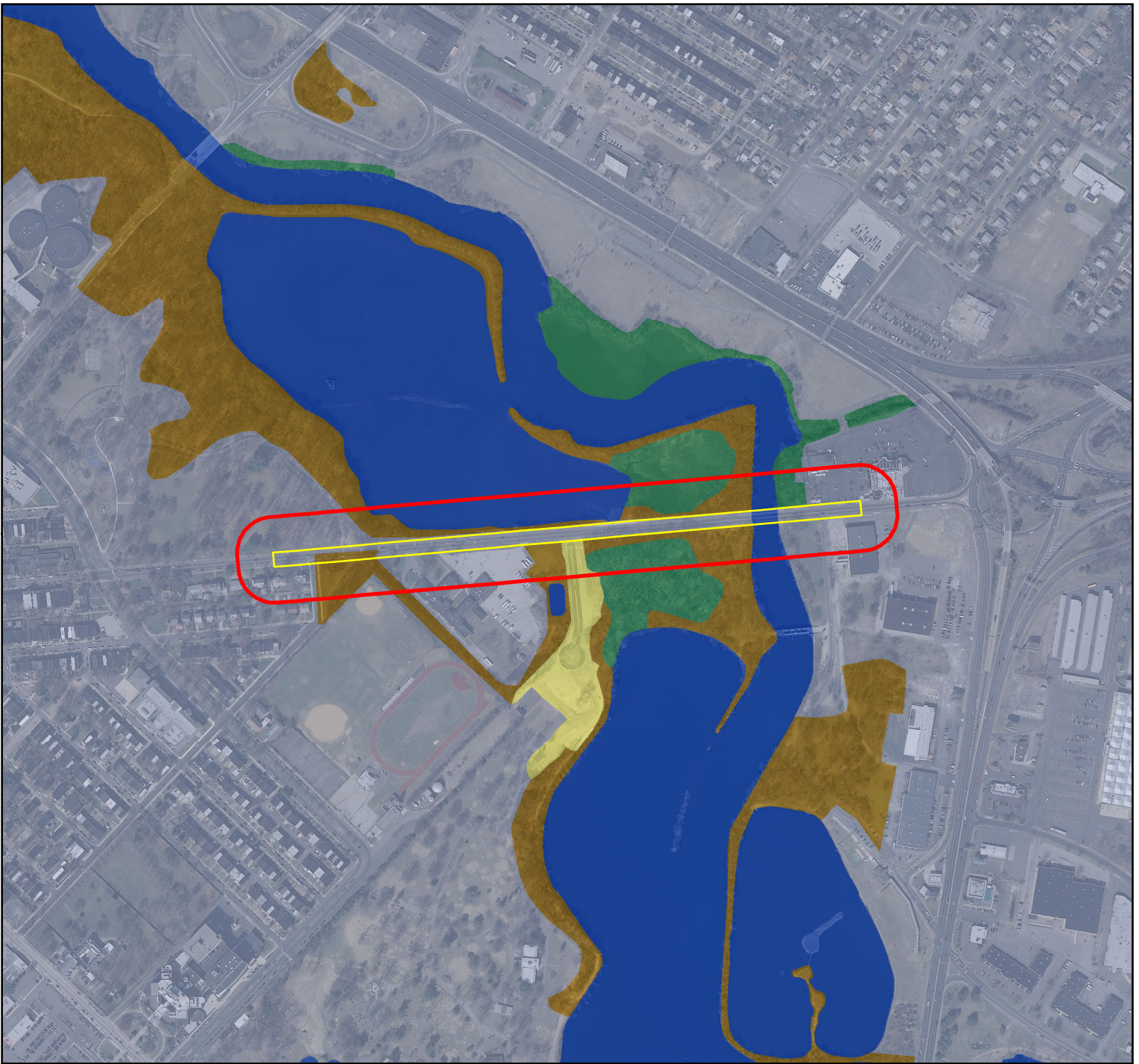
600






Feet



Sources:
County Open Space and Recreation Areas in New Jersey, Edition 20160307, New Jersey Department of Environmental Protection (NJDEP), Green Acres Program, Trenton, NJ, March 2016.
State Owned, Protected Open Space and Recreation Areas in New Jersey, Edition 20160223, New Jersey Department of Environmental Protection (NJDEP), Green Acres, Trenton, NJ, February 2016.
Green Acres Parcels identified from the Green Acres Recreation and Open Space Inventory (ROSI) database, Green Acres Program, New Jersey Department of Environmental Protection, last updated July 12, 2016 and mapped utilizing State of New Jersey Composite of Parcels Data, New Jersey Office of Information Technology, Office of Geographic Information Systems, February 2014.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

- | | | |
|--|---------------|---|
|  | Site Location | LAND USE: |
|  | Study Area |  AGRICULTURE |
| | |  BARREN LAND |
| | |  FOREST |
| | |  URBAN |
| | |  WATER |
| | |  WETLANDS |

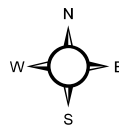


Figure 14
Land Use Map

Kaighn Avenue (CR 607)
over the Cooper River
Camden County Bridge 3B-6
NJ State Structure # 043B006
Township of Pennsauken
and City of Camden
Camden County, New Jersey

ASGECI Project # 3947

600



Feet



Sources:
Land Use/Land Cover 2012 Update, Edition 20150217, New Jersey Department of Environmental Protection (NJDEP), Office of Information Resources Management (OIRM), Bureau of Geographic Information Systems (BGIS), Trenton, NJ, February 2015.
New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

APPENDIX B

Photographs and Descriptions



Photo A: View, facing northwest, of the west bank of the Cooper River, to the north of Kaighn Avenue Bridge.



Photo B: View, facing northeast, of the east bank of the Cooper River, to the north of Kaighn Avenue Bridge.



Photo C: View, facing southeast, of the east bank of the Cooper River, to the south of Kaighn Avenue Bridge.

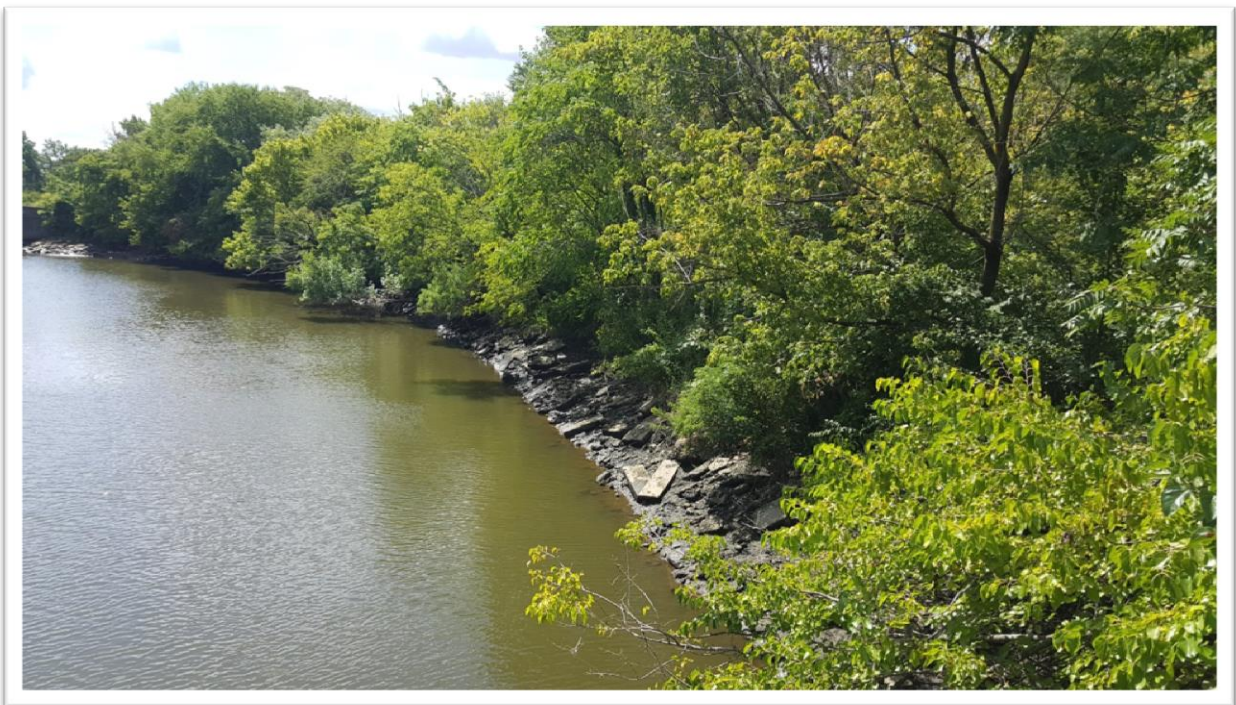


Photo D: View, facing southwest, of the west bank of the Cooper River, to the south of Kaighn Avenue Bridge.



Photo E: View, facing north, of the emergent herbaceous tidal wetland to the north of Kaighn Avenue, across from MetEast High School.



Photo F: View, facing northwest, of the vegetation adjacent to the northern side of Kaighn Avenue, across from MetEast High School.



Photo G: View, facing southeast, of the forested wetland area on the southern side of Kaighn Avenue, to the east of MetEast High School.

APPENDIX C

Agency Correspondence

Letter from the NJ Natural Heritage Program (dated February 8, 2016)
Information, Planning and Conservation (IPaC) System Report (dated August 5, 2015)
Email correspondence from NOAA/National Marine Fisheries Service (dated March 20, 2017)



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

State Forestry Services

Mail Code 501-04

ONLM - Natural Heritage Program

P.O. Box 420

Trenton, NJ 08625-0420

Tel. #609-984-1339

Fax. #609-984-1427

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

February 8, 2016

John Pabish
Amy S. Greene Environmental Consultants, Inc.
4 Walter E. Foran Boulevard, Suite 209
Flemington, NJ 08822-4666

Re: Kaighn Avenue (CR 607) over the Cooper River - ASGECI #3947
Pennsauken Township and the City of Camden, Camden County

Dear Mr. Pabish:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.1) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for all occurrences of rare wildlife species or wildlife habitat within one mile of the referenced site. Please refer to Table 2 (attached) to determine if any rare wildlife species or wildlife habitat is documented within one mile of the project site. Detailed reports are provided for each category coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

For requests submitted as part of a Flood Hazard Area Control Act (FHACA) rule application, we report records for all rare plant species and ecological communities tracked by the Natural Heritage Program that may be on your project site. (In some borderline cases these records may be described as on or in the immediate vicinity of your project site.) A subset of these plant species are also covered by the FHACA rules when the records are located within one mile of the project site. One mile searches for plant species will only report occurrences for those plant species identified under the FHACA regulations as being critically dependent on the watercourse. Please refer to Table 2 (attached) to determine if any rare plant species covered by the FHACA rules have been documented. Detailed reports are provided for each category coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or within one mile of the project site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive NJ-GeoWeb website at the following URL, <http://www.state.nj.us/dep/gis/geoweb splash.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Robert J. Cartica
Administrator

c: NHP File No. 16-3907581-9283

Mail Code 501-04
 Department of Environmental Protection
 State Forestry Services
 Office of Natural Lands Management
 P.O. Box 420 Trenton, New Jersey 08625-0420
 (609) 984-1339 Fax: (609) 984-1427

Invoice

	Date	Invoice #
	2/8/2016	9283

Bill to: Amy S. Greene Environmental Consultants, Inc. 4 Walter E. Foran Boulevard, Suite 209 Flemington, NJ 08822-4666	Make check payable to: Office of Natural Lands Management And forward with a copy of this statement to: Mail Code 501-04 Office of Natural Lands Management P.O. Box 420 Trenton, New Jersey 08625-0420
--	--

Quantity (hrs.)	Description	Rate (per hr.)	Amount
1	Charge for Natural Heritage Database search for rare species and ecological communities locational information. Project: 16-3907581-9283	\$ 70.00	\$ 70.00
John Pabish Project Name: Kaighn Avenue (CR 607) over the Cooper River - ASGECI #3947		Total	\$ 70.00

Table 1: On Site Data Request Search Results (7 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. On or In the Immediate Vicinity of the Project Site Based on Search of the Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
3. Natural Heritage Priority Sites On Site	No	0 pages included
4. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
5. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
6. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
7. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat on the Project
Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Strank
Aves	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Wintering	3	NA	State Threatened	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

Table 2: Within 1 Mile for FHACA Searches (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Rare Plant Species Covered by the Flood Hazard Area Control Act Rule Within One Mile of the Project Site Based on Search of Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within 1 mile	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species Within One Mile of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat Within One
Mile of the Project Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Wintering	3	NA	State Threatened	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 East Jimmie Leeds Road Unit 4
Galloway, NJ 08205
Phone: (609) 382-5273 Fax: (609) 646-0352

<http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

In Reply Refer To:

March 23, 2017

Consultation Code: 05E2NJ00-2017-SLI-0703

Event Code: 05E2NJ00-2017-E-01163

Project Name: Kaighn Avenue, Camden, NJ

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change,

chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Jersey Ecological Services Field Office

4 East Jimmie Leeds Road Unit 4

Galloway, NJ 08205

(609) 382-5273

Project Summary

Consultation Code: 05E2NJ00-2017-SLI-0703
Event Code: 05E2NJ00-2017-E-01163
Project Name: Kaighn Avenue, Camden, NJ
Project Type: BRIDGE CONSTRUCTION / MAINTENANCE
Project Description: Bridge Replacement

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/39.93307145510764N75.08970442520595W>



Counties: Camden, NJ

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Critical habitats

There are no critical habitats within your project area.

USFWS National Wildlife Refuges And Fish Hatcheries

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges or fish hatcheries within your project area.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Least Bittern (<i>Ixobrychus exilis</i>) https://ecos.fws.gov/ecp/species/6175	On Land: Breeding
Rusty Blackbird (<i>Euphagus carolinus</i>)	On Land: Wintering
Wood Thrush (<i>Hylocichla mustelina</i>)	On Land: Breeding
Worm Eating Warbler (<i>Helmitheros vermivorum</i>)	On Land: Breeding
Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) https://ecos.fws.gov/ecp/species/9399	On Land: Breeding
Purple Sandpiper (<i>Calidris maritima</i>)	On Land: Wintering
American Bittern (<i>Botaurus lentiginosus</i>) https://ecos.fws.gov/ecp/species/6582	On Land: Breeding

American Oystercatcher (<i>Haematopus palliatus</i>) https://ecos.fws.gov/ecp/species/8935	On Land: Year-round
Pied-billed Grebe (<i>Podilymbus podiceps</i>)	On Land: Year-round
Snowy Egret (<i>Egretta thula</i>)	On Land: Breeding
Blue-winged Warbler (<i>Vermivora pinus</i>)	On Land: Breeding
Saltmarsh Sparrow (<i>Ammodramus caudacutus</i>)	On Land: Year-round
Kentucky Warbler (<i>Oporornis formosus</i>)	On Land: Breeding
Prairie Warbler (<i>Dendroica discolor</i>)	On Land: Breeding
Prothonotary Warbler (<i>Protonotaria citrea</i>)	On Land: Breeding
Fox Sparrow (<i>Passerella iliaca</i>)	On Land: Wintering
Upland Sandpiper (<i>Bartramia longicauda</i>) https://ecos.fws.gov/ecp/species/9294	On Land: Breeding
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	On Land: Year-round
Red Knot (<i>Calidris canutus rufa</i>) https://ecos.fws.gov/ecp/species/1864	On Land: Wintering
Bald Eagle (<i>Haliaeetus leucocephalus</i>) https://ecos.fws.gov/ecp/species/1626	On Land: Year-round
Gull-billed Tern (<i>Gelochelidon nilotica</i>) https://ecos.fws.gov/ecp/species/9501	On Land: Breeding
Peregrine Falcon (<i>Falco peregrinus</i>) https://ecos.fws.gov/ecp/species/8831	On Land: Wintering
Short-eared Owl (<i>Asio flammeus</i>) https://ecos.fws.gov/ecp/species/9295	On Land: Wintering
Willow Flycatcher (<i>Empidonax traillii</i>) https://ecos.fws.gov/ecp/species/3482	On Land: Breeding

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
 - Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
-

- Year-round bird occurrence data

<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

FRESHWATER EMERGENT WETLAND

- [PEM5R](#)

FRESHWATER FORESTED/SHRUB WETLAND

- [PSS1/EM1R](#)

RIVERINE

- [R1UBV](#)
-

Stephanie Zilinskis

From: Karen Greene - NOAA Federal <karen.greene@noaa.gov>
Sent: Monday, March 20, 2017 4:54 PM
To: Stephanie Zilinskis
Cc: Bill Romaine; Michelle Magliocca - NOAA Federal
Subject: Re: Essential Fish Habitat Letter Request

Hi Stephanie,

EFH has not been designated this far up the Delaware River. EFH is only found within the sea water and mixing zones of the Delaware and its tributaries. Our website <https://www.greateratlantic.fisheries.noaa.gov/habitat/index.html> has additional information on EFH and EFH mapping (see both Species Maps and Designations by Location) under the EFH tab. One way to determine if you are in the sea water or mixing zone is to look at USFWS' National Wetlands Inventory Mapper. If your site is shown as M for marine or E for estuarine, this corresponds to our sea water (S) and mixing (M) zones respectively.

The Cooper River does have a spawning run of anadromous fish. To protect the migration and spawning of these species, including alewife and blueback herring, a seasonal in-water work restriction is usually recommended. The restriction is typically from March 1 to June 30.

If you have any other questions, please feel free to contact me.

Thanks.

Karen

Karen Greene
Mid-Atlantic Field Offices Supervisor
NOAA/National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732
732 872-3023 (office)

On Mon, Mar 20, 2017 at 2:17 PM, Stephanie Zilinskis <szilinskis@amygreene.com> wrote:

Good afternoon Karen,

We are writing up an Environmental Screening Report to assist in the development of a bridge reconstruction plan for the Kaighn Avenue (CR 607) Bridge (State Structure #043B006; Camden County Bridge #3B-6) over the Cooper River in the Township of Pennsauken and City of Camden, Camden County, NJ. The

Environmental Screening Report needs to provide a preliminary indication of the extent of environmentally sensitive resources located within the study area.

The study area consists of all properties surrounding Camden County Bridge 3B-6, beginning approximately 2,175 feet to the west of Kaighn Avenue Bridge, extending approximately 150 feet (ft.) to the north and south of Kaighn Avenue, also known as Dr. Charles Brimm Boulevard, in the City of Camden, Camden County, NJ. Farnham Park is located to the north of Kaighn Avenue. MetEast High School lies within the western limits of the study area, to the south side of Kaighn Avenue; and a residential area lies immediately to the west of MetEast High School, at the southwestern corner of the study area. The eastern portion of the study area is moderately developed. The northeastern and southeastern portions of the study area contain NJDEP Freshwater Wetlands and their respective 50-foot wetland transition areas. This portion of Cooper River is tidally influenced and according to NJDEP Bureau of Tidelands mapping, areas now or formerly flowed by the tide in the vicinity of the proposed project are subject to Tidelands Claims. This portion of Cooper River contains 100-year Federal Emergency Management Agency (FEMA) Floodplain areas by the NJDEP. The northeastern and southeastern corners of the study area are occupied by commercial properties, including The Pub, a sneaker outlet, and a thrift shop.

We are looking to obtain a letter from NMFS stating whether or not the Cooper River contains federally managed Essential Fish Habitat in the project area.

A Site Location map and the IPaC report for the study area are attached for your reference.

Thank you,

Stephanie Zilinskis

Environmental Scientist

Amy S. Greene Environmental Consultants, Inc.

4 Walter E. Foran Boulevard | Suite 209

Flemington, NJ 08822

Phone: [\(908\) 788-9676, Ext. 37](tel:(908)788-9676) | Fax: [\(908\) 788-6788](tel:(908)788-6788)

Email: szilinskis@amygreene.com

Please visit our website: www.amygreene.com

APPENDIX D

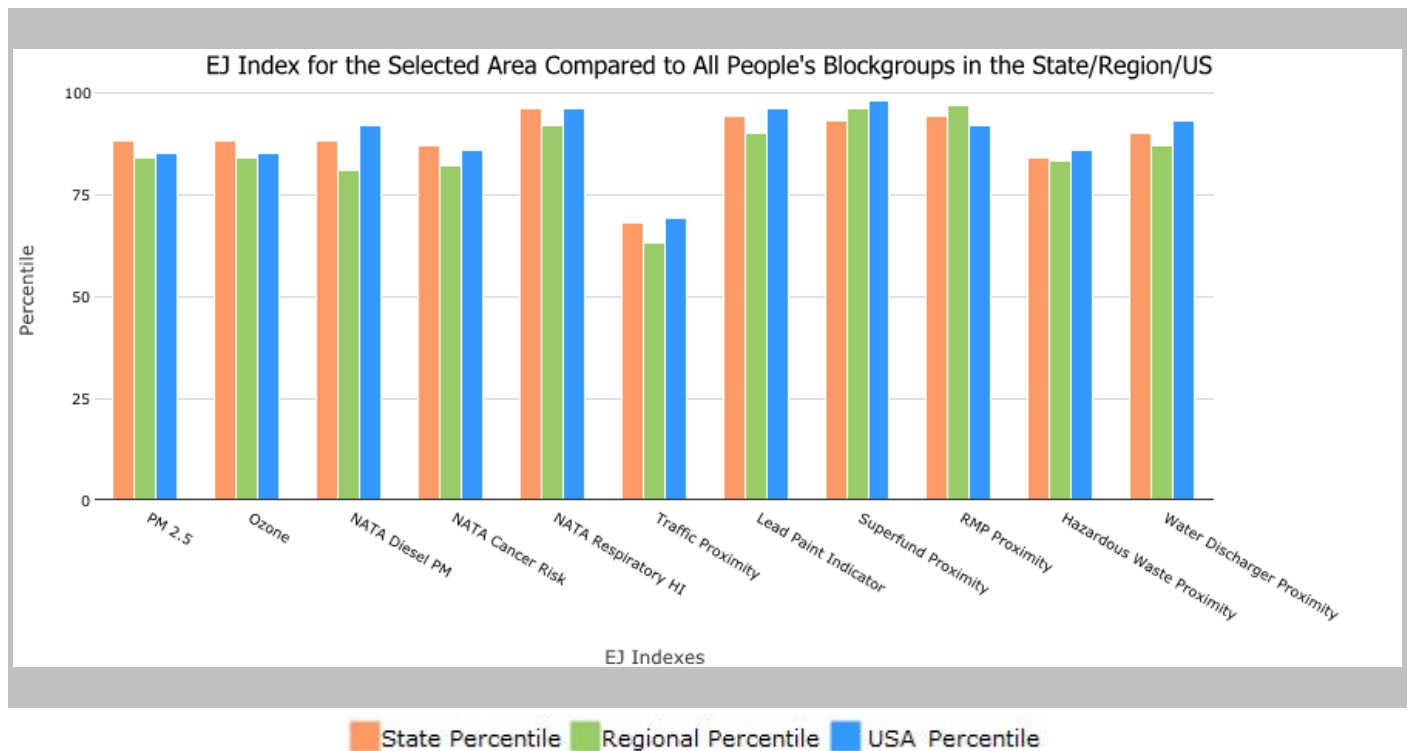
EJSCREEN Report

the User Specified Area, NEW JERSEY, EPA Region 2

Approximate Population: 51

Input Area (sq. miles): 0.07

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	88	84	85
EJ Index for Ozone	88	84	85
EJ Index for NATA* Diesel PM	88	81	92
EJ Index for NATA* Air Toxics Cancer Risk	87	82	86
EJ Index for NATA* Respiratory Hazard Index	96	92	96
EJ Index for Traffic Proximity and Volume	68	63	69
EJ Index for Lead Paint Indicator	94	90	96
EJ Index for Superfund Proximity	93	96	98
EJ Index for RMP Proximity	94	97	92
EJ Index for Hazardous Waste Proximity ⁺	84	83	86
EJ Index for Water Discharger Proximity	90	87	93

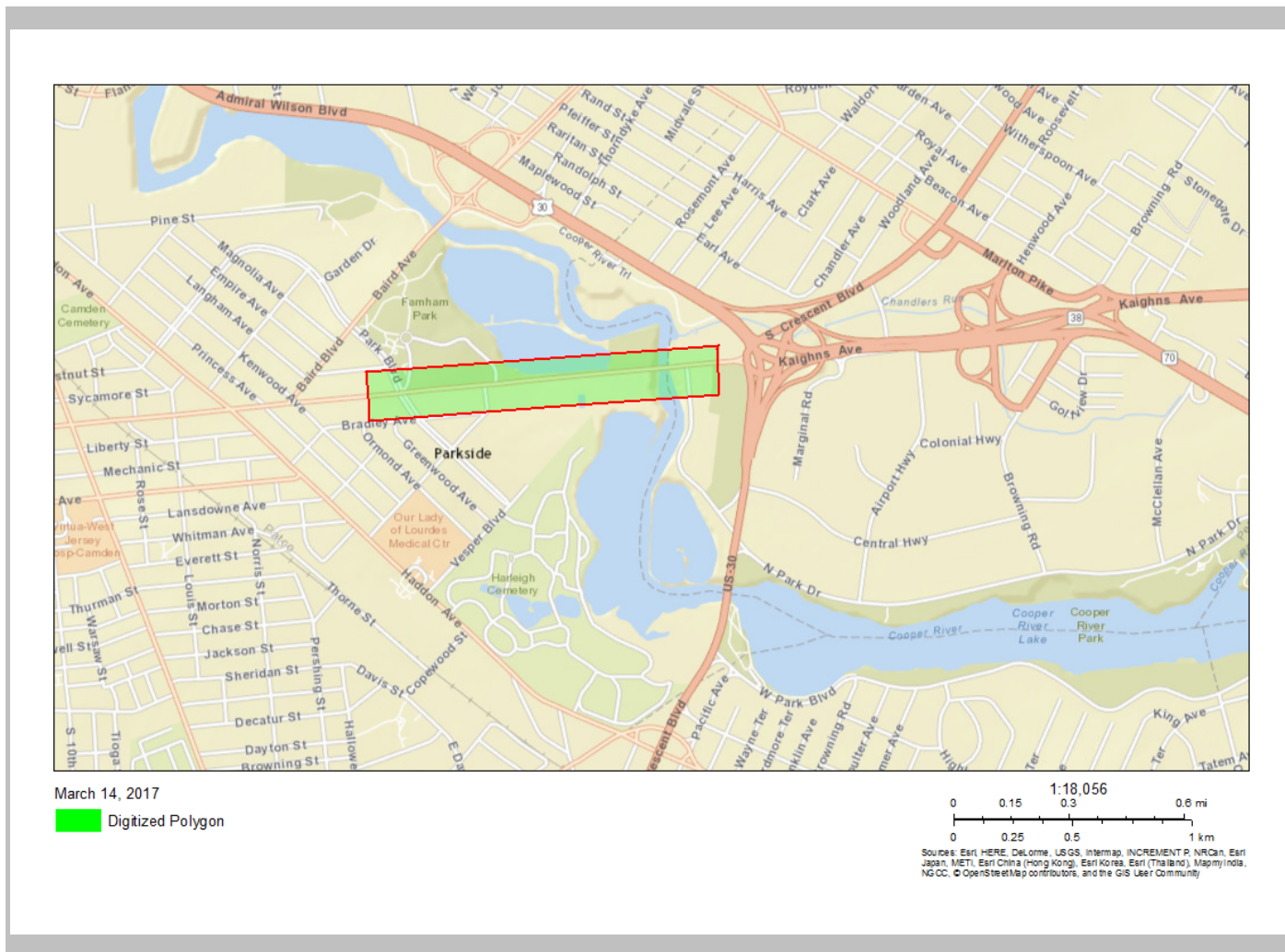


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

the User Specified Area, NEW JERSEY, EPA Region 2

Approximate Population: 51

Input Area (sq. miles): 0.07



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

the User Specified Area, NEW JERSEY, EPA Region 2

Approximate Population: 51

Input Area (sq. miles): 0.07

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	10.2	9.26	93	9.13	94	9.32	70
Ozone (ppb)	49.2	47.6	59	46.2	83	47.4	55
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	2.06	1.31	86	1.87	60-70th	0.937	90-95th
NATA* Cancer Risk (lifetime risk per million)	50	42	77	44	60-70th	40	80-90th
NATA* Respiratory Hazard Index	5.7	2.1	99	2.4	95-100th	1.8	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	18	660	15	1800	14	590	25
Lead Paint Indicator (% Pre-1960 Housing)	0.89	0.42	96	0.52	89	0.3	96
Superfund Proximity (site count/km distance)	0.95	0.44	88	0.29	93	0.13	98
RMP Proximity (facility count/km distance)	0.94	0.33	90	0.24	94	0.43	87
Hazardous Waste Proximity* (facility count/km distance)	0.12	0.14	65	0.13	68	0.11	74
Water Discharger Proximity (facility count/km distance)	0.45	0.42	71	0.53	68	0.31	82
Demographic Indicators							
Demographic Index	78%	33%	94	36%	92	36%	93
Minority Population	100%	42%	100	43%	100	37%	100
Low Income Population	56%	25%	90	30%	85	35%	81
Linguistically Isolated Population	15%	7%	82	8%	79	5%	89
Population With Less Than High School Education	38%	12%	95	14%	93	14%	93
Population Under 5 years of age	13%	6%	94	6%	94	6%	94
Population over 64 years of age	7%	14%	20	14%	18	14%	22

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

APPENDIX E

Area of Potential Effects Report

Prepared by: RGA

Dated: April 4, 2017



CULTURAL
RESOURCE
CONSULTANTS

HEADQUARTERS

259 Prospect Plains Road | Building D | Cranbury, New Jersey 08512 | 609-655-0692

April 4, 2017

Elkins Green
Director, Division of Environmental Resources & Context Sensitive Solutions
New Jersey Department of Transportation
PO Box 600
Trenton, New Jersey 08625

Re: Area of Potential Effects Report, Local Concept Development Study, Kaighns Avenue (CR 607) over the Cooper River, City of Camden and Township of Pennsauken, Camden County, New Jersey

Dear Mr Green:

Camden County is proposing to undertake roadway improvements to the Kaighns Avenue/County Route (CR) 607 corridor between Glenn Drive, in the City of Camden and North Park Drive, in Pennsauken Township (Figures 1 and 2). The project has recently advanced to the Local Concept Development phase (LCD). This letter has been prepared to delineate the project's Area of Potential Effects for Architectural History (APE), identify consulting and interested parties, and outline a Public Participation Plan in order to initiate Section 106 consultation among Camden County, the Federal Highway Administration (FHWA), the Delaware Valley Regional Planning Commission (DVRPC), the New Jersey Department of Transportation (NJDOT), and the New Jersey State Historic Preservation Office (HPO). The Public Participation Plan and list of consulting and interested parties are attached hereto.

The project plans currently include the replacement of the Kaighns Avenue Bridge over the Cooper River (Structure #043B006) as well as milling, repaving and pavement reconstruction of Kaighns Avenue in the aforementioned section of the roadway for a distance of approximately 1680 feet west of the bridge and 185 feet east of the bridge (see Attachments). The pavement reconstruction project would utilize federal funds from the FHWA provided by Local Capital Project Delivery (LCPD) Program administered by the DVRPC. If federal funding cannot be obtained for the replacement of the Kaighns Avenue Bridge, Camden County will review funding the replacement of the bridge from alternate funding sources.

The Kaighns Avenue Bridge is a two-span, thru girder encased steel bridge with concrete abutments and panels constructed in 1925 to improve access to the Benjamin Franklin Bridge (then called the Delaware River Bridge), which opened in 1926. The Kaighns Avenue Bridge was commissioned by Camden County and constructed by the firm of Aaron Ward. Ward, one of most prominent contractors of Camden in the late nineteenth century died in 1915 and his son, Franklin, continued his father's business. A circa 1889 iron plaque that reads "AARON WARD CONTRACTOR 1889" is located on the north span of the Kaighns Avenue Bridge.

The Kaighns Avenue Bridge over the Cooper River is included in the 1994 New Jersey Historic Bridge Survey (A.G. Lichtenstein & Associates, Inc. 1994). The survey determined that the bridge was a representative example of its type but not technologically significant. It was recommended ineligible for listing on the National Register of Historic Places (NRHP) in 1995 and SHPO concurred.

ADDITIONAL OFFICES | Philadelphia | Florida | Pennsylvania | Maryland | Ohio

ON THE WEB | www.richardgrubb.com | mail@richardgrubb.com

DBE/WBE/SBE CERTIFIED

One previously identified resource listed in or eligible for the NRHP is located in the APE (see Figure 3):

- Cooper River Park Historic District (SHPO Opinion 2/16/2000; Previous SHPO Opinion 2/28/1994; NR 7/19/2016). The northernmost boundary of this expansive district, which is located within four municipalities of Camden County, is situated along the southern median of Kaighns Avenue. The subject bridge, however, is not located within the district and therefore is not considered a contributing resource. A set of stone steps original to the park's design and contributing resources to the Cooper River Park Historic District are located in proximity to the proposed bridge replacement, however they will not be impacted by the proposed undertaking.

The APE was delineated based on any significant direct or visual effects that the proposed undertaking may have on historic architectural resources. A project reconnaissance was completed in April 2016 to delineate the APE (see Figures 2, 3, 4). The boundaries of the APE encompass all of the project area, which includes portions of Kaighns Avenue from Admiral Wilson Boulevard (US Route 30) west to Glenn Drive, a small paved path that provides access to Farnham Park, located to the north of the project area, as well as portions of the Cooper River Park located to the south of the project area (see Figure 3). The eastern boundary of the APE adheres to tax parcel boundaries and includes the entire properties located adjacent to the project area. The western edge has been pared down from tax parcel boundaries due to the tree line along the Cooper River, which provides a visual buffer from project effects. East of the bridge, the APE extends onto the boundaries of the roadway only, where only milling and repaving are anticipated.

There is one historic architectural resource located within the APE that is recommended for intensive-level surveying:

- The Pub (7600 Kaighns Avenue) (Block 08110, Lot 1): a circa 1962 restaurant.

Overview photographs of the APE are shown in the Photo Plates and depicted on Figure 4 in the Attachments. The APE for Archaeology consists of the limits of ground disturbance (see Attachment B: Preliminary Preferred Alternative).

If you have any questions or comments regarding this APE report, please contact me at 609-655-0692 ext. 356.

Yours very truly,



Kelly E. Wiles, M.S.
Architectural Historian

cc: Gary W. Patterson, PE, IH Engineers, P.C.
Kevin Becica, PE, PP, CME, CFM, Camden County Engineer
John J. Coscia, Jr., Manager, Office of Project Implementation, Delaware Valley Regional Planning Commission
Lauralee Rappleye, NJDOT-Bureau of Environmental Program Resources

Enc.

PUBLIC PARTICIPATION PLAN
Kaighns Avenue (CR 607) over the Cooper River

Soliciting the views of the public and those groups/individuals with interests in historic preservation is a valued part of the Section 106 process. A public participation plan has been developed to involve the public and interested parties in the identification and evaluation of historic properties that might be affected by the project.

The public participation plan for the replacement of the Kaighns Avenue Bridge over the Cooper River and the roadway improvements of the Kaighns Avenue Corridor between Glenn Drive and North Park Drive includes the following:

- A letter notifying and soliciting input on the identification of historic resources in the APEs will be sent to local preservation groups/individuals with an identified interest in preservation (see attached list). A copy of and responses to the letter will be attached to the final cultural resources documentation.
- Community involvement will be coordinated with the requirements of the National Environmental Policy Act (NEPA). Public meetings with stakeholders in City of Camden and Pennsauken Township will be held to describe the project and to solicit input. Public Information Centers will be held with notifications of time, place, and content of the meetings being sent to property owners, officials, and interested parties. Documentation of the notification and response to the public meetings will become part of the final cultural resources documentation.
- The cultural resources documentation will be circulated to the following entitled consulting parties: Camden County Engineering, FHWA, DVRPC, NJDOT, and the HPO. No other consulting parties have been identified at this time.
- The cultural resources documentation will be sent to local preservation groups/individuals with an identified interest in historic preservation (see attached list). Responses to the report will be attached to the final cultural resources documentation.

The public participation plan is commensurate with the Scope of Work, defined at this time as the Local Concept Development Study, Kaighns Avenue (CR 607) over the Cooper River, City of Camden and Township of Pennsauken, Camden County, New Jersey.

CONSULTING AND INTERESTED PARTIES
Kaighns Avenue (CR 607) over the Cooper River

Consulting Parties:

FHWA
DVRPC
NJDOT
HPO
County of Camden
City of Camden
Township of Pennsauken

Identified Historic Preservation Groups/Local Individuals with an Identified Interest in Preservation:

Chris Perks, President
Camden County Historical Society
1900 Park Boulevard
Camden, NJ 08103

Edwin C. Williams, Planning Director/Zoning Officer
City of Camden Historic Preservation Commission
PO Box 95120
Camden, NJ 08101

Jack Weber, President
Pennsauken Historical Society
9301 Burrough-Dover Lane
Pennsauken, NJ 08110

John Figueroa, Deputy Mayor
Pennsauken Historical Committee
5605 North Crescent Boulevard
Pennsauken, NJ 08110

Ilene Grossman-Bailey, Ph.D., President
Archaeological Society of New Jersey
36 E. Palmer Street
Morrisville, PA 19067

ATTACHMENT A: FIGURES AND PLATES

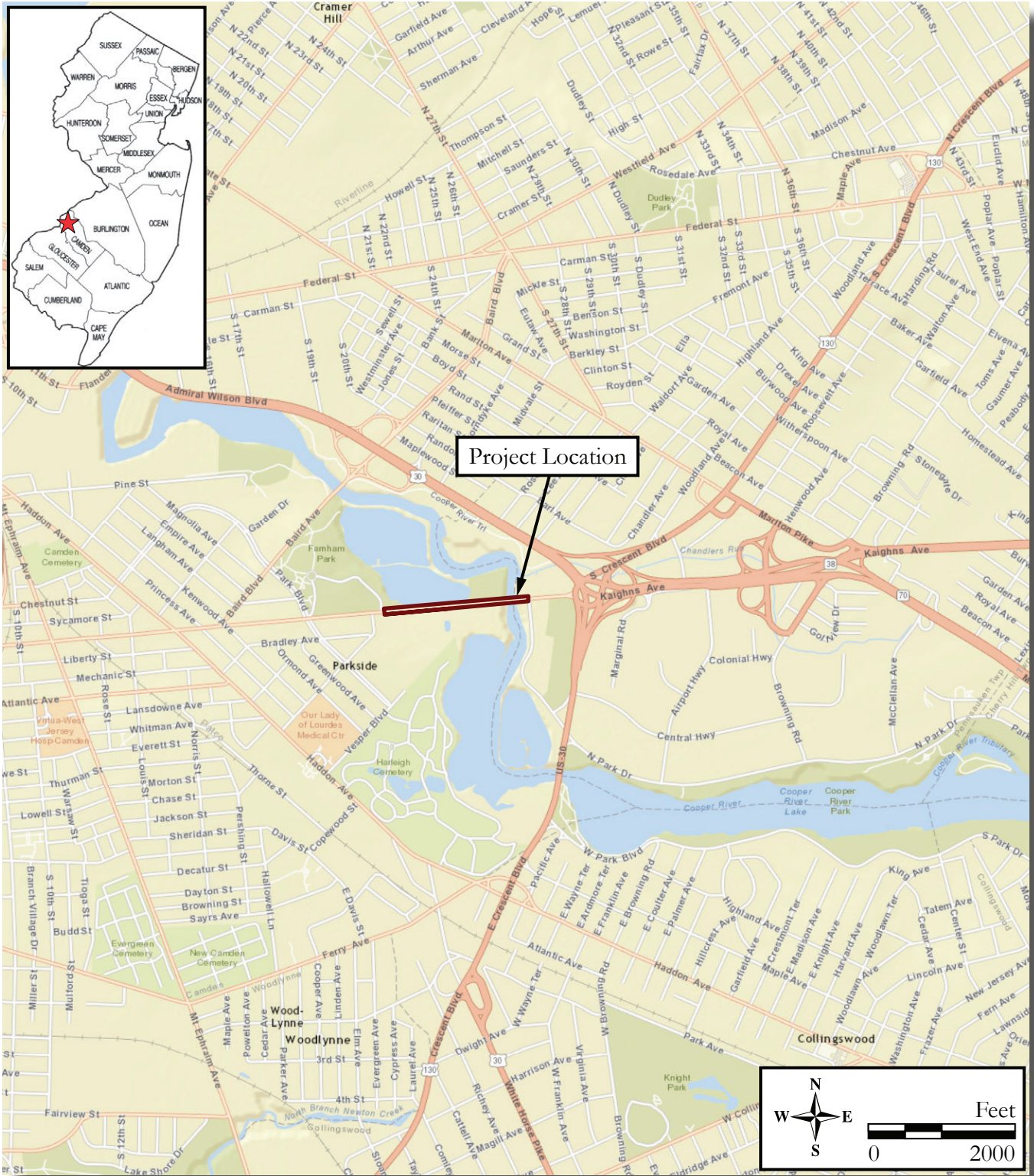


Figure 1: County Map showing the Project Location.



Figure 2: Tax map of Camden County depicting the Area of Potential Effects (APE).



Figure 3: Aerial photograph depicting the Area of Potential Effects (APE), the project location and National Register listed/eligible resources.



Figure 4: Aerial photograph depicting the Area of Potential Effects (APE), the project location, and photograph locations and angles.



Plate 1: Eastern approach of the Kaighns Avenue Bridge.

Photo view: East

Photographer: Kelly E. Wiles

Date: May 27, 2016



Plate 2: View of the Kaighns Avenue Bridge.

Photo view: Southwest

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 3: View west of the Kaighns Avenue Bridge with surrounding development to the north and south.

Photo view: West

Photographer: Kelly E. Wiles

Date: May 27, 2016



Plate 4: Eastern approach of the Kaighns Avenue Bridge.

Photo view: East

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 5: Kaighns Avenue running southwest towards downtown Camden.

Photo view: Southwest

Photographer: Kelly E. Wiles

Date: May 27, 2016



Plate 6: Western approach of the Kaighns Avenue Bridge.

Photo view: West

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 7: Western approach of the Kaighns Avenue Bridge.

Photo view: West

Photographer: Kelly E. Wiles

Date: May 27, 2016



Plate 8: View southeast of the northern span, piers and undergrade of the Kaighns Avenue Bridge.

Photo view: Southeast

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 9: View northwest of the southern span, piers and undergrade of the Kaighns Avenue Bridge.

Photo view: Northwest

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 10: View west of the northern span and pedestrian barricade of the Kaighns Avenue Bridge.

Photo view: West

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 11: Detail of parapet on the southern span of the Kaighns Avenue Bridge.

Photo view: South

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 12: Detail of an iron T-bar underneath spalled concrete on the pedestrian barrier on the southern span of the Kaighns Avenue Bridge.

Photo view: East

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 13: Detail of remnants of an iron light post on a parapet on the southern span of the Kaighns Avenue Bridge.

Photo view: South

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 14: A circa 1889 Aaron Ward contractor plate that predates the bridge.

Photo view: North

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 15: Remnants of a stone staircase adjacent to the Kaighns Avenue Bridge.

The structure is a contributing resource to the Cooper River Park Historic District.

Photo view: South

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 16: Remnants of a stone staircase adjacent to the Kaighns Avenue Bridge.

The structure is a contributing resource to the Cooper River Park Historic District.

Photo view: Southeast

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 17: Remnants of a stone staircase adjacent to the Kaighns Avenue Bridge.

The structure is a contributing resource to the Cooper River Park Historic District.

Photo view: Southeast

Photographer: Kelly E. Wiles

Date: April 25, 2016



Plate 18: View south towards the Cooper River Park Historic District from the Kaighns Avenue Bridge.

Photo view: South

Photographer: Kelly E. Wiles

Date: April 25, 2016



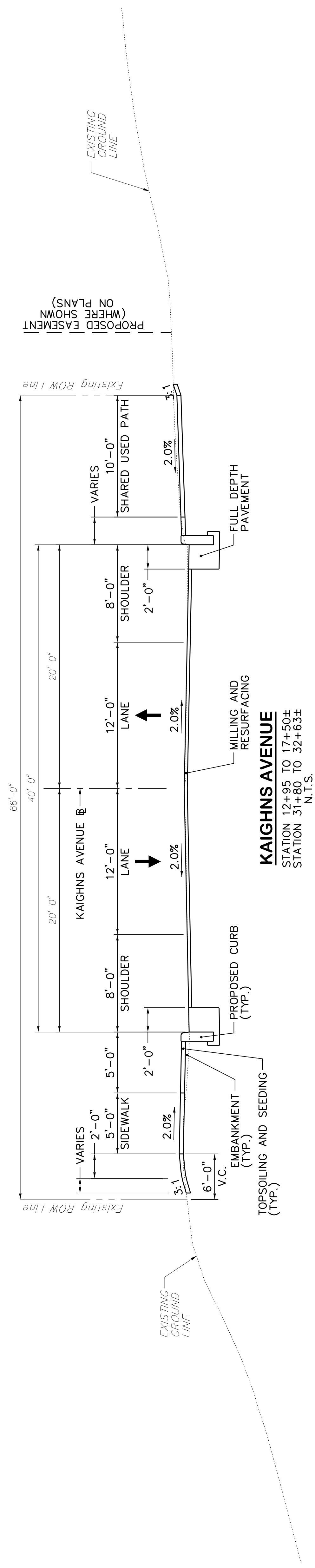
Plate 19: View northwest of the main entrance of The Pub, located at 7600 Kaighns Avenue in Pennsauken.

Photo view: Northwest

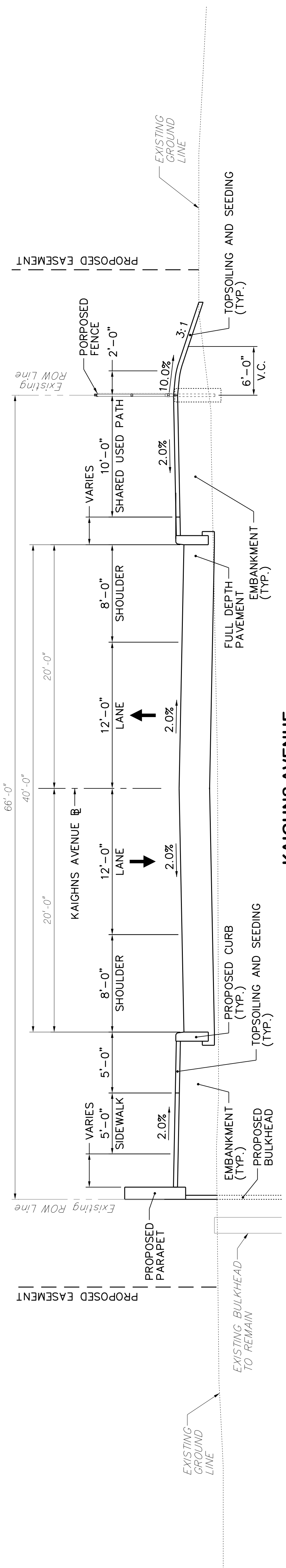
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Date: May 27, 2016

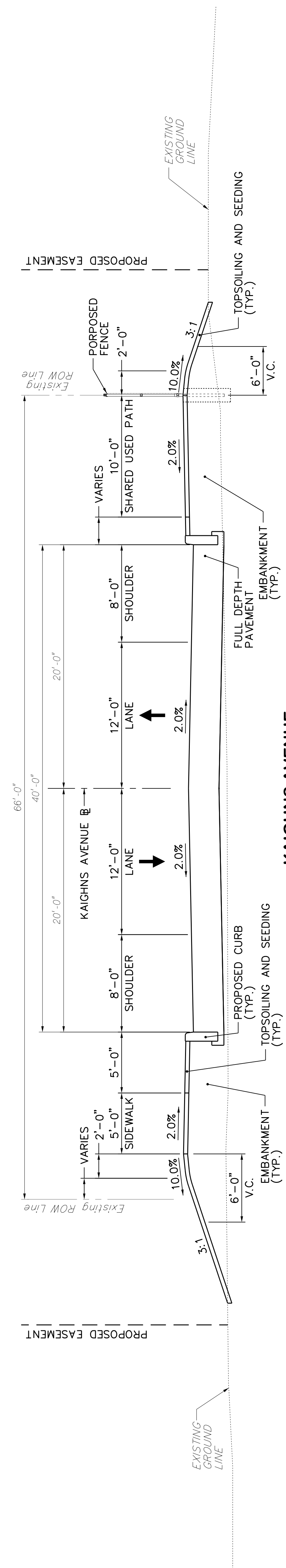
ATTACHMENT B: PRELIMINARY PREFERRED ALTERNATIVE



KAIGHNS AVENUE
STATION 12+95 TO 17+50±
STATION 31+85 TO 32+65±
N.T.S.



KAIGHNS AVENUE
STATION 17+50 TO 24+50±
N.T.S.



KAIGHNS AVENUE
STATION 24+50 TO 29+50±
STATION 31+20 TO 31+80±
N.T.S.

Camden County Department of Public Works
Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwald, New Jersey 08021

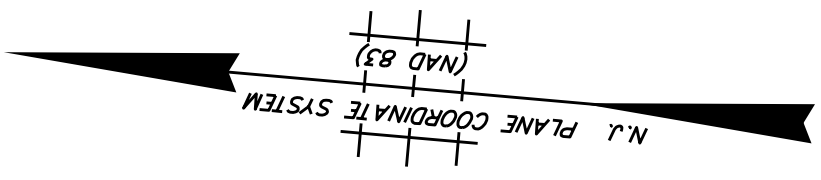
**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

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Sheet No. of
Date: 2017

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PRINCETON, NJ 08540

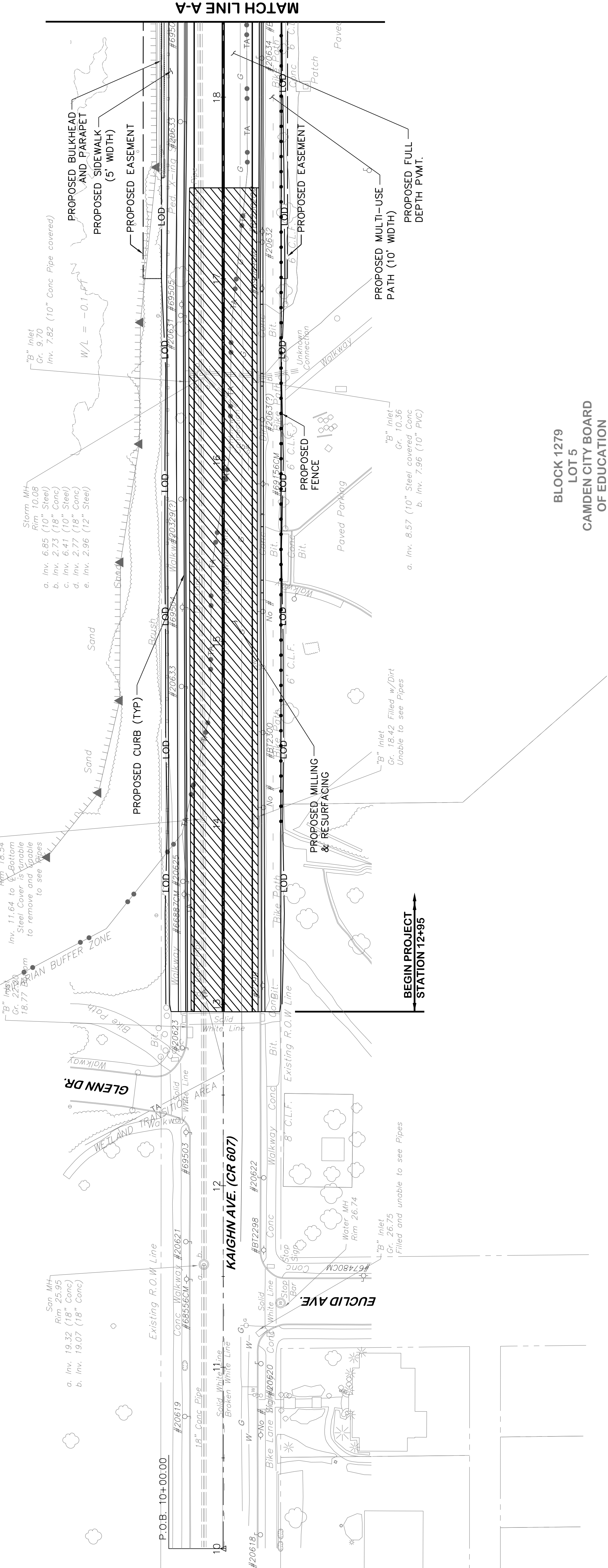


SPENTILLS

SUSERS

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FARNHAM PARK
(GREEN ACRES)

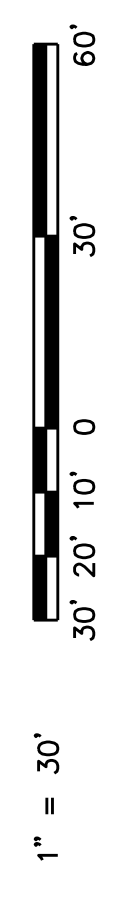


BLOCK 1279
LOT 5
CAMDEN CITY BOARD
OF EDUCATION

BEGIN PROJECT
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 - +—+— EXISTING STORMWATER
 - +—+— EXISTING GAS LINE
 - +—+— EXISTING WATER LINE
 - +—+— EXISTING SEWER
 - ▨ MILLING AND RESURFACING
 - LOD — LIMIT OF DISTURBANCE
 - TA — TRANSITION AREA
 - ||||| WETLANDS
 - RIPARIAN BUFFER ZONE



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Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwald, New Jersey 08021

**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

CONSTRUCTION PLAN - 1

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Date: 2017

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PRINCETON, NJ 08540

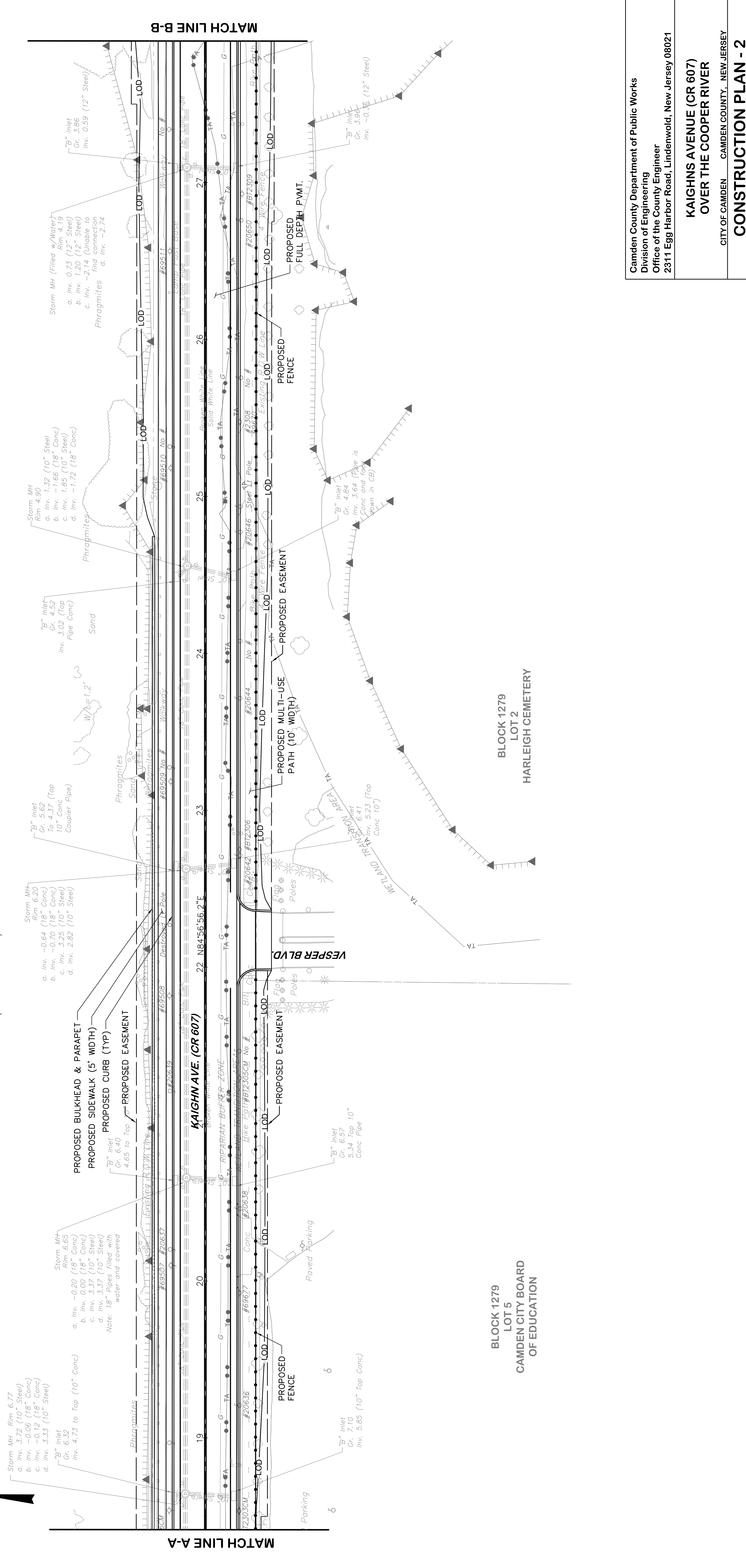
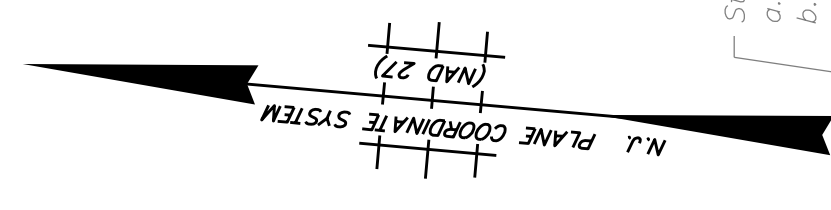
CAMDEN COUNTY

CITY OF CAMDEN

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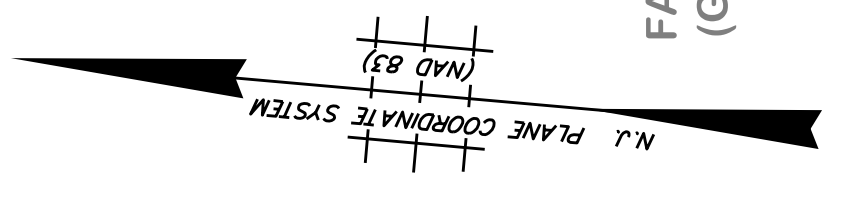
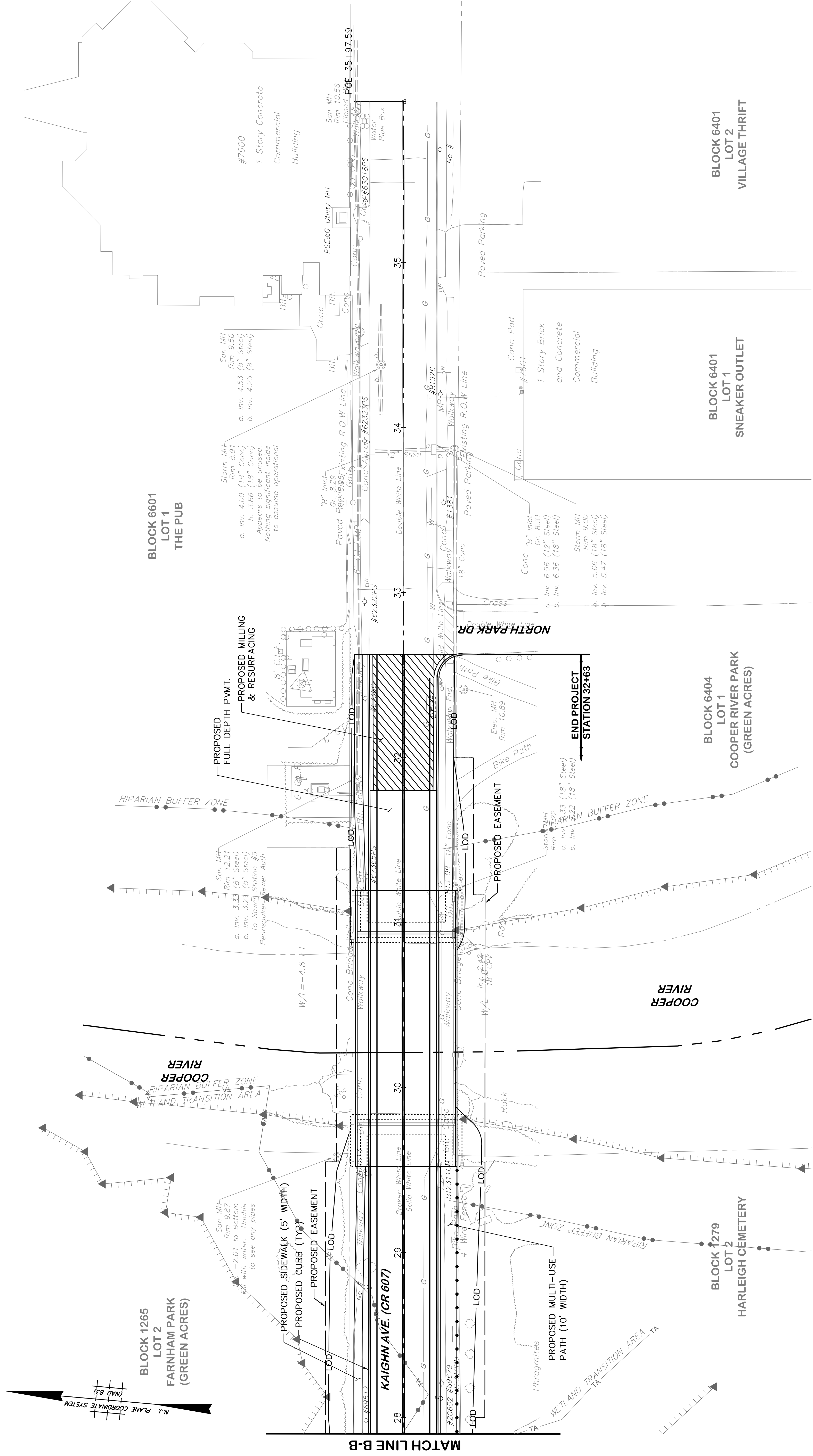
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CAMDEN CITY BOARD
OF EDUCATION

BLOCK 1279
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HARLEIGH CEMETERY



CAMDEN COUNTY

CITY OF CAMDEN



SPENTILLS
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SDATES



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**KAIGHNS AVENUE (CR 607)
 OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

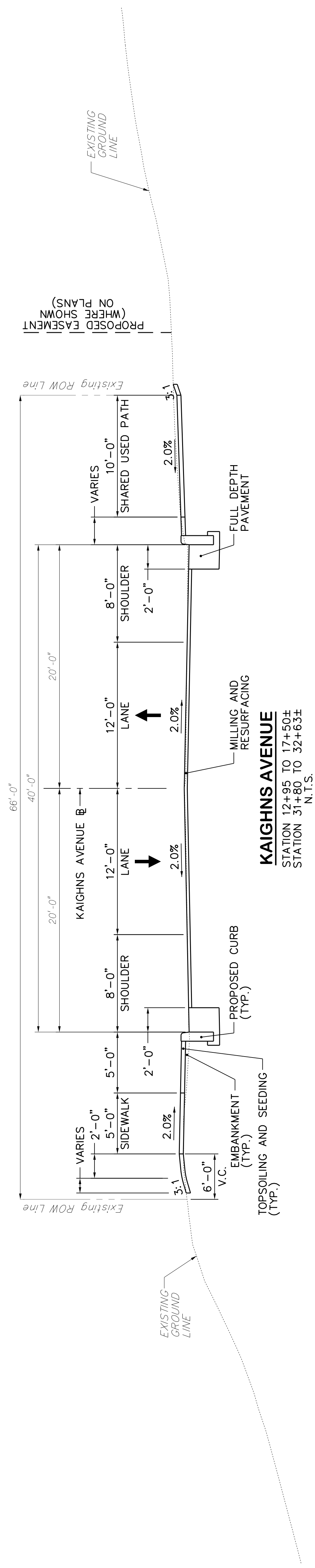
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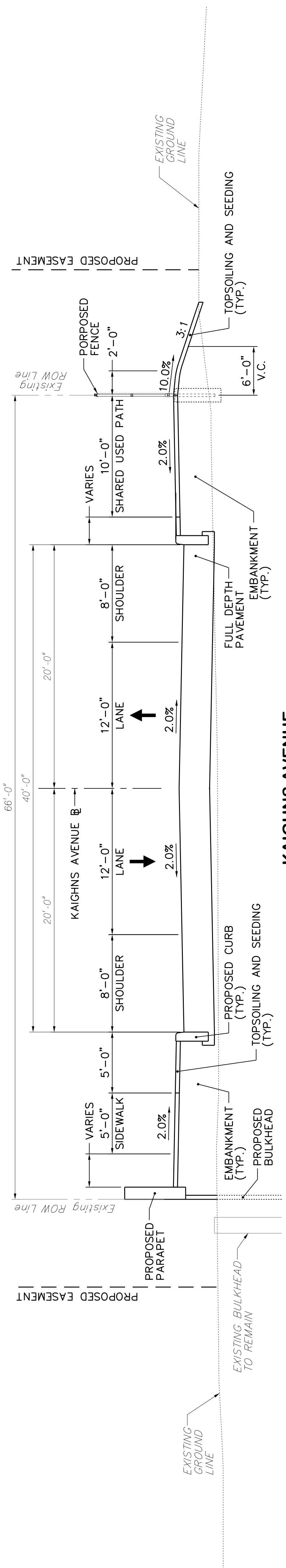
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 PRINCETON, NJ 08540

APPENDIX F

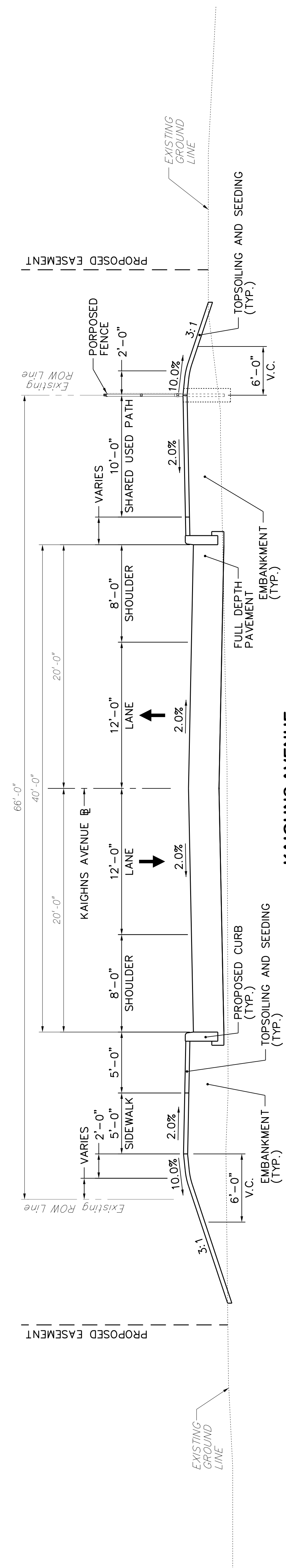
Kaighn Avenue Construction Plan



KAIGHNS AVENUE
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STATION 31+85 TO 32+65±
N.T.S.



KAIGHNS AVENUE
STATION 17+50 TO 24+50±
N.T.S.



KAIGHNS AVENUE
STATION 24+50 TO 29+50±
STATION 31+20 TO 31+80±
N.T.S.

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**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

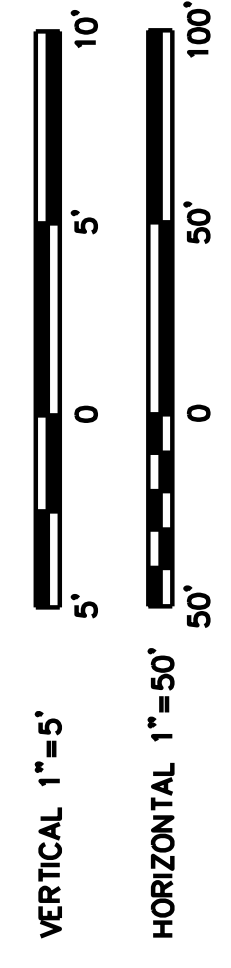
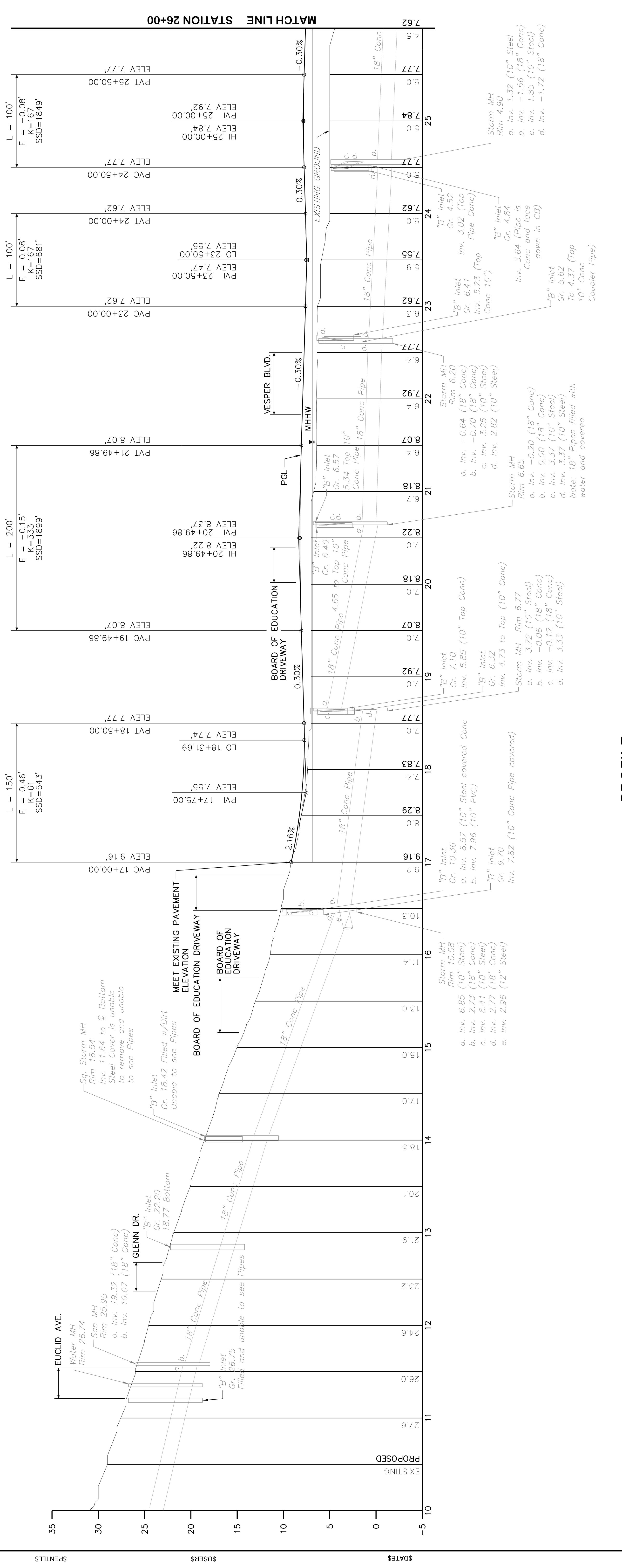
TYPICAL SECTIONS

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IH ENGINEERS, P.C.
103 COLLEGE ROAD EAST
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CAMDEN COUNTY

CITY OF CAMDEN



PROFILE

Camden County Department of Public Works
Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwald, New Jersey 08021

**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

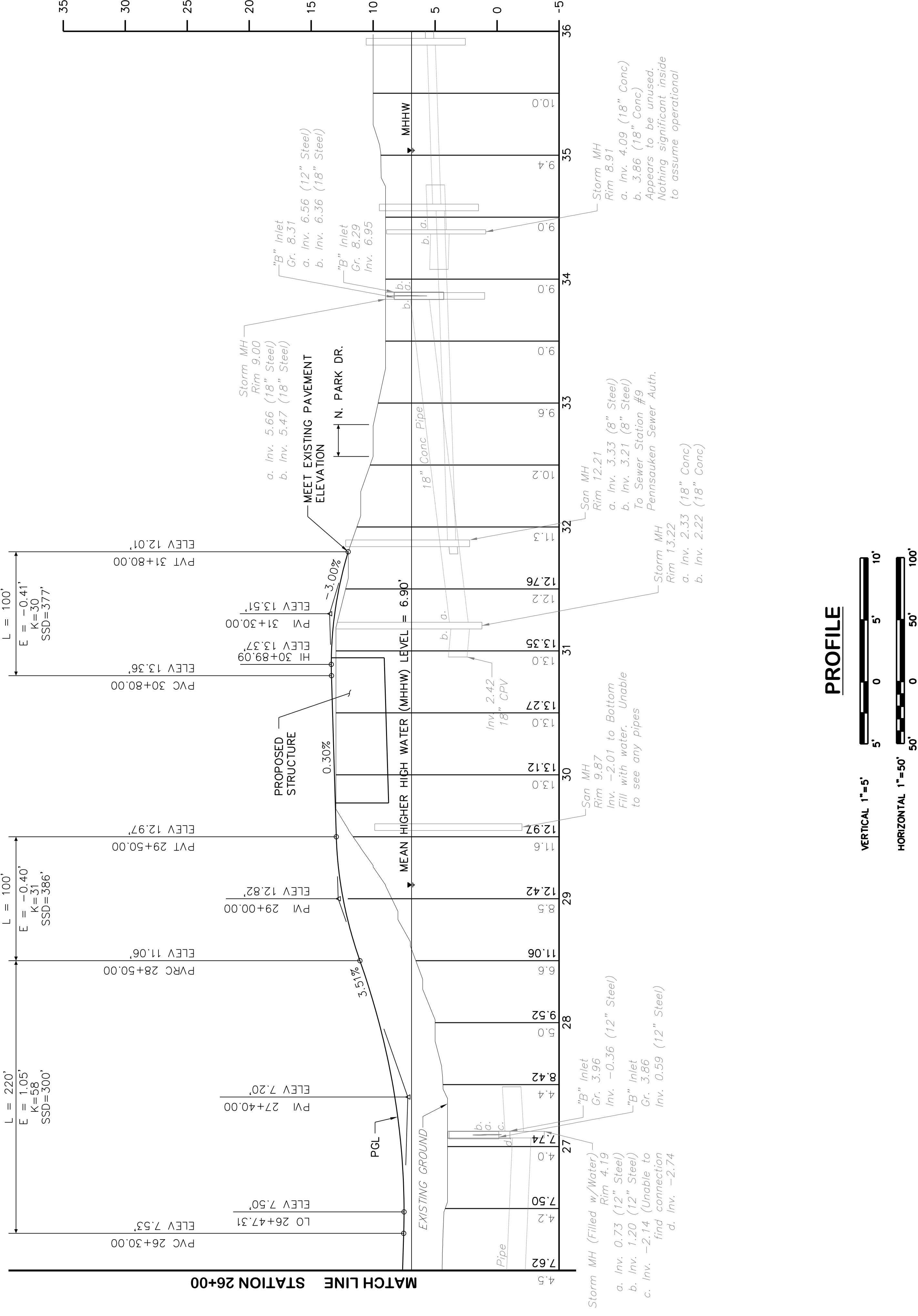
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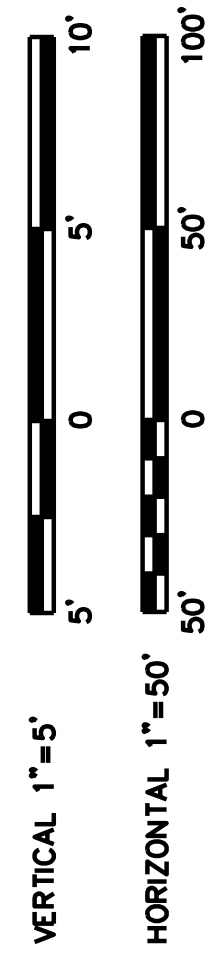
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103 COLLEGE ROAD EAST
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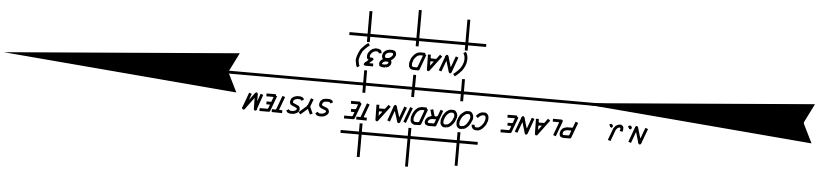
CAMDEN COUNTY

CITY OF CAMDEN



PROFILE



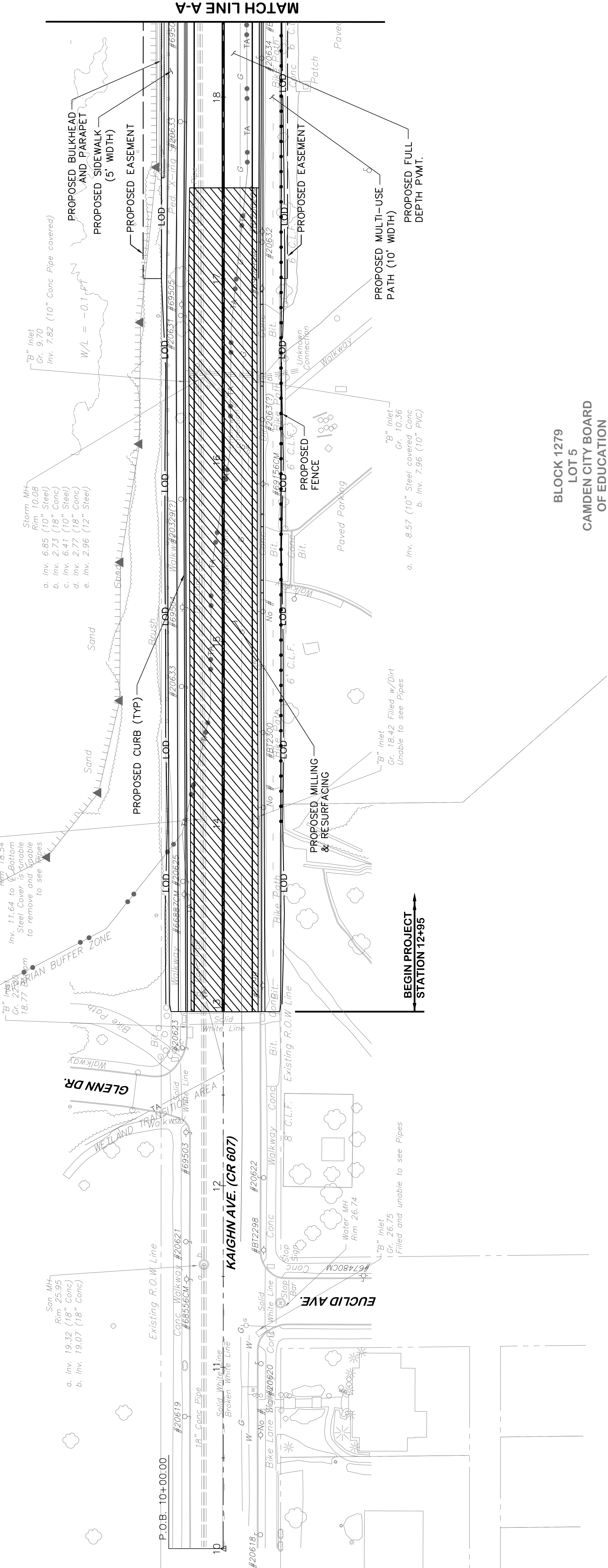


SPENTILLS

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BLOCK 1265
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FARNHAM PARK
(GREEN ACRES)



MATCH LINE A-A

BLOCK 1279
LOT 5
CAMDEN CITY BOARD
OF EDUCATION

LEGEND:

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- W — — — EXISTING WATER LINE
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- ▨ MILLING AND RESURFACING
- LOD — — — LIMIT OF DISTURBANCE
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- RIPARIAN BUFFER ZONE



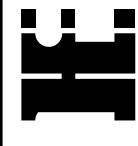
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KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

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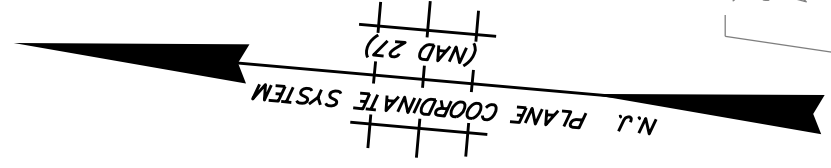
CITY OF CAMDEN

CAMDEN COUNTY

BLOCK 1265
LOT 2
FARNHAM PARK
(GREEN ACRES)

BLOCK 1279
LOT 5
CAMDEN CITY BOARD
OF EDUCATION

BLOCK 1279
LOT 2
HARLEIGH CEMETERY



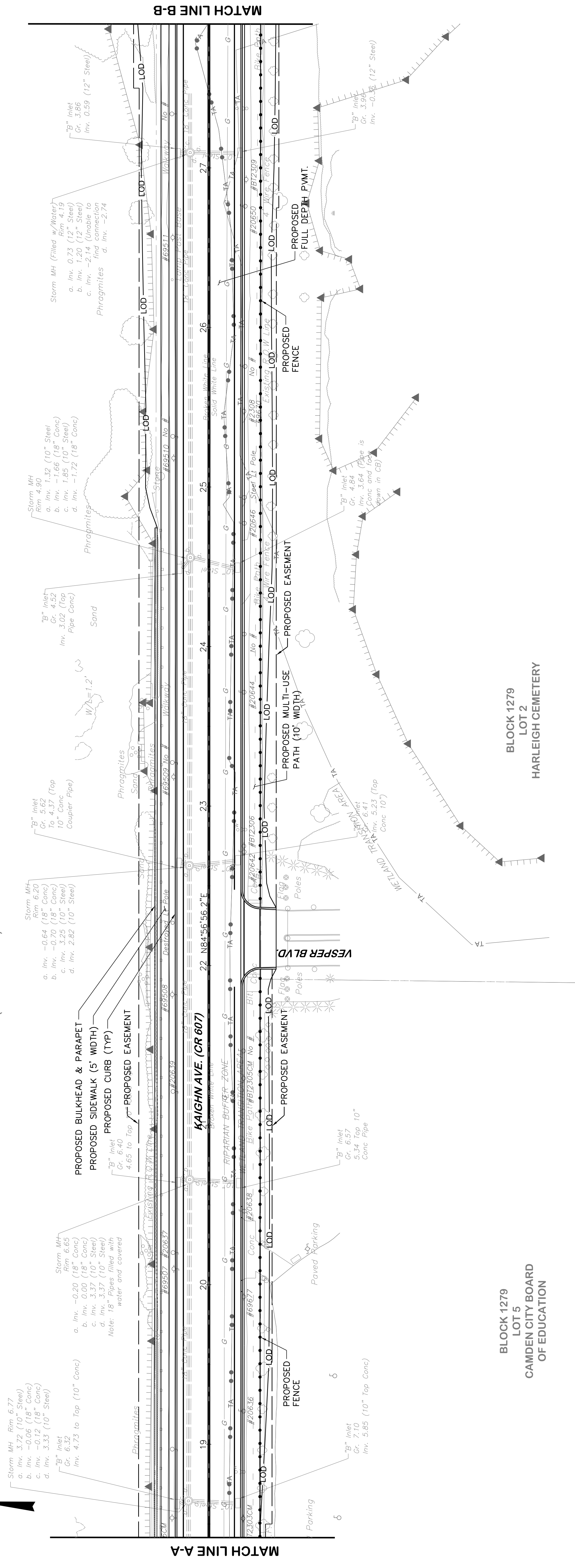
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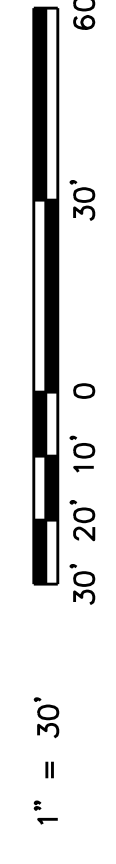
FILES
IH Engineers, P.C.

STATE FEDERAL PROJECT NO.
N.J.



MATCH LINE A-A

MATCH LINE B-B



Camden County Department of Public Works
Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwald, New Jersey 08021

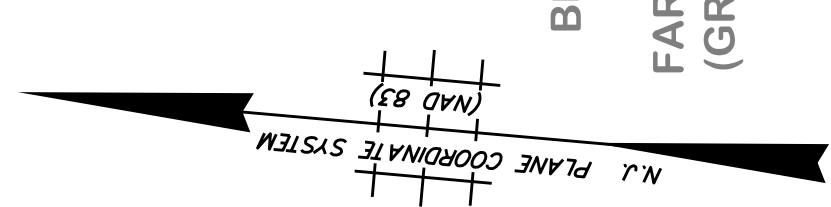
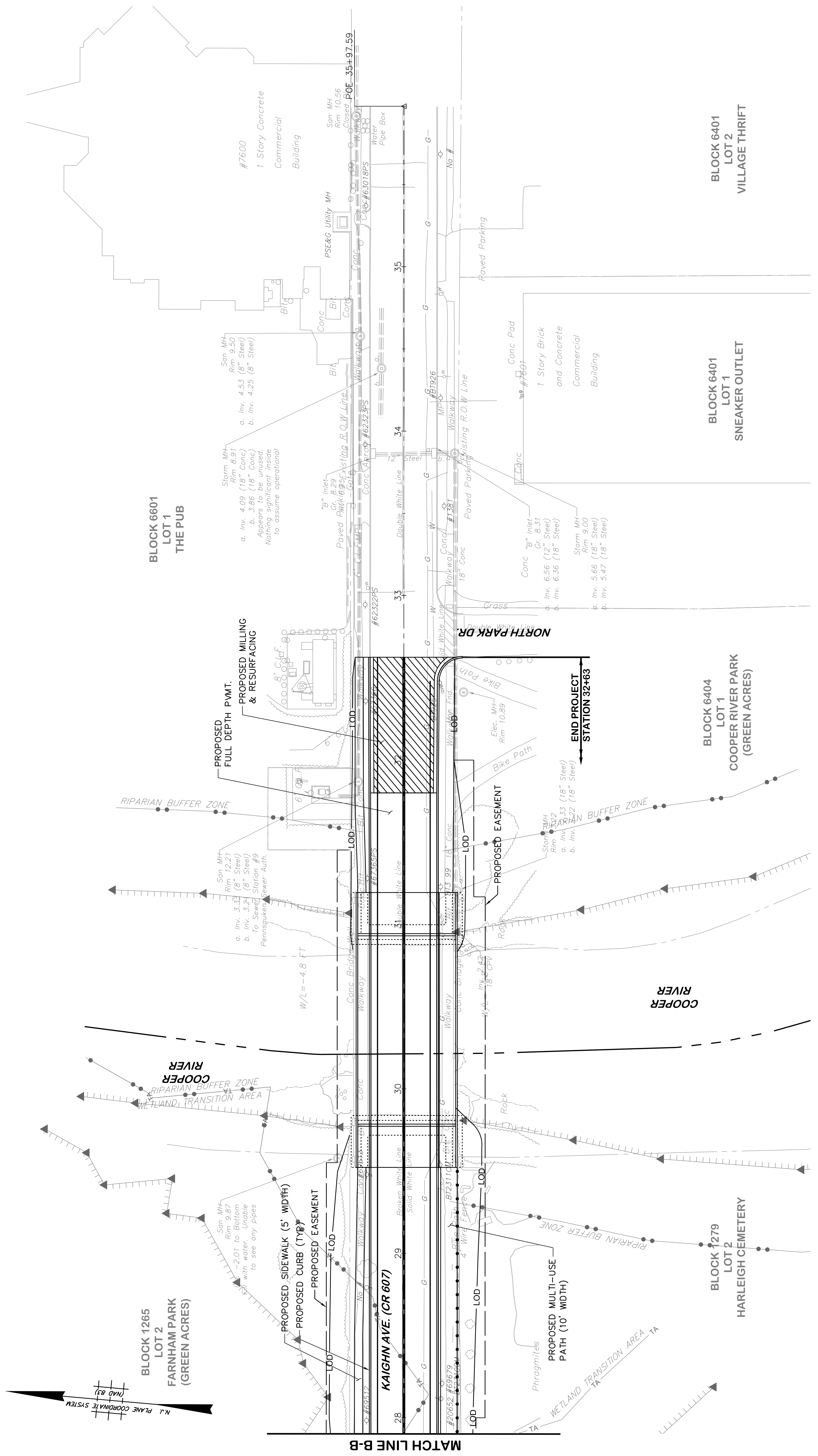
KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY
CONSTRUCTION PLAN - 2

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CAMDEN COUNTY

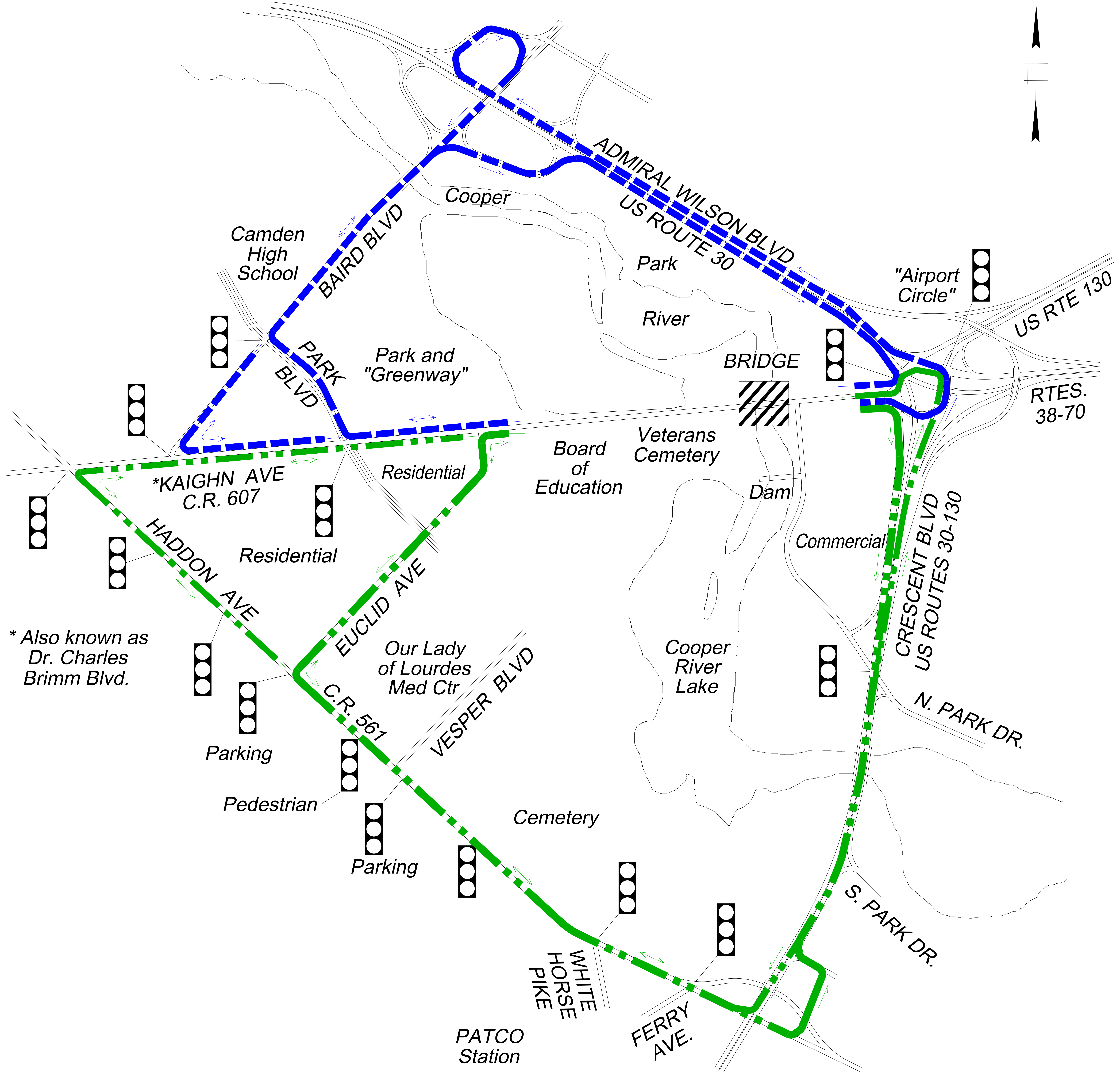
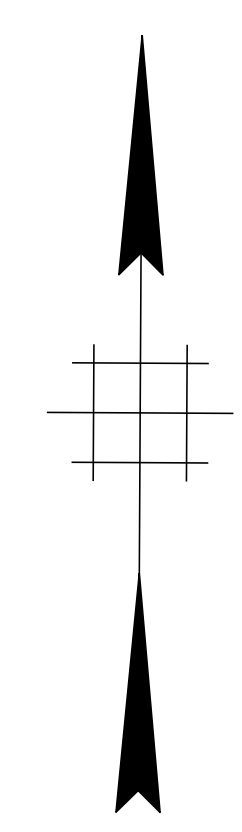
CITY OF CAMDEN



Camden County Department of Public Works Division of Engineering Office of the County Engineer 2311 Egg Harbor Road, Lindenwald, New Jersey 08021
KAIGHNS AVENUE (CR 607) OVER THE COOPER RIVER
CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY
CONSTRUCTION PLAN - 3
Scale: AS SHOWN Sheet No. of Date: 2017
IH ENGINEERS, P.C. 103 COLLEGE ROAD EAST PRINCETON, NJ 08540

Appendix H

Detour Plans



* Also known as Dr. Charles Brimm Blvd.

NORTHERLY DETOUR ROUTE 1.3 to 2.1 miles
 SOUTHERLY DETOUR ROUTE 2.1 to 2.7 miles

Detours are measured between the intersections of Kaighn Avenue with Euclid Avenue and North Park Drive.

Camden County Department of Public Works
 Office of Engineering
 Office of the County Engineer
 2311 Egg Harbor Road, Lindenwold, New Jersey 08021

**KAIGHN AVENUE (CR 607)
 OVER THE COOPER RIVER**
 CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

DETOUR PLAN

IH Engineers, P.C.

Appendix I

Design Communication Report (DCR) “Action Items and Meeting Minutes”

Kishor Shah

From: Kevin Becica <Kevin.Becica@camdencounty.com>
Sent: Friday, March 31, 2017 12:01 PM
To: John Korunow (jkorunow@ihengineers.com); Gary Patterson - IH Engineers (gpatterson@ihengineers.com)
Cc: Tejal Patel; Andrew Levecchia
Subject: FW: Kaighns Avenue Bridge

John and Gary,
Please incorporate the comments below into the CD Report as part of the responses from the PIC. I like the ideas,
Thanks, Kevin

Ms. Kevin Becica, PE, PP, CME, CFM
County Engineer
Camden County Department of Public Works
P:856-566-2971
F:856-566-2988
C:609-868-6243

From: execdirect@cchsnj.org [<mailto:execdirect@cchsnj.org>]
Sent: Friday, March 31, 2017 9:51 AM
To: Kevin Becica <Kevin.Becica@camdencounty.com>
Subject: Kaighns Avenue Bridge

Kevin,

Great meeting you the other evening at our building. Since the meeting I have taken a closer look at the bridge. We have an excellent relationship with the County Freeholders and I do not want us to take a position that would be onerous to the County government. If the project is paid entirely with federal and State funds and does not negatively impact the County, that's a different story. Here are three thoughts for your reaction.

First, there are embedded plaques from the original 2 bridges (1812, 1825) and existing bridge (1889) over the Cooper River in three corners. It is the County's practice to install plaques on new bridges. Can we carry on the tradition and embed the 3 old plaques on 3 corners and the new one (2222) on the fourth ?

Second, the bridge has the look and feel of a park entry bridge. Is it possible to re-create the four pillars in some manner where the plaques are installed and do something more ornate with stamped concrete? It looks like there used to have lights or some type of ornamentation on top, but that is probably too much to ask.

Third, CCHS is a close partner of the Parkside community organization called PBCIP and we just completed a vision plan that includes the placement of welcome signage. The sign may include directions to CCHS and Lourdes Hospital and the kayak entry on south side of bridge. Can a location for a future sign be incorporated before the bridge on right side facing East?

This email does not represent the position of the Camden County Historical Society and its intent is for research purposes only. You can call if that is the best way to respond.

[Jack O'Byrne, PhD](#)

Executive Director
Camden County Historical Society
1900 Park Boulevard
Camden, NJ 08103

p: 856.964.3333
w: cchsnj.org

If ever the time should come when vain and aspiring men shall possess the highest seats in government, our country will stand in need of its experienced patriots to prevent its ruin.
-Samuel Adams, Revolutionary, Brewer (1722-1803)

Click [here](#) to report this email as spam.

The Camden County Historical Society



CAMDEN COUNTY BOARD OF FREEHOLDERS
Concept Development - Kaighns Ave. (CR 607) over the
Cooper River

Bridge Replacement and Flooding Improvements
City of Camden & Pennsauken Township, Camden County
Public Information Center

Wednesday March 29, 2017, 6:00 – 8:00 PM

The Camden County Board of Freeholders, committed to developing transportation improvements that balance transportation needs, safety, the environment, community concerns and cost, will hold a **Public Information Center** to inform local residents, commuters, officials and the business community about the **Concept Development Plan for Kaighns Ave. (CR 607) over the Cooper River Bridge Replacement and Flooding Improvements Project in the City of Camden and Pennsauken Township, Camden County**. You are encouraged to actively participate by providing comments at the meeting, by mail, or by e-mail.

The Meeting

The Public Information Center will be held at the **Camden County Historical Society, located at 1900 Park Blvd., Camden on Wednesday March 29, 2017 at 6:00 pm** in conjunction with the Parkside Business & Community In Partnership (PBCIP) meeting. Following the meeting, representatives of the Delaware Valley Regional Planning Commission (DVRPC), Camden County, and the County's design consultant will remain on hand until **8:00 pm** to answer your questions with regards to this project, please come at a time that is convenient for you.

Project Overview

The purpose of this project is to improve and increase the safety of the Kaighns Ave. (CR 607) for all motorized and non-motorized users by replacing the bridge structure and raising the roadway profile to avoid flooding during regular and high tide events with minimal environmental impacts.

Kaighns Avenue (CR 607) over the Cooper River in Camden City and Pennsauken Township is an undivided roadway with a 12' lane and 8' shoulder in each direction. Kaighns Ave. (CR 607) is classified as an Urban Minor Arterial with a posted speed limit of 25 mph starting from the interchange of Route US 130/Route US 30/Route NJ 38 to Front Street. The total project length is 0.38 miles.

The project is currently in the **Concept Development Phase** and several alternatives are under consideration, the Preliminary Preferred Alternative (PPA) will raise the minimum roadway elevation by 3 to 4 feet to reduce the number of flooding events that result in a roadway closure. The existing two span bridge (built in 1924) is in fair condition and will be replaced by a single span structure with pre-stressed concrete beams and a Cast-In-Place concrete deck. The existing bulkhead will be replaced and extended along the northern side of Kaighns Avenue. A new sidewalk will be constructed along the northern side of the roadway and a new 10'-0" multi-use path will be constructed on the southern side of the roadway with a fence separating the path from the adjacent properties.

Environmental Information

Historic preservation organizations, historical societies, and similar groups in the project area are encouraged to attend. A preliminary cultural resource screening has been completed for the project area. No cultural resources, which would preclude construction, have been identified at this time. A more detailed identification and evaluation will be performed as the project progresses.

Estimated Schedule

Preliminary Engineering Complete: Winter of 2018

Final Design Complete: Winter of 2019

Start of Construction: Spring of 2020

For more information, please contact:

Ms. Kevin Becica

Camden County Engineer

Camden County Department of Public Works

2311 Egg Harbor Road, 08021

Lindenwold, NJ

Phone: (856) 566-2971

Kevin.Becica@camdencounty.com



March 2017 Community Meeting Wednesday March 29, 2017

Name:	Dana Dobson	Name:	Viola Baker
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Phone#:	267-588-9642	Phone#:	856-541-1286 Flyer
Name:	Victor Golding	Name:	DAWN GARCIA - Kiper
Address:	1503 Greenwood Ave	Address:	1865 HARRISON AVE
City & Zip:	Camden 08103	City & Zip:	Camden
Email:	silverhooter@yahoo	Email:	Dawn.Garcia@use.salvationarmy.org
Phone#:	267.307-9378	Phone#:	826-379-4861
Name:	Columbus "Kelly" Franklin	Name:	Jamillah Gray
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City & Zip:	CAMDEN NJ 08103	City & Zip:	CAMDEN NJ 08105
Email:		Email:	
Phone#:	856 964-6705	Phone#:	
Name:	Elizabeth Welch	Name:	Charae Reary
Address:	1331 Princess Ave.	Address:	
City & Zip:	Camden, NJ 08103	City & Zip:	
Email:	Eli2274@Verizon.net	Email:	
Phone#:	856-541-1286 (Flyer)	Phone#:	

Location: Historical Society

Striving for #ParksidePerfection!



March 2017 Community Meeting Wednesday March 29, 2017

Name:	Brendan Lowe	Name:	EDWARD VENABLE
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City & Zip:	CAMDEN, NJ 08103	City & Zip:	CAMDEN, 08103
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Phone#:		Phone#:	856 619-5080
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City & Zip:	Camden, NJ 08103	City & Zip:	
Email:	bsabree1@gmail.com	Email:	Spontek1442@comcast.net
Phone#:		Phone#:	
Name:	Ther Spencer	Name:	Patricia Rodgers
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Email:		Email:	
Phone#:	856-993-3919	Phone#:	856-541-5989
Name:	John Royal	Name:	Ollie Williams
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City & Zip:	Camden NJ 08103	City & Zip:	Camden, NJ
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Phone#:	609 929 3812	Phone#:	856 964-1324

Location: Historical Society

Striving for #ParksidePerfection!



March 2017 Community Meeting Wednesday March 29, 2017

Name: Marian E. Jones
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Name: Jesse Buert, DVRPC
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Email: jbuert@dvrpc.org
Phone#: _____

Name: Gary Patterson
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City & Zip: Pineclan, NJ
Email: GPatterson@ibengineers.com
Phone#: _____

Name: John Korunow
Address: 103 College Rd.
City & Zip: Pineclan, NJ
Email: jkorunow@ibengineers.com
Phone#: _____

Name: Jack O'Byrne
Address: CC HS
City & Zip: _____
Email: _____
Phone#: _____

Name: Ranisha Dickerson
Address: Old Buird
City & Zip: Camden
Email: _____
Phone#: 856.217.0350

Name: Frank Erby
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City & Zip: Camden NJ
Email: _____
Phone#: 856-54-8443

Name: Olivia Glenn
Address: 800 Cooper St. SE201C
City & Zip: Camden 08102
Email: oliviag@niconsevation.org
Phone#: (856) 469-0494



March 2017 Community Meeting Wednesday March 29, 2017

Name: Ronald Thomas
Address: 1000 Engine house
City & Zip: 08103
Email:
Phone#:

Name: Michele Babin
Address: 1471 Barfield
City & Zip: Camden NJ
Email:
Phone#:

Name: Cress Coleman-Ali
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Name: Heidi Greene
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City & Zip:
Email:
Phone#: 856-295-2611

Name: Kevin Barfield
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Phone#: 856-214-5911

Name: John Boyle
Address: ~~423~~ 1500 Walnut St 57 576-1107
City & Zip: Phila PA 19102
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Phone#: 215-242-4923 x302



March 2017 Community Meeting Wednesday March 29, 2017

Name: Naomi Scott
Address: 1471 Kenwood Ave
City & Zip: Camden, NJ 08103
Email: naomiscott72ge@yahoo
Phone#: 856-426-6619

Name: _____
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

Name: Stanley Smith
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

Name: _____
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

Name: RASHAN HOKINSBY
Address: 1023 Kenwood Ave
City & Zip: Camden, NJ 08103
Email: VISIONARYENT.ROTEGMAIL.COM
Phone#: 856-246-5100

Name: _____
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

Name: _____
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

Name: _____
Address: _____
City & Zip: _____
Email: _____
Phone#: _____

PUBLIC INFORMATION CENTER
LOCAL CONCEPT DEVELOPMENT STUDY
Kaighns Avenue (CR 607) over the Cooper River
City of Camden, Camden County
March 29, 2017

Summary of Comments Received

- 1. Concerned that the sediment keeps rising along Cooper River. Sediments need to be dredged out in order to prevent recurring issue. The water table keeps rising over the years and will continue rising until something is done.**
- 2. Plan looks very good, I would like to see the scope of the project widened slightly to improve the crosswalk to Farnham Park and a new crossing to accommodate the proposed Pub trail.**
- 3. Work on ensuring safe intersection design on Kaighns Ave.**
- 4. Camden High project needs its own meetings.**
- 5. There are embedded plaques from the original 2 bridges (1812, 1825) and existing bridge (1889) over the Cooper River in three corners. It is the County's practice to install plaques on new bridges. Can we carry on the tradition and embed the 3 old plaques on 3 corners and the new one on the fourth? (Jack O'Byrne – Executive Director Camden County Historical Society)**
- 6. The bridge has the look and feel of a park entry bridge. Is it possible to re-create the four pillars in some manner where the plaques are installed and do something more ornate with stamped concrete? It looks like there used to have lights or some type of ornamentation on top, but that is probably too much to ask. (Jack O'Byrne – Executive Director Camden County Historical Society)**
- 7. CCHS is a close partner of the Parkside community organization called PBCIP and we just completed a vision plan that includes the placement of welcome signage. The sign may include directions to CCHS and Lourdes Hospital and the kayak entry on south side of bridge. Can a location for a future sign be incorporated before the bridge on right side facing east? (Jack O'Byrne – Executive Director Camden County Historical Society)**

Design Communication Report

1. **June 7, 2016** - Investigated the possibility of setting the abutment back far enough to accommodate a shared use path that would pass under the structure on the Pennsauken side of the bridge.

The investigation showed that the profile could not be elevated enough to accommodate the proposed trail under the bridge without significant impacts to adjacent properties and without greatly impacting North Park Drive.

2. **June 7, 2016** - The structure was designed with a 12' shoulder on one side and a 10' shoulder (overbuild) in order to complete construction of the bridge in two stages whilst still maintaining traffic.

Based on County comments, other staging alternatives were studied to eliminate the bridge widening and to maintain two lanes of the traffic at all times during construction. The result was three stages of construction.

3. **August 17, 2016** - The limits of the potential landscaped median were discussed and it was agreed that the median would begin on the west side of the bridge and extend to the park entrance.

December 6, 2016 – The County informed the team that the landscaped median alternative will no longer be pursued. It has been ruled out due to safety reasons which became an issue at another county location in Cherry Hill as the reduced roadway width made it difficult for emergency vehicles.

4. **March 9, 2017** – Meeting with the Mayor of the City of Camden and her staff.

Camden City officials requested that a five foot (5') striped bicycle lane be included on the roadway in both directions, in addition to the already proposed multi-use path. This lane would allow more experienced cyclists to connect to the regional bike network while bypassing the more casual bikers and pedestrians who favor the multi-use path.

5. **March 15, 2017** – Meeting with the NJDOT Subject Matter Experts.

- *SME's suggested that the barrier between shoulder and multi-use path could be eliminated due to the 25 MPH speed limit. Speed limit signs should be added to the plans.*
- *Due to the scour issue, the life cycle cost analysis might be used to compare the bridge replacement alternative and rehabilitation alternative in order to make a case for federal funding.*
- *The cost estimate should be updated to include "Excavation of Regulated Material" and "Disposal of Regulated Material", based on past County construction experience.*

**Meeting Minutes – NJDOT SME Meeting
March 15, 2017 – 10:00 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey**

To: All Attendees

Cc:

Attendees	Organization	Telephone	Email
------------------	---------------------	------------------	--------------

See attached sign-in sheet

The meeting was held at NJDOT Conference Room 4B in Trenton. A meeting agenda, project fact sheet, conceptual plans, and an alternatives matrix were distributed to all attendees. After introductions, the meeting began with John Korunow giving an overview of the project:

- **Existing conditions** – noted that Kaighn Ave. is closed 15-18 times per year due to flooding
- **Existing bridge** – superstructure in fair condition due to completely spalled bottom flange encasements and girder section loss. Bridge bearings also have moderate to severe rust at the pier. However, the main issue is the severe scour at both the pier and abutments. Despite this the sufficiency rating remains over 80.0.
- **Existing roadway, sidewalk, and multi-use path** – flooding leads to sidewalk and multi-use path being washed out and in disrepair. Has also led to ice wedging in the winter and undermining of the roadway.
- **New bulkhead and parapet** – a new bulkhead will be constructed with an “open” parapet mounted on top. Open parapet will allow water to pass through when the water level rises above the roadway level thereby preventing backwater flooding.
- **Proposed profile** – the minimum roadway profile will be set at 7.5’ which will prevent the majority of road closings. Bottom of proposed bridge will be at the same level as the existing bridge.
- **Impacts to adjacent properties** – slope easements will be necessary but there will be no impacts to the parking lots operationally.
- **Utility relocations** – Change in roadway elevation will require resetting utilities.
- **Proposed bridge alternatives** – discussed alternatives matrix and indicated that a single span with pre-stressed concrete box beam is the preferred alternative.
- **Proposed detour** – discussed the merits of performing construction using a detour in terms of time and cost savings.

A general discussion then took place and the following items are noted:

NAME	Company	Email	Phone
Frank Yao	IH	Fyao@ihengineers.com	609-524-6412
Kevin Becca	CAMDEN CNTY	Kevin.Becca@camdencounty.com	856-566-2971
Tejal Patel	Camden County	tejal.patel@camdencounty.com	856-566-2938
BERT GONZALEZ	NJDOT LOCAL RD DIST. 4	NEWBERRY.GONZALEZ@DOT.NJ.GOV	856-986-6712
Gary Patterson	IH	Gpatterson@ihengineers.com	609-734-8400
Robert Abitz, Jr	NJDOT Value Solutions	Robert.Abitz@dot.nj.gov	609.530.5515
Al Vingilio	NJDOT STRUCT.	al.vingilio@dot.nj.gov	(609) 530-5594
Chirag B. Patel	NJDOT DER	Chirag B. Patel@dot.nj.gov	(609) 530-2711
Caroline Birsner	NJDOT DER	caroline.birsner@dot.nj.gov	(609) 530-2365
Lauren Rappley	NJDOT-ENVIRON.	lauren.rappley@dot.nj.gov	(609) 530-2990
Andrew Levecchia	Camden County	andrewl@camdencount.,.com	856- 22 ⁵⁶⁶ -3120
JOHN COSCIA JR	DVRPC	JCOSCIAJR@DVRPC.ORG	215-238-2859
John Korunow	IH	JKORUNOW@IHENGINEERS.COM	609-524-6400

KAIGHN AVE - CONCEPT DEVELOPMENT
MEETING WITH NJDOT SME'S
MARCH 15, 2017

Meeting Minutes – Camden City Officials Meeting
March 9, 2017 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc:

Attendees:

Dana Redd – Mayor, City of Camden
Novella Hinson – Mayors Chief of Staff, City of Camden
Robert Corrales – Business Administrator, City of Camden
Kevin Sheehan – City of Camden
Anthony Perno – Executive Director, Cooper’s Ferry Partnership
Kevin Becica – Camden County Engineer
Andrew Levecchia – Camden County Planner
John Korunow – IH Engineers
Gary Patterson – IH Engineers

The meeting was held at the Waterfront Technology Center, 200 Federal Street, Camden, NJ. A meeting agenda, project fact sheet, conceptual plans, and an alternatives matrix were distributed to all attendees. After introductions, the meeting began with John Korunow giving an overview of the project:

- **Existing conditions** – noted that Kaighn Ave. is closed 15-18 times per year due to flooding
- **Existing bridge** – superstructure in fair condition due to completely spalled bottom flange encasements and girder section loss. Bridge bearings also have moderate to severe rust at the pier. However, the main issue is the severe scour at both the pier and abutments. Despite this the sufficiency rating remains over 80.0.
- **Existing roadway, sidewalk, and multi-use path** – flooding leads to sidewalk and multi-use path being washed out and in disrepair. Has also led to ice wedging in the winter and undermining of the roadway.
- **New bulkhead and parapet** – a new bulkhead will be constructed with an “open” parapet mounted on top. Open parapet will allow water to pass through when the water level rises above the roadway level thereby preventing backwater flooding.
- **Proposed profile** – the minimum roadway profile will be set at 7.5’ which will prevent the majority of road closings. Bottom of proposed bridge will be at the same level as the existing bridge.
- **Impacts to adjacent properties** – slope easements will be necessary but there will be no impacts to the parking lots operationally.
- **Utility relocations** – Change in roadway elevation will require resetting utilities.

- **Proposed bridge alternatives** – discussed alternatives matrix and indicated that a single span with pre-stressed concrete box beam is the preferred alternative.
- **Proposed detour** – discussed the merits of performing construction using a detour in terms of time and cost savings.

A general discussion then took place and the following items are noted:

- Camden City officials requested that a striped bicycle lane be included on the roadway, in addition to the already proposed sidewalk and multi-use path. This lane would allow more experienced cyclists to connect to the regional bike network while bypassing the more casual bikers and pedestrians who favor the multi-use path and/or sidewalk.
- Mayor Redd advised that coordination of the construction staging of this project and the Camden High School project should be a top priority.
- It was explained that Federal funding would be used for the roadway portion of the project to alleviate the persistent flooding while County funding is anticipated for the bridge replacement.
- Novella Hinson requested that a list of stakeholders be provided to the Mayor's office. Andrew Levecchia is to provide.

- For adjacent box beams options, UHPC connection shall be considered instead of post-tension ties. 8 inch minimum structural slab shall be used.
- Staged construction is not preferred and should not be included in the CD report.
- Accelerated Bridge Construction (ABC) may be considered. (Prefabricated Abutment or Wingwalls)
- Al Virgilio suggested that the barrier between shoulder and multi-use path could be eliminated due to the 25 MPH speed limit. Speed limit signs should be added to the plans.
- Coordinate utility companies during both bridge construction and roadway construction to reduce the construction time.
- Due to the scour issue, the life cycle cost analysis might be used to compare the bridge replacement alternative and rehabilitation alternative in order to make a case for federal funding.
- Question is asked why a painted bike lane would be proposed in addition to a multi-use path. It was explained that it was at the request of the Mayor and that the two bike paths would serve different types of users. Painted bike lane on the road serving more serious bikers, while the multi-use path would serve the more casual biker.
- Kevin Becica advises that the cost estimate should be updated to include "Excavation of Regulated Material" and "Disposal of Regulated Material", based on past County construction experience.
- NJDOT advised that the Department holds monthly interagency meetings if the County is interested in discussing the project further.
- A resolution of support will be requested from the City of Camden and Township of Pennsauken and these will be included in the CD report.

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	IH is currently preparing detour alternative and cost comparison.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	IH is in the process of preparing a rehab alternative and will then incorporate it into the CD report.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	IH provided a set of color plans and typical section on 11/29/16 so that KB can have a discussion with county administration with regards to the proposed center median. During 12/6/16 conference call, Kevin Becica informed the team that the landscaped median alternative will no longer be pursued. It has been ruled out due to safety reasons which became an issue at another county location in Cherry Hill as the reduced roadway width make it difficult for emergency vehicles.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	IH performed traffic counts and is using this information to confirm that the proposed detour will function adequately.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.

ACTION ITEMS

13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	Completed.
15. Provide detail for parapet attachment to bulkhead.	Completed
16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	Completed.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	IH has obtained utility information from various sources and will identify potential conflicts and include in CD report.
19. Coordinate Local Officials Briefing.	Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	IH is revising.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	IH has completed the roadway cost estimate and will incorporate this into the alternatives matrix.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress. IH provided a project location map on 11/28/16 to assist John in his efforts to set up a meeting.
24. John Korunow to contact Al Virgilio (NJDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Buchart Horn (prepared inspection report) requesting rating calculations.	FY made initial attempts to contact Buchart Horn regarding the bridge ratings but they were not responsive. KB sent an e-mail to NJDOT and Buchart Horn on 11/25/16 requesting that they review the load and sufficiency ratings for the Kaighn Ave. bridge. NJDOT will not add load rating to this cycle because it would require chipping away of concrete in order to obtain.

ACTION ITEMS

26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.	In progress. This meeting has been scheduled for March 29, 2017.
27. KB will send dates of scour repairs and other related information (scour watch list, WFD permit, plans and specs for priority bridge repairs) for IH use in preparing the CD report.	KB sent e-mail on 12/6/16 with this information.
28. CD report will detail the bridge ratings and ability to use federal money. Report will recommend two contracts. One for the roadway to address the flooding and another to replace the bridge.	IH will incorporate this information into the CD report.
29. IH will provide the revised schedule and executive summary to John Coscia with cc to Kevin, Tejal and Andrew by January 13, 2017.	Completed
30. IH will provide Rehabilitation Plans and Details, and the revised cost estimate to Kevin and Tejal with cc to John and Andrew by January 11, 2017.	Completed
31. Kevin to send review comments on draft executive summary.	Comments were sent. IH will revise and resubmit. Resubmitted on 2/15/17.
32. Andrew to coordinate meeting with Mayor of Camden.	
33. IH to send Table of Contents for CD report to County/DVRPC.	Sent on 2/15/17
34. IH to send utility tracking spreadsheet to County/DVRPC.	Sent on 2/15/17

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	IH is currently preparing detour alternative and cost comparison.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	IH is in the process of preparing a rehab alternative and will then incorporate it into the CD report.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	IH provided a set of color plans and typical section on 11/29/16 so that KB can have a discussion with county administration with regards to the proposed center median. During 12/6/16 conference call, Kevin Becica informed the team that the landscaped median alternative will no longer be pursued. It has been ruled out due to safety reasons which became an issue at another county location in Cherry Hill as the reduced roadway width make it difficult for emergency vehicles.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	IH performed traffic counts and is using this information to confirm that the proposed detour will function adequately.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.

ACTION ITEMS

13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	Completed.
15. Provide detail for parapet attachment to bulkhead.	Completed
16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	Completed.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	IH has obtained utility information from various sources and will identify potential conflicts and include in CD report.
19. Coordinate Local Officials Briefing.	Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	IH is revising.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	IH has completed the roadway cost estimate and will incorporate this into the alternatives matrix.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress. IH provided a project location map on 11/28/16 to assist John in his efforts to set up a meeting.
24. John Korunow to contact Al Virgilio (NJDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Buchart Horn (prepared inspection report) requesting rating calculations.	FY made initial attempts to contact Buchart Horn regarding the bridge ratings but they were not responsive. KB sent an e-mail to NJDOT and Buchart Horn on 11/25/16 requesting that they review the load and sufficiency ratings for the Kaighn Ave. bridge. NJDOT will not add load rating to this cycle because it would require chipping away of concrete in order to obtain.

ACTION ITEMS

26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.	In progress. This meeting has been scheduled for March 29, 2017.
27. KB will send dates of scour repairs and other related information (scour watch list, WFD permit, plans and specs for priority bridge repairs) for IH use in preparing the CD report.	KB sent e-mail on 12/6/16 with this information.
28. CD report will detail the bridge ratings and ability to use federal money. Report will recommend two contracts. One for the roadway to address the flooding and another to replace the bridge.	IH will incorporate this information into the CD report.
29. IH will provide the revised schedule and executive summary to John Coscia with cc to Kevin, Tejal and Andrew by January 13, 2017.	Completed
30. IH will provide Rehabilitation Plans and Details, and the revised cost estimate to Kevin and Tejal with cc to John and Andrew by January 11, 2017.	Completed
31. Kevin to send review comments on draft executive summary.	Comments were sent. IH will revise and resubmit.

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	IH is currently preparing detour alternative and cost comparison.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	IH is in the process of preparing a rehab alternative and will then incorporate it into the CD report.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	IH provided a set of color plans and typical section on 11/29/16 so that KB can have a discussion with county administration with regards to the proposed center median. During 12/6/16 conference call, Kevin Becica informed the team that the landscaped median alternative will no longer be pursued. It has been ruled out due to safety reasons which became an issue at another county location in Cherry Hill as the reduced roadway width make it difficult for emergency vehicles.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	IH performed traffic counts and is using this information to confirm that the proposed detour will function adequately.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.

ACTION ITEMS

13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	Completed.
15. Provide detail for parapet attachment to bulkhead.	Completed
16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	Completed.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	IH has obtained utility information from various sources and will identify potential conflicts and include in CD report.
19. Coordinate Local Officials Briefing.	Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	IH is revising.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	IH has completed the roadway cost estimate and will incorporate this into the alternatives matrix.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress. IH provided a project location map on 11/28/16 to assist John in his efforts to set up a meeting.
24. John Korunow to contact Al Virgilio (NJDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Bucharthorn (prepared inspection report) requesting rating calculations.	FY made initial attempts to contact Bucharthorn regarding the bridge ratings but they were not responsive. KB sent an e-mail to NJDOT and Bucharthorn on 11/25/16 requesting that they review the load and sufficiency ratings for the Kaighn Ave. bridge. NJDOT will not add load rating to this cycle because it would require chipping away of concrete in order to obtain.

ACTION ITEMS

26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.	In progress. This meeting will most likely be held after the winter (March, 2017)
27. KB will send dates of scour repairs and other related information (scour watch list, WFD permit, plans and specs for priority bridge repairs) for IH use in preparing the CD report.	KB sent e-mail on 12/6/16 with this information.
28. CD report will detail the bridge ratings and ability to use federal money. Report will recommend two contracts. One for the roadway to address the flooding and another to replace the bridge.	IH will incorporate this information into the CD report.
29. IH will provide the revised schedule and executive summary to John Coscia with cc to Kevin, Tejal and Andrew by January 13, 2017.	
30. IH will provide Rehabilitation Plans and Details, and the revised cost estimate to Kevin and Tejal with cc to John and Andrew by January 11, 2017.	

**Meeting Minutes – Conference Call
December 20, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey**

To: All Attendees

Cc: Gary Patterson (IH); Natalie Linnik (IH); Andrew Levecchia (Camden County)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com

Frank Yao began the meeting discussing the cost estimate for the Bridge Rehabilitation Alternative. He stated that the direct cost is roughly \$300,000.00. Kevin Becica felt that the cost seemed low and suggested separating some of the items for clarity such as the Parapets from the Barrier (in front of the through girders). John stated that IH would re-examine the cost estimate and include costs related to mobilization, MPT, contingencies.

John Coscia asked IH to review the schedule to determine if we still anticipate completing the project by the end of May 2017. He also asked if we would provide an executive summary explaining the reasons for the project to be split into 2 contracts, i.e. federal funding for the roadway flooding and county funding for the bridge replacement. He asked that this information be provided by January 13, 2017.

Kevin asked that all are provided with the Structural Rehabilitation Plans and Details, and the revised cost estimate be provided by January 11, 2017.

Action Items:

1. IH will provide the revised schedule and executive summary to John Coscia with cc to Kevin, Tejal and Andrew by January 13, 2017..
2. IH will provide Rehabilitation Plans and Details, and the revised cost estimate to Kevin and Tejal with cc to John and Andrew by January 11, 2017.

If the writer does not receive any comments on the minutes by (January 5, 2015), it will be understood that the content of this memo is acceptable to all attendees.

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	IH is currently preparing detour alternative and cost comparison.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	IH is in the process of preparing a rehab alternative and will then incorporate it into the CD report.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	IH provided a set of color plans and typical section on 11/29/16 so that KB can have a discussion with county administration with regards to the proposed center median. During 12/6/16 conference call, Kevin Becica informed the team that the landscaped median alternative will no longer be pursued. It has been ruled out due to safety reasons which became an issue at another county location in Cherry Hill as the reduced roadway width make it difficult for emergency vehicles.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	IH performed traffic counts and is using this information to confirm that the proposed detour will function adequately.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.

ACTION ITEMS

13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	Completed.
15. Provide detail for parapet attachment to bulkhead.	Completed
16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	Completed.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	IH has obtained utility information from various sources and will identify potential conflicts and include in CD report.
19. Coordinate Local Officials Briefing.	In progress. Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	IH is revising.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	IH has completed the roadway cost estimate and will incorporate this into the alternatives matrix.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress. IH provided a project location map on 11/28/16 to assist John in his efforts to set up a meeting.
24. John Korunow to contact Al Virgilio (NJDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Bucharthorn (prepared inspection report) requesting rating calculations.	FY made initial attempts to contact Bucharthorn regarding the bridge ratings but they were not responsive. KB sent an e-mail to NJDOT and Bucharthorn on 11/25/16 requesting that they review the load and sufficiency ratings for the Kaighn Ave. bridge. NJDOT will not add load rating to this cycle because it would require chipping away of concrete in order to obtain.

ACTION ITEMS

<p>26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.</p>	<p>In progress. This meeting will most likely be held after the winter (March, 2017)</p>
<p>27. KB will send dates of scour repairs and other related information (scour watch list, WFD permit, plans and specs for priority bridge repairs) for IH use in preparing the CD report.</p>	<p>KB sent e-mail on 12/6/16 with this information.</p>
<p>28. CD report will detail the bridge ratings and ability to use federal money. Report will recommend two contracts. One for the roadway to address the flooding and another to replace the bridge.</p>	<p>IH will incorporate this information into the CD report.</p>

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	IH is currently preparing detour alternative and cost comparison.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	IH is in the process of preparing a rehab alternative and will then incorporate it into the CD report.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	IH provided a set of color plans and typical section on 11/29/16 so that KB can have a discussion with county administration with regards to the proposed center median.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	IH performed traffic counts and is using this information to confirm that the proposed detour will function adequately.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.
13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	Completed.
15. Provide detail for parapet attachment to bulkhead.	Completed

ACTION ITEMS

16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	Completed.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	IH has obtained utility information from various sources and will identify potential conflicts and include in CD report.
19. Coordinate Local Officials Briefing.	In progress. Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	IH is revising.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	IH has completed the roadway cost estimate and next will add this to the alternatives matrix.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress. IH provided a project location map on 11/28/16 to assist John in his efforts to set up a meeting.
24. John Korunow to contact Al Virgilio (NJDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Buchart Horn (prepared inspection report) requesting rating calculations.	FY made initial attempts to contact Buchart Horn regarding the bridge ratings but they were not responsive. KB sent an e-mail to NJDOT and Buchart Horn on 11/25/16 requesting that they review the load and sufficiency ratings for the Kaighn Ave. bridge.
26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.	In progress.

**Meeting Minutes – Conference Call
NOVEMBER 22, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey**

To: All Attendees

Cc: Gary Patterson (IH); Andrew Levecchia (Camden County)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com

The “Action Items” list was then discussed:

- Item No. 24 - Frank Yao stated that the bridge load ratings were established in 1995. John Korunow stated that in his discussion with Albert Virgilio from the NJDOT, a bridge sufficiency rating of 83.4 is unusual for a bridge that is nearly 100 years old.
- Item No. 25 - Frank Yao is still waiting requested rating calculations (based on the prepared inspection report) from Chis Dwyer from Buchart Horn.

Kevin Becica is waiting for the requested 2nd Cycle Bridge Report dated March 25, 2015. IH will compare the Bridge Reports in terms of the Structural Evaluation rating.

John Coscia announced that he contacted the officials stating that the project will be funded in 2 parts. The bridge will be County funds and the roadway will be federal funds.

John Coscia requested the project description and goals to show to officials.

IH is waiting for Camden County to review the landscape (8 feet) island to determine desirable length or removal altogether.

Action Items:

1. IH will provide the project description and goals to John Coscia for the officials.
2. IH will provide to Kevin Becica requested plans with the proposed colored landscape island.
3. Camden County will review the proposed landscape island and determine desirable length.
4. Kevin Becica will try to arrange a meeting for Frank Yao with Buchart Horn.

If the writer does not receive any comments on the minutes by (January 5, 2015), it will be understood that the content of this memo is acceptable to all attendees.

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom elevation of the proposed structure will be the same as the existing structure.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report. This will include a cost comparison of the staging and detour alternatives.	In progress.
7. IH to present three structural alternatives in the CD Report. Fourth alternative added for rehabilitation of structure.	In progress.
8. IH to include the design of a landscaped center median as an alternative in the CD report. It is noted that this the County's preferred alternative. Waiting for further direction regarding the limits and width of the median.	In progress.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	In progress.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.
13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	In progress.
15. Provide detail for parapet attachment to bulkhead.	Completed

ACTION ITEMS

16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	In progress.
17. Item deleted.	Completed.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	In progress.
19. Coordinate Local Officials Briefing.	In progress. Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend. No additional local official briefings are anticipated.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	In progress.
22. Add roadway costs to alternatives matrix. County reminds to include costs for lighting and irrigating the landscaped median. CD report to include text that mentions design of median irrigation shall be performed as a Preliminary Engineering task.	In progress.
23. John Coscia to contact NIDOT Local Aid to set up meeting with NIDOT SME's	In progress.
24. John Korunow to contact Al Virgilio (NIDOT) to discuss bridge sufficiency rating.	Completed. Al indicated that despite scour issues, the fact that it has an 83.4 rating would still preclude federal funding for replacement. Al suggests obtaining the rating calculations and reviewing them more closely. Al found it unusual for a bridge this old to have such a high SR.
25. Frank Yao has contacted Chris Dwyer from Buchart Horn (prepared inspection report) requesting rating calculations.	Contacted, waiting for reply
26. County is reaching out to Parkside Business and Community in Partnership organization to schedule a date for the Public Information Center.	In progress.

Meeting Minutes – Conference Call
October 28, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: John Korunow (IH)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6414	gpatterson@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com

(IH designed and sent draft plans with landscaped median to Camden County prior to the conference call for review).

Kevin Becica advised IH that a county project was recently constructed in Cherry Hill with a landscaped median and it resulted in some negative feedback from local officials who are concerned about emergency operations in the event of an accident. IH was advised to leave the median as shown, however we will consider reducing the length and/or width of the median as we move forward.

Frank Yao discussed the 2015 bridge sufficiency rating of 83.4 and asked the county if their preference is to rehabilitate or replace the existing structure. Although the 83.4 rating would ordinarily preclude federal funding it is the county's preference to replace the structure. It was noted that the scour evaluation is not considered when determining the sufficiency rating and that scour is the critical issue with regards to the stability of the structure at both the pier and abutments. As part of the alternatives analysis, IH will

provide a concept for bridge rehabilitation that includes scour countermeasures and a life cycle analysis of the projected maintenance costs.

Kevin Becica discussed Camden County's Baird Boulevard bridge which exhibited an 18" foundation and 9" deck settlement primarily due to scour issues. John Coscia suggested that this example of foundation settlement be included in IH's report to strengthen the case for the bridge being replaced rather than rehabilitated.

John Coscia requested that the cost estimates for the roadway and bridge portions of the project be separated in the event that multiple funding sources are needed it will be easier to differentiate them in this manner. Kevin Becica requested parapet repair be included in the bridge rehabilitation report/cost. Kevin also asked that a cost for proposed lighting and irrigation of the median be included, as well as including the citation that "the irrigation system shall be designed according to City Camden standards and be performed during Preliminary Engineering.

The "Action Items" list was then discussed:

- Item No. 1 - IH will revise text to say that the "bottom elevation of the proposed structure will be the same as the bottom elevation of the existing structure". Kishor Shah confirmed that keeping the same elevation and bridge opening will be sufficient for the drainage design.
- Item No. 6 - Camden County requested that the project cost for the staging and detour alternatives be compared in the Alt. Analysis. This cost comparison was included in the PowerPoint presented at the local officials meeting but it will be updated as new information is acquired and new decisions are made.
- Item No. 8 – Noted that a landscaped median is the county preference and it is suggested that we reach out to emergency personnel for comment.
- Item No. 17 – Item regarding Cooper's Ferry will be deleted.
- Item No. 19 – No additional local official's briefings are anticipated.

Action Items:

1. John Korunow will contact Albert Virgilio from the NJDOT to discuss the bridge sufficiency rating and ask if there is any possibility of obtaining Federal funding despite the 83.4 rating.
2. John Coscia will contact NJDOT Local Aid to set up meeting with NJDOT SME's after John K. contacts Al Virgilio.

Following the meeting, John Korunow reached out to Al Virgilio, The NJDOT Structural SME. John discussed the situation with the sufficiency rating being above 80 while the scour was is a major problem. John also told Al that the bridge was nearly 100 years old. Al informed John that there really isn't anything that can be done with the sufficiency rating as high as it is, however, he was very surprised that a bridge as old as this one would have a rating that high in the first place. He suggested that we obtain the rating calculations and review them more closely. Frank Yao has contacted Chris Dwyer, PE from Buchart Horn who prepared the inspection report and is awaiting a return call to confirm that the rating is correct.

If the writer does not receive any comments on the minutes by (November 18, 2016), it will be understood that the content of this memo is acceptable to all attendees.

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom of proposed structure will be higher than existing.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	Completed
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	Completed
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report.	In progress.
7. IH to present three structural alternatives in the CD Report.	In progress.
8. IH to include the design of a landscaped center median as an alternative in the CD report.	In progress.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	In progress.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.
13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	In progress.
15. Provide detail for parapet attachment to bulkhead.	Completed
16. Revise text for existing 18" steel pipe with RCP at southeast bridge approach.	In progress.
17. Contact Cooper's Ferry regarding existing utilities.	Completed but they could not provide any information.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	In progress.

ACTION ITEMS

19. Coordinate Local Officials Briefing.	In progress. Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd. Completed although Mayor did not attend.
20. Discuss materials needed for local officials briefing.	Completed.
21. Revise Purpose & Need Statement to mention rehab of bridge	In progress.
22. Add roadway costs to alternatives matrix.	In progress.
23. John Coscia to contact NJDOT Local Aid to set up meeting with NJDOT SME's	In progress.

Meeting Minutes – Local Officials Briefing
October 20, 2016 – 10:00 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: Kevin Becica

Attendees	Organization	Telephone	Email
Dennis O'Rourke	Pennsauken Twp.	856-665-1000	dorourke@twp.pennsauken.nj.us
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6414	gpatterson@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com

The meeting was held at the Waterfront Technology Center, 200 Federal Street, Camden, NJ. The meeting began with Andrew Levecchia giving an overview of the project and introducing the project team. Meeting agendas and a bridge replacement alternatives matrix were distributed and Gary Patterson then went through the agenda with an accompanying PowerPoint presentation. The following topics were discussed:

- **Existing conditions** – noted that Kaighn Ave. is closed 15-18 times per year due to flooding
- **Existing bridge** – superstructure in fair condition due to completely spalled bottom flange encasements and girder section loss. Bridge bearings also have moderate to severe rust at the pier. However, the main issue is the severe scour at both the pier and abutments. Despite this the sufficiency rating remains over 80.0.
- **Existing roadway, sidewalk, and multi-use path** – flooding leads to sidewalk and multi-use path being washed out and in disrepair. Has also led to ice wedging in the winter and undermining of the roadway.

- **Landscaped median** – landscaped center median proposed to provide aesthetically pleasing entrance to Camden.
- **New bulkhead and parapet** – a new bulkhead will be constructed with an “open” parapet mounted on top. Open parapet will allow water to pass through when the water level rises above the roadway level thereby preventing backwater flooding.
- **Proposed lighting standards** – decorative lighting will be provided to match the city standard which is currently under development.
- **Proposed profile** – the minimum roadway profile will be set at 7.5’ which will prevent the majority of road closings. Bottom of proposed bridge will be at the same level as the existing bridge.
- **Impacts to adjacent properties** – slope easements will be necessary but there will be no impacts to the parking lots operationally.
- **Utility relocations** – Change in roadway elevation will require resetting utilities.
- **Proposed bridge alternatives** – discussed alternatives matrix and indicated that a single span with pre-stressed concrete box beam is the preferred alternative.
- **Proposed detour** – discussed the merits of performing construction using a detour in terms of time and cost savings. Discussed proposed detour route using Haddon Ave.

At the conclusion of the PowerPoint presentation the project was discussed further and the following action items are noted:

- John Coscia will reach out to NJDOT Local Aid (Bert Hernandez) to setup a meeting with NJDOT SME’s. This meeting will take place prior to a Public Information Center (PIC).
- It was agreed to go forward with the landscaped median as the preferred alternative and meeting material will be updated to reflect this for use at future meetings and PIC.
- Roadway costs will be included in the alternatives matrix, as the version presented at this meeting only included bridge costs.
- Purpose and need statement will be revised to include discussion about bridge rating and alternative for rehabilitating the bridge.
- IH will contact Richard Grubb and Associates in order to determine the historic relevance of the existing bridge.

Meeting Minutes – Conference Call
September 27, 2016 – 10:30 PM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: John Korunow (IH)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com
Gary Patterson	IH Engineers	609-524-6414	gpatterson@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com

Gary Patterson announced that the Local Officials meeting was scheduled on October 20, 2016 at 10 AM and will have located at Waterfront Technology Building on 200 Federal Street, Camden, NJ 08103. IH will provide the easels and board for the presentation.

Kevin Becica requested to prepare following documents for the Local Officials meeting:

- Project Fact Sheet
- Plan
- Profile (with height of the bridge)
- Detour

Each of the presentation documents should be labeled with word “Conceptual”.

Kevin Becica suggested sending all prepared meeting documents prior October 11-12th to County and having a phone conference after County’s reviewed them.

Kevin Becica suggested showing the current flooding problem and how the new design will solve this problem.

Gary Patterson created “Action Items” spreadsheet, which shows what has been done, progress and what has to be done for the project. Spreadsheet will be updated as “we go”.

Kevin Bacica suggested inviting MetEast High school’s facility manager for the Officials meeting.

IH discussed the project updates that were done and whatever are in the process:

- Block numbers/lots has been shown on the plan.
- Additional typical sections have been added.
- Proceeding to show the existing utilities (per Kevin’s request) on the profile.

Kevin Becica requested IH to review the Traffic Volumes before the Public meeting.

Kevin Becica suggested mentioning on the Officials meeting that the proposed road will be built on the top of the existing road.

Kevin Becica requested IH to prepare the “Meeting Agenda” before October 11 for County’s review.

John Coscia requested IH to present the Detour and Utility Plans on the Officials and Public meetings.

Kevin Becica suggested choosing the form of the presentation, such as boards, handouts and PowerPoint slides.

Next conference call should be scheduled for October 13 or 14, 2016.

If the writer does not receive any comments on the minutes by (September 13, 2016), it will be understood that the content of this memo is acceptable to all attendees.

ACTION ITEMS

ACTION ITEM	RESOLUTION
1. IH to visit the project site to determine the bottom elevation of the existing structure and gas line.	Completed. Bottom of proposed structure will be higher than existing.
2. County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.	Completed. Plans rec'd on 8/11/16.
3. IH to add stormwater pipes to the profile drawings.	In progress.
4. IH to confirm the voltage of the existing electrical lines.	Completed. 12k and 24k
5. Adrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.	In progress.
6. IH to include detour as a proposed alternative to staging and compare them in the CD Report.	In progress.
7. IH to present three structural alternatives in the CD Report.	In progress.
8. IH to include the design of a landscaped center median as an alternative in the CD report.	In progress.
9. IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents	Completed. Plans sent on 9/12/16.
10. Brian Stankus from IH will review the traffic volumes.	In progress.
11. Include wetlands limits on construction plans.	Completed.
12. Add typical section for cut section adjacent to the school and also add existing bulkhead were appropriate.	Completed.
13. Include Block/Lot numbers and identify Green Acres parcels on the construction plans.	Completed.
14. Add Legend to Construction Plans.	In progress.
15. Provide detail for parapet attachment to bulkhead.	In progress.
16. Replace 18" steel pipe with RCP at southeast bridge approach.	In progress.
17. Contact Cooper's Ferry regarding existing utilities.	Completed but they could not provide any information.
18. Identify all potential utility conflicts and provided recommendations in the Concept Development Report	In progress.

ACTION ITEMS

19. Coordinate Local Officials Briefing.	In progress. Meeting set for 10/20/16 @ 10:00 AM. Confirmed attendees so far; Tejal Patel, Andrew Levecchia, Dennis O'Rourke, Mayor Redd
20. Discuss materials needed for local officials briefing.	

Meeting Minutes – Conference Call
September 13, 2016 – 10:30 PM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: Gary Patterson (IH); John J. Coscia, Jr. (DVRPC); Andrew Levecchia (Camden County)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com

John Korunow confirmed that the ROW was revised (based on the updated cross sections with new limits of work and the proposed 3 to 1 slope) and sent to Amy Green and RGA for their use.

Kevin Becica requested that the wetland limits be clearly shown on the plan and a legend provided to help identify not only the wetlands but the existing and proposed bulkhead lines, and ROW lines.

Kevin Becica about how the Parapet would be attached to the bulkhead (steel sheeting). Frank Yao explained that the parapet could be constructed with a _____ (bulkhead behind the parapet) or mounted on the bulkhead.

Kevin Becica noted that the typical sections do not represent the area by the school where the berm slopes up from the roadway. John Korunow suggested adding an additional typical section.

Kevin Becica requested that the Lot and Block information be shown on the plan and the Green Acres parcel adjacent to Park Road on the southeast side of the Cooper River be identified.

Frank Yao informed that the proposed abutment will be shown on the same location as existing based on the As-Built plans. Previously, the length (110 feet) of the bridge span was shown based on estimation (before IH got As-Built plans). After reviewing of As-Built plans, we can confirm that IH's proposed design with 107 feet long span accommodates 107 feet length of the existing design.

John Korunow discussed constructability of the proposed sheetpiles and cofferdam.

Kevin Becica inquired about stormwater design and issues. Kishor Shah discussed proposed stormwater and sanitary sewer design. He mentioned that stormwater and sanitary sewer will be separated.

Kevin Becica requested to replace 18 inches steel pipe with RCP for the southeast side of the bridge approach.

Kevin Becica suggested contacting Joe Meyers or Sara Brian from Cooper's Ferry about Utility plan. Kevin confirmed that she will contact to Uzo Ahirakwe from City of Camden about Water utilities and to Jim Veneto from PSE&G about Gas and Electric utilities.

Also, Kevin suggested using InfraMap and all other sources of utilities location and information, identify all utility conflicts that designer and contractor could face in the future in an order to avoid change orders during construction of the project. She asked to write recommendations for the proposed utilities in the Concept Development Report.

Next conference call is scheduled for September 27, 2016 at 10:30 AM.

If the writer does not receive any comments on the minutes by (September 27, 2016), it will be understood that the content of this memo is acceptable to all attendees.

Meeting Minutes – Conference Call
August 30, 2016 – 01:00 PM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc:

Attendees	Organization	Telephone	Email
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6414	gpatterson@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com

IH discussed the project updates that were done and whatever are in the process:

- Typical section was remodeled (fence moved back to ROW line) and new surface has been generated.
- Preparing environmental documents (screening and cultural resources screening) to send to DEP.
- Proceeding with three structural alternatives and detour alternative.
- Considering to pull-up the old piles in an order to build the new bridge piles or pull wing wall piles in an order to build the new abutments.

Brian Stankus from IH will look at the traffic volumes.

IH is planning to meet Camden County and Pennsauken County engineers.

IH is preparing plans and documents for meeting officials for end of September.

IH is preparing documents for public meeting for November. All residence at Park side should be notified as well as the stakeholders prior one month about date, time and location of the public meeting

The limits of the potential landscaped median were discussed and it was agreed that the median would begin on the west side of the bridge and extend to the park entrance.

Next conference call is scheduled for September 13, 2016 at 10:00 AM.

If the writer does not receive any comments on the minutes by (September 13, 2016), it will be understood that the content of this memo is acceptable to all attendees.

Meeting Minutes – Conference Call
August 17, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: Andrew Levecchia (Camden County); John Korunow (IH); John J. Coscia, Jr. (DVRPC)

Attendees	Organization	Telephone	Email
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Gary Patterson	IH Engineers	609-524-6413	gpatterson@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com

IH confirmed that they received the As-Built Bridge Plans sent from Tejal Patel. Tejal also provided IH with an example of Route 42 Bridge Plans, Grove Street Island design, Grove Street Landscaping and Lighting design plans.

Gary Patterson confirmed that the Typical Section was revised based on Kevin Becica's, Tejal Patel's and Andrew Levecchia suggestions that were provided at the County meeting held on August 10, 2016.

Frank Yao discussed future abutment and bridge design based on the measurements that were taken by IH during the site visit after the County's meeting on August 10, 2016. These measurements agree with the elevations as shown on the As-Built plans verifying that the proposed bottom of structure will be as high as the existing bridge at a minimum.

The limits of the potential landscaped median were discussed and it was agreed that the median would begin on the west side of the bridge and extend to the park entrance.

Next conference call is scheduled for August 30, 2016 at 1:00 PM.

If the writer does not receive any comments on the minutes by (August 30, 2016), it will be understood that the content of this memo is acceptable to all attendees.

Meeting Minutes
August 10, 2016 – 10:00 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: John J. Coscia, Jr. (DVRPC), John Korunow (IH)

Attendees	Organization	Telephone	Email
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
Gary Patterson	IH Engineers	609-524-6414	gpatterson@ihengineers.com
Kishor Shah	IH Engineers	609-524-6413	kshah@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com

The progress meeting was held at the Camden County Public Works Department, 2311 Egg Harbor Road, Lindenwold, NJ 08021 on August 10, 2016 at 10:00 AM. The meeting began with introductions and the following summarizes the discussions that took place:

- **Structure Design and Alternatives**

- Frank Yao described how the staging concept had been revised from two stage construction to three stage construction, thereby eliminating the 5'-6" overbuild that was required to construct in two stages. This will enable the proposed bridge width to match the existing width of 40'-0" as desired by the County.
- Kevin Becica and Andrew Levecchia commented that the concept of a detour is acceptable to the County and should be considered as one of the alternatives and perhaps the favored alternative, noting that Kaighn Ave. is closed 15-20 times per year for flooding and the motorists are already accustomed to being detoured. The detour routes currently used seem to function adequately. Detour routes using Baird Blvd. and US Routes 30-130 were suggested by Andrew. IH will analyze the detour alternative and compare the construction time and cost to the staged construction alternative. It was noted that access to the school, cemetery, and temporary signing for the nearby hospital (Our Lady of Lourdes) need to be considered when developing the detour plans.

- Three alternatives were discussed with regards to the bridge design (note: Alternative numbers listed here match the plans and are not necessarily in the order in which they were discussed).
 - Alternative 1 – Single span with steel girders
 - Alternative 2 – Single span with Prestressed Concrete Box Beam (preferred Alt.)
 - Alternative 3 – Two span with steel girders
- Kevin Becica asked IH to include all three alternatives in the report comparing all advantages and disadvantages.
- Kevin Becica provided several comments with regard to the bridge design which are noted here and will be considered as the Concept Development Report moves forward.
 - Include in the report the proposition of how to prevent bridge components from corrosion and also how to minimize future maintenance for the County. Metalizing method is suggested for the steel girder option.
 - Single span with box beam is the favored alternative as it should be more economical and faster construction with a thinner structure depth. Cast-in-place bridge slab using High Performance Concrete (HPC) is preferred.
 - The CD Report should include the disadvantages of a two span structure, such as scour which has necessitated repair work on the existing structure.
 - There are existing foundation systems at the abutment locations which could make driving piles difficult. A similar situation occurred at Baird Blvd. resulting in significant Change Orders during construction. Limited information is available for these foundations and a recommendation for geotechnical investigations to be done during preliminary engineering should be included in the CD report.
 - Approach slabs on both sides of the structure are preferred.
 - Be cognizant of time of year restrictions with regards to construction activities in the waterway. Construction can't start until after June 30th.

- **Roadway/Environmental Discussion**

- Gary Patterson discussed the different profile alternatives noting that the profile could not be elevated enough to accommodate the proposed trail under the bridge without significant impacts to adjacent properties and without greatly impacting North Park Drive. The preferred alternative is to raise the profile to a minimum elevation of 7.5' at the centerline of roadway, the minimum existing elevation is approximately 3.9'. The County advised that when the roadway floods it can be as much as 3'-4' of water so the 7.5' elevation would alleviate the majority of flooding incidents. It was also noted that the Mean High Water (MHW) Level at this location is 6.51'.
- The MHW Level of 6.51' would result in a minimum clearance of 2.24' to the bottom of the preferred structure. IH will investigate the possibility of reducing the structure depth to provide a greater clearance, indicating that a 3"-6" reduction may be possible.
- The bottom elevation of the proposed structure in relation to the existing structure was discussed. IH will visit the site in order to obtain measurements and the County will contact John Coscia (DVRPC) and try to obtain As-Built plans that may be helpful for the proposed bridge design. Kevin Becica also indicated that the County has plans from an emergency repair contract prepared by K.S. Engineers that may be helpful. NJDEP approval is the foremost concern with regard to the water level under the bridge. The proposed hydraulic opening will need to be compared to the existing opening and if the proposed bridge is lower the opening may need to be wider. Kishor Shah also noted that

the absence of a center pier in the proposed condition will be beneficial in providing greater flow.

- Kevin Becica requested that the existing stormwater pipes be shown on the profile.
- Kevin Becica noted that old roadways are present under the existing roadway and that voids had previously been filled with flowable concrete. Gary Patterson suggested that a geotechnical investigation be performed to confirm the stability of the subgrade and this information used to specify the treatment of the existing roadway prior to constructing a new roadway over it.
- The typical roadway section was discussed noting that it would be a 2% crowned section with 12' lanes and 8' shoulders. Andrew Levecchia asked if it would be possible to reduce the shoulders to 4' each and provide an 8' landscaped median for aesthetic value as this roadway is a gateway to the City of Camden. A similar median was recently designed and constructed at Grove St. in Haddonfield. The County will provide these plans for IH use. This idea will be presented as an alternative in the CD report. One negative aspect would be that in the event of an accident or maintenance on one side of the road that side would need to be closed completely as the median would prevent a traffic shift.
- Andrew Levecchia discussed the County preferences in terms of parapet design, decorative lighting. The lights should be the same design or as close as possible to the existing design. No preferences for parapet. County's State Street project should be considered as an example for the parapet design. Kishor Shah noted that the bulkhead railing would need to be "open" to allow for the flow of water.
- It was agreed that the fence would need to be reset/relocated due to the change in elevation and that it would be best to reset the fence on the existing ROW line. A mowable 3:1 slope should be used along the school and cemetery properties and a slope easement will be necessary.

- **Utilities**

- Kevin asked what the voltage of the existing overhead electrical lines was (it has subsequently been determined that the poles carry both 13 kV and 26 kV lines) and if they could be temporarily relocated from the WB to the EB side of the roadway while WB construction is underway. IH will also contact PSEG to determine if the lines can be temporarily de-energized for a time period during construction.
- The change in roadway elevation will require the relocation of much of the stormwater system because the pipes and inverts will be too far below the surface if left in place. Kevin advised that the existing pipes are most likely combined sanitary sewer and stormwater and if so any new pipes would need to be separated.
- County would prefer that the relocated gas line not pass through the abutment because settlement of the abutment can lead to fractures in the newly installed gas main. Prefer relocating the gas line to the fascia beam. IH indicated that due to the tidal flow it might not be possible to locate the gas line on the fascia as water flows in both directions and this may impact the exposed gas line.

- **Administrative**

- The design schedule was discussed and it was noted that the CD Report is still scheduled to be completed in May of 2017.

- The schedule indicates a Public Information Center to be held in late October. County and IH to investigate how much notice needs to be given prior to the PIC and what residents and local officials need to be directly notified and if we need to meet with local officials in advance of a PIC. (Consulted with John Korunow who stated that the local officials meeting should come first and 3 weeks should be provided for notice of each as a minimum)
- The County would like to setup a meeting with the NJDEP in November, a package of environmental documents will need to be sent to the DEP about three weeks in advance so they can review the project and be prepared to make decisions at the meeting.
- The utility status was reviewed and Natalie Linnik indicated that we have received a response from all contacted utilities with the exception of the City of Camden (Water and Sewer).

- **Action Items**

- IH to visit the project site to determine the bottom elevation of the existing structure and gas line.
- County to obtain As-Builts for the existing bridge and examples from other projects for parapet, railings, lighting standards, and landscaped center medians.
- IH to add stormwater pipes to the profile drawings.
- IH to confirm the voltage of the existing electrical lines.
- Andrew Levecchia to contact City of Camden (Mr. Uzo Ahirakwe) to assist in obtaining information with regards to the city water and sewer systems.
- IH to include detour as a proposed alternative to staging and compare them in the CD Report.
- IH to present three structural alternatives in the CD Report.
- IH to include the design of a landscaped center median as an alternative in the CD report.
- IH to contact PSEG to see if they will allow the lines to be temporarily de-energized during construction.
- IH to revise side slopes to 3:1 and generate new slope limits. The plans with impacts will be sent to subconsultants Amy Greene and Richard Grubb and Associates for development of environmental and cultural resource documents.
- IH/County to coordinate Public Information Center and determine what prerequisites are needed.

Meeting Minutes – Conference Call
June 7, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: Andrew Levecchia., Camden County

Attendees	Organization	Telephone	Email
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6413	gpatterson@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org

John Korunow discussed the profile that was sent to Andrew Levecchia indicating that the profile could not be elevated enough to accommodate the proposed trail under the bridge without significant impacts to adjacent properties and without greatly impacting North Park Drive. Additional profile alternatives are being developed with one profile being set with a minimum elevation above the base flood elevation of 10.0. The second alternative will set the minimum bulkhead elevation at 11.0, which is one foot above the base flood elevation and the finished grade will be set accordingly.

Tejal Patel discussed the vertical grades of the profile mentioning that it appears that a minimum grade of 0.5% was utilized when developing this profile. She advised that a minimum grade of 0.3% would be acceptable. IH has noted this and will use 0.3% as a minimum grade if it is beneficial to the overall design as it may help to reduce impacts to adjacent properties and intersecting streets.

John Korunow presented three (3) alternatives of the proposed bridge typical sections (Alternative 1 – Single Span with Steel Girders, Alternative 2 – Single Span with Prestressed Concrete Box Beams, Alternative 3 – Two Span with Prestressed Concrete Next Beams). The width of the proposed bridge is 46 feet (curb to curb) for all these alternatives, where the width of the existing bridge is 40 feet. The overall width of the proposed structure alternatives is 67.5' (out to out).

Tejal questioned why the structure was designed with a 12' shoulder on one side and a 10' shoulder on the other and commented that 8' shoulders are all that is required. After the call IH revisited our proposal

and ascertained that the width of the proposed structure was designed based on an overbuild which was suggested in order to complete construction of the bridge in two stages whilst still maintaining traffic: *“To accomplish this two stage method and maintain two lanes of traffic at all times, an additional 5.5 feet width of structure is required to be built. The additional cost of this “overbuild” will be included in the evaluation matrix for this alternative, but may be outweighed by the benefit of maintaining traffic on the bridge and eliminating detours. The added shoulder width on the bridge is a byproduct of the “overbuild” and the elimination of the half through girders from the existing bridge.”* However, based on Tejal’s comments IH will look into other staging alternatives in order to eliminate the bridge widening and to maintain two lanes of the traffic at all times during construction. This may require the construction to be performed in three stages.

John Korunow mentioned that the existing gas pipe should be relocated (as noted on the bridge alternatives) and this relocation will need to be coordinated with PSE&G Gas.

IH will begin developing proposed roadway edges and present in plan view.

IH has completed the draft Crash Diagrams, these are currently being backchecked and will be submitted to the DVRPC upon completion..

If the writer does not receive any comments on the minutes by (June 24, 2016), it will be understood that the content of this memo is acceptable to all attendees.

Meeting Minutes – Conference Call
May 10, 2016 – 2:00 PM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: John J. Coscia, Jr., DVRPC

Attendees	Organization	Telephone	Email
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6413	gpatterson@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Gerry Gouldson	GEOD	973-697-2122	ggouldson@geodcorp.com
John J. Coscia, Jr.	DVRPC	215-238-2859	jcosciajr@dvrpc.org
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com

CONSULTANTS	PROJECT PROGRESS	
	Previous Period	Look Ahead Period
	(04/26/16 – 05/10/2016)	(05/10/16 – 05/24/2016)
IH	<ul style="list-style-type: none"> ✓ PDFs of cut sheets with basemapping were sent to Andrew Levecchia. ✓ The project schedule was revised and forwarded to Camden County and DVRPC. ✓ Began establishing a horizontal baseline and vertical profile. 	<ul style="list-style-type: none"> ✓ Perform a check of the mapping (manholes, pole's numbers, etc.). ✓ Crash Diagrams will be created based on the Police records. ✓ Begin traffic analysis.

		<ul style="list-style-type: none"> ✓ An Invoice will be sent to DVRPC this period, waiting for subconsultant invoices. ✓ Continue to develop baseline and profile. Begin to develop proposed typical section and cross sections. ✓ Begin development of two roadway alternatives with two different profiles. ✓ Begin development of three bridge alternatives; 1) single span with steel girder and concrete deck, 2) single span with precast concrete box beams and concrete deck, 3) two spans with precast concrete next beam with concrete deck and additional concrete pier. ✓ Will investigate the possibility of setting the abutment back far enough to accommodate potential shared use path which will pass under the structure. Will also check if vertical clearance is sufficient for such a path.
GEOD	<ul style="list-style-type: none"> ✓ Sent InRoads geometry and DTM files to IH. 	
Amy Greene	<ul style="list-style-type: none"> ✓ Sent PDF of the roadway plans for use in the development of the environmental document. 	<ul style="list-style-type: none"> ✓ Complete checking the delineation plan and will mark it up with regulated areas. ✓ Continue to review the hazardous sites information found in the EDR report.
RGA	<ul style="list-style-type: none"> ✓ Sent PDF of the roadway plans for use in the development of the cultural resource screening. 	
County	<ul style="list-style-type: none"> ✓ Andrew Levecchia requested that IH send the first invoice. 	

Comments	✓ Andrew asked IH to investigate the possibility of setting the abutment back far enough to accommodate a shared use path under the proposed structure.
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Meeting Minutes – Conference Call
April 26, 2016 – 10:30 AM
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey

To: All Attendees

Cc: John J. Coscia, Jr., DVRPC

Attendees	Organization	Telephone	Email
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Gary Patterson	IH Engineers	609-524-6413	gpatterson@ihengineers.com
Kishor Shah	IH Engineers	609-524-6425	kshah@ihengineers.com
Natalie Linnik	IH Engineers	609-524-6421	nlinnik@ihengineers.com
Gerry Gouldson	GEOD	973-697-2122	ggouldson@geodcorp.com

CONSULTANTS	PROJECT PROGRESS	
	Previous Period	Look Ahead Period
	(03/29/16 – 04/26/2016)	(04/26/16 – 05/03/2016)
IH	<ul style="list-style-type: none"> ✓ Received mapping. ✓ Created Cut Sheets. ✓ Picked up Crash Records from Camden County Police Department. ✓ A traffic count was completed for Kaighn Avenue (motor vehicles, pedestrians, cyclists). ✓ The project schedule was revised. 	<ul style="list-style-type: none"> ✓ Perform a check of the mapping (manholes, pole's numbers, etc.). ✓ Crash Diagrams will be created based on the Police records. ✓ Begin traffic analysis. ✓ Revised schedule will be sent to

	<ul style="list-style-type: none"> ✓ Waiting for subconsultant invoices. 	<p>Tejal.</p> <ul style="list-style-type: none"> ✓ An Invoice will be sent to DVRPC this period.
GEOD	<ul style="list-style-type: none"> ✓ Supplemental survey for mapping was sent to IH. 	
Amy Greene	<ul style="list-style-type: none"> ✓ Progressing with the screening report. ✓ Most of the environmental constraints have been mapped. ✓ Proofing the delineation plan. 	<ul style="list-style-type: none"> ✓ Complete checking the delineation plan and will mark it up with regulated areas. ✓ Continue to review the hazardous sites information found in the EDR report.
RGA	<ul style="list-style-type: none"> ✓ Finished up the fieldwork documenting the bridge, the Pub and the Cooper River Park Historic District. ✓ Reviewed SHPO research. 	
COUNTY COMMENTS	<ul style="list-style-type: none"> ✓ Tejal requested that IH send her the revised Project Schedule. ✓ Tejal requested that Andrew of DVRPC receive a copy of the base plans. ✓ Tejal requested that IH send invoice. ✓ Tejal requested IH to send the invoice. 	

Kishor Shah

From: Matthew Bencoter <mbencoter@ihengineers.com>
Sent: Monday, March 07, 2016 6:06 PM
To: Tejal Patel; Andrew Levecchia; pmcentee@geodcorp.com; 'John Korunow'
Cc: jcosciajr@dvrpc.org; 'Gerard J. Gouldson'; nlinnik@ihengineers.com; Bill Romaine;
jleynes@rgaincorporated.com; Kevin Becica; kshah@ihengineers.com
Subject: Kaighn Avenue Conference Call Summary - March 1, 2016

All,

Please review the attached summary items from our conference call on Tuesday, March 1st.

1. Attendees –Tejal Patel, Phil McEntee, Gerry Gouldson, John Korunow, Matt Bencoter, and Natalie Linnik
2. Previous Two Week Report
 - IH
 - IH prepared a draft CD report layout. IH will review and finalize internally prior to submitting to the County for Review.
 - Geod
 - Phil introduced Gerry as the new PM and point of contact for Geod.
 - Gerry reported that the base mapping should be completed mid next week, March 9th.
 - Supplemental survey will be scheduled for March 14th.
 - The supplemental survey will pick up the wetland flags set by Amy Greene. Geod requests that Amy Greene send sketches of the wetland flags to help their surveyors locate the flags.
 - Geod will provide a DTM once the supplemental survey is completed.
 - Richard Grubb (email update)
 - RGA is waiting for the area of potential affect to determine impacts.
 - Amy Greene (email update)
 - Amy Greene will be mark out the wetland flags the week of March 7th.
3. County Comments
 - Tejal requested IH to send out an email summarizes the conference call discussion.
 - Tejal would like Andrew and John Coscia cc'ed on the email submitting the draft CD report layout.
4. Two Week Look Ahead
 - IH will submit the draft CD report layout for review.
 - Geod will continue to prepare the base mapping and update it with the supplemental survey.
 - Amy Greene will flag the wetlands. They will email Kevin with field personnel information for Homeland Security.
 - IH will attempt to contact the utility companies that did not respond to the initial utility request.

Please contact John K. with any comments.

Thanks,
Matt

Matthew A. Bencoter, P.E.
Senior Project Engineer



103 College Road East, First Floor

Kishor Shah

From: Matthew Bencoter <mbencoter@ihengineers.com>
Sent: Monday, March 07, 2016 4:35 PM
To: Tejal Patel; Andrew Levecchia; pmcentee@geodcorp.com; 'John Korunow'
Cc: jcosciajr@dvrpc.org; 'Gerard J. Gouldson'; nlinnik@ihengineers.com; Bill Romaine;
jleynes@rgaincorporated.com; Kevin Becica; kshah@ihengineers.com
Subject: Kaighn Avenue Conference Call Summary - February 16, 2016
Attachments: Kaighn Avenue Utility Information Status_20160217.pdf; Kaighn Avenue Bridge
Plaque_SE Corner.JPG; Kaighn Avenue Bridge Plaque_SW Corner.JPG; Kaighn Avenue
Bridge Plaque_NE Corner.JPG

All,

Please review the attached summary items from our conference call on Tuesday, February 16th. We will send out summary items after each conference call from this point forward.

1. Attendees – Andrew Levecchia, Tejal Patel, Phil McEntee, John Korunow, and Matt Bencoter
2. Previous Two Week Report
 - o IH
 - We called the utility companies and updated the Utility Contact List (see attached).
 - IH to send CAD Standards to Geod.
 - o Geod
 - Aerial Imagery was done on Friday, February 12th.
 - Geod is working on the base mapping which will need 3 weeks from this Friday, February 20th.
 - o Richard Grubb
 - No Report.
 - o Amy Greene
 - No Report.
3. County Comments
 - o Andrew would like to have Camden County Historic Society added to the Stakeholder list.
 - o Andrew suggested that the CD Report state that the existing plaques will be saved and used for the new bridge. John pointed out that there are 3 plaques with 3 different dates listed (See attached photos)
4. Two Week Look Ahead
 - o IH will prepare a draft outline of the CD report for review of the content to be included. IH will send to the County for review and comment.
 - o Geod will continue to prepare the base mapping.

Please contact John with any comments. I'll follow up with last week's summary in a subsequent email.

Thanks,
Matt

Matthew A. Bencoter, P.E.
Senior Project Engineer



103 College Road East, First Floor
Princeton, NJ 08540
(P) 609-524-6413

**Meeting Minutes for the Kickoff Meeting of
Local Concept Development Study
Kaighn Avenue (CR 607) over the Cooper River
City of Camden, Camden County, New Jersey**

To: All Attendees

Cc: John J. Coscia, Jr., DVRPC

Attendees	Organization	Telephone	Email
Andrew Levecchia	Camden County	856-566-3120	andrewl@camdencounty.com
Kevin Becica	Camden County	856-566-2971	kbecica@camdencounty.com
Tejal Patel	Camden County	856-566-2938	tpatel@camdencounty.com
John Korunow	IH Engineers	609-524-6404	jkorunow@ihengineers.com
Matt Benscoter	IH Engineers	609-524-6413	mbenscoter@ihengineers.com
Frank Yao	IH Engineers	609-524-6412	fyao@ihengineers.com
Bill Romaine	Amy Greene	908-788-9676	bromaine@amygreene.com
Jennifer Leynes	RGA	609-655-0692	jleynes@richardgrubb.com
Phil McEntee	GEOD	973-697-2122	pmcentee@geodcorp.com

The kickoff meeting was held at the Camden County Public Works Department, 2311 Egg Harbor Road, Lindenwold, NJ 08021 on January 7, 2016 at 10:00 AM. The meeting began with introductions of the project team. The group discussed the project history and the purpose and need for the project. Here is a summary of what was discussed:

- Project History
 - Kaighn Avenue and the bridge over the Cooper River is owned and maintained by Camden County.
 - The Kaighn Avenue Bridge over the Cooper River is in a state of disrepair and has experienced severe scour undermining at the pier and both abutments. The scour to the north is from tidal and the south is from opening of the flood gates to the south of the bridge. For reasons stated, the entire structure will be replaced with a single span. The structure type will be determined during Concept Development.
 - The 2013 bridge inspection recommended priority 1 repairs to fix scour conditions which were performed by Camden County. The bridge is fracture critical.
 - Kaighn Avenue is a heavily traveled corridor that transects the Parkside Neighborhood of Camden and is prone to tidal flooding and plagued by road closings during a combination of

- 1.5”+ rainfall, full moon, and high tide events. Flooding is the result of a 40-year-old hurricane event that breached a nearby earthen dam and subsequently allows the Cooper River to inundate a low lying area of Farnham Park which is directly adjacent to a 1/3 mile stretch of Kaighn Avenue. NJDEP has determined that lower Farnham Park is wetlands and, the levee cannot be replaced. The road is closed due to flooding approximately 16 times annually.
- The vertical alignment of Kaighn Avenue plays a role in the continued flooding. The roadway west of the bridge is 5-6 feet lower than bridge deck.
 - The 24” gas main is currently being repaired by PSE&G Gas for leaks at the joints.
 - There were recent maintenance projects within the project limits by the County. Guide rail with 10’ long posts was added to the north of the roadway to protect vehicles from the steep embankment. Another maintenance repair was pumping flowable fill concrete into the low point of the roadway. Steep slopes and poor soil conditions in the area that is frequently flooded caused the condition requiring longer posts and flowable fill concrete.
 - Kaighn Avenue is within an active pedestrian community. The sidewalk and multiuse trail is in disrepair due to frequent flooding. This trail provides access to Farnham Park and is part of the Circuit a Regional Trail Network connecting users to Philadelphia and the regions trails.
 - The project limits will be from Euclid Avenue to Park Drive.
 - Project Controls
 - Andrew Levecchia will manage the project for Camden County and coordinate with DVRPC.
 - Kevin Becica appointed Tejal Patel as the lead for the design effort and to be the point of contact for IH. Andrew Levecchia and Kevin Becica should be copied on project correspondence (letters, emails, transmittals, etc.)
 - Tejal Patel requests that the team schedule a 2-week conference call to discuss the progress. Tejal will send out a request for available times.
 - DVRPC will manage the procurement of the project. IH will send invoices to DVRPC. DVRPC will send it to Camden County for review. Andrew does not need to be copied on the invoice from IH.
 - Project Stakeholders
 - The project will include numerous stakeholders as Kaighn Avenue is one of the five main access roads into the City of Camden. The project will be a high profile project for that reason.
 - During this phase of the project, the County would like IH to coordinate with the stakeholders to finalize the preferred alternative. Stakeholders would include City of Camden, Pennsauken Township, MetEast High School, Veterans Cemetery, Camden County Open Space Advisory Committee, John Wolick Superintendent of Dams and Community Development Corporations (CDC) such as Parkside Business Community Partnership. Camden County has over 800 CDCs. Andrew Levecchia will provide a list of stakeholders with contact information.
 - Project Design Standards
 - The County has adopted a Complete Streets policy. Multi-use trails, bike lanes, and sidewalks should be part of this project to connect the residential areas to the west with the parks and shopping along Route 30 to the east.
 - The project schedule has this phase of the project to be completed by May 2017.

- The project should be designed following the Camden County AutoCAD standards. Tejal will provide the County CAD standards.
- Kaighn Avenue does not have a posted speed limit.
- Camden County can provide a list of utility contacts in the area.
- There are currently no plans for future development within the project area that the County is aware of at this time. The Pub may redesign their parking lot but that will not affect this project.
- Camden County will review their records for as-built and ROW plans.
- Highway lighting should be provided along the roadway. The County has lighting standard details that were used on previous projects such as Haddon Avenue, Cooper Hospital and Lanning Square. The County can provide the detail for the light standard.
- The County previously prepared an alternative detour route for Baird Boulevard Bridge that may be helpful to IH. The County will provide that detour plan.
- The project is funded with Federal money administered through DVRPC through 2020. The anticipated construction cost is \$15 million.
- IH should investigate Accelerated Bridge Construction methods as part of the alternative analysis.
- Concept Development Report
 - The project will follow the NJDOT process for Concept Development. IH has experience with CD reports from their 2010 and 2013 NJDOT GEC contracts that John has managed.
 - John will review the schedule after the kickoff meeting to adjust any tasks to meet the May 2017 completion date.
 - Matt Benscoter will lead the Roadway Design and Frank Yao will lead the Structural Design efforts.
- Survey
 - GEOD will have the project area surveyed using aerial photogrammetry. The limits should include the circle to the east with Route 30. GEOD will confirm the aerial limits prior to scheduling the flight.
 - The water level of the tides varies almost 6 feet. Kevin Becica wants to make sure the steep embankment to the north is picked up during the survey work. GEOD should schedule the flight during low tide.
 - The County requires a 24-hour advance notice prior to field visits. Any company going to the field needs to provide the vehicle (year, make, and model), plate number, and names of field personnel to the County in order to provide information to Homeland Security.
 - GEOD will survey the wetland flagging provided by Amy Greene during the field survey to set ground control, verify the aerial survey, and survey the bridge.
- Environmental
 - During the alternative analysis, the environmental impacts need to be evaluated.
 - Prior to flagging the wetlands, access letters need to be sent out to the residents. Camden County will provide a template that they use for their construction projects.
 - Amy Greene will investigate the issues associated with fill in the floodplain. The flooding is tidal. The project will likely require an Individual Flood Hazard Area Permit which is issued as part of the Waterfront Development Permit.

- The no-net fill requirement may not apply to this project. The County may need to request a hardship waiver but with the public safety issue due to repeat flooding, the waiver should be approved.
- If needed for any reason, Kevin Becica has photos of the flooding.
- Cultural Resources
 - RGA has performed studies in this area. Jennifer Leynes will talk with Richard Grubb to combine all the available information.

Here is a summary of the meeting Action Items:

1. Andrew Levecchia to provide contact information for project stakeholders
2. Tejal Patel to provide available County CAD Standards.
3. Amy Greene to review the No-Net Fill requirement and how it will apply to this project.
4. Tejal Patel to provide a template for the access letters.
5. Bill Romaine to prepare access letters. IH will compile the owner's list.
6. GEOD to coordinate the ground survey with IH, RGA, and the County prior to scheduling field visits.
7. Tejal Patel to provide lighting standard details from previous projects.
8. John Korunow will revise the schedule to reflect the Kick Off Meeting date. And make adjustments so that Concept Development is completed in May 2017.

The meeting minutes reflect the comments received by the attendees received prior to the January 20th deadline.

Appendix J

Cost Estimates, Alternative Matrix and Preliminary Preferred Alternative

Full Scope Concept Development Report

Bridge Replacement

Kaighn Avenue (CR 607 over Cooper River)

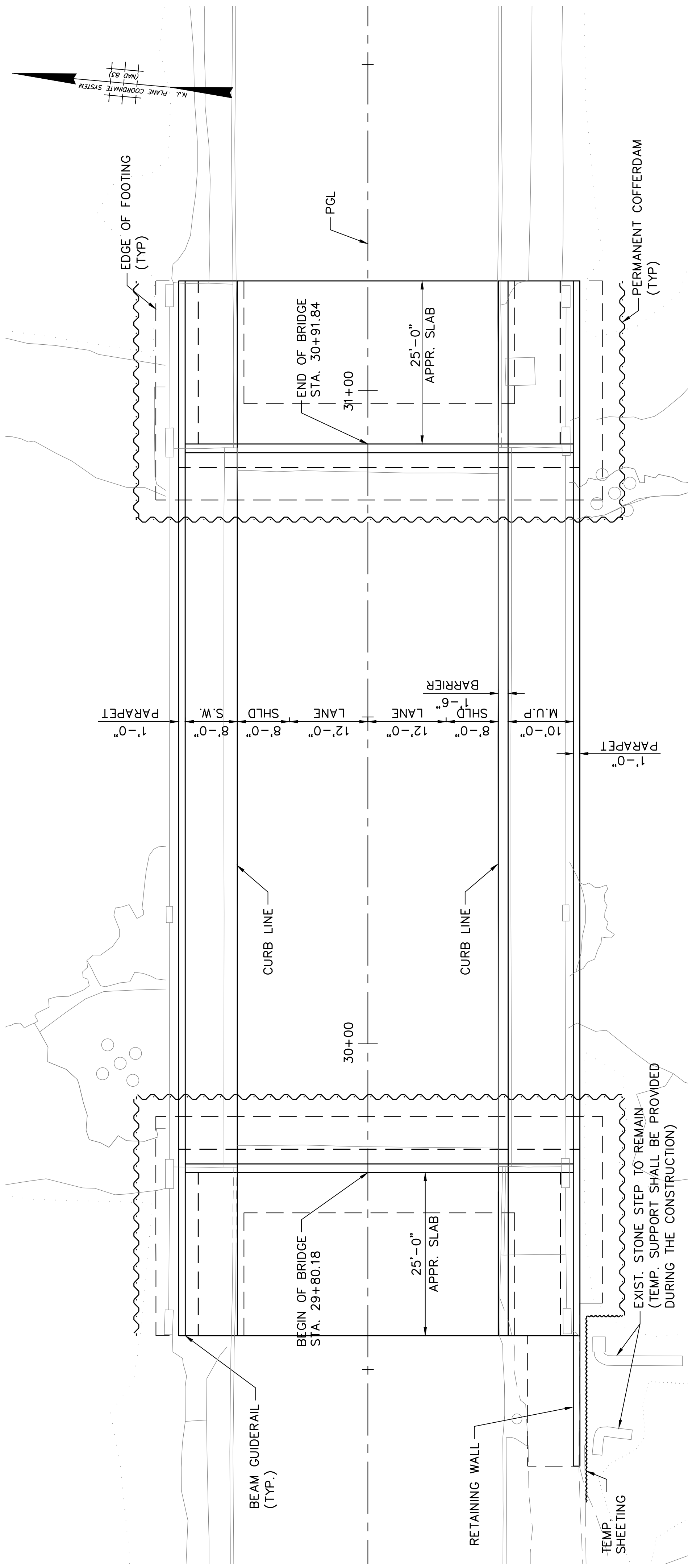
Alternatives Matrix

Alternatives	Description	Meets Purpose and Need	Construction Cost-Bridge *	Construction Cost-Roadway*	Benefits	Disadvantages
“No-Build”	No work will be completed to extend the useful life of the structure.	No	\$0.00	\$0.00		
Alternative 1 – One Span Prestressed Concrete Box Beams w/CIP Deck and Substructure Replacement (PPA)	The existing concrete deck, parapets, sidewalks, floor-beams, and stringers will be removed. The superstructure will be replaced by adjacent prestressed concrete box beams and CIP concrete deck. The existing abutments and wingwalls will be replaced. The existing pier and foundation will be removed. The new substructure will be supported by new pile foundation. The deck and sidewalks will be cast-in-place. The parapet will be precast concrete.	Yes	\$4,160, 000	\$3,429,000	<ul style="list-style-type: none"> Complete replacement of superstructure and substructure assures a very long design life. One span bridge eliminates the scour issue at the pier. Lower cost comparing the steel girders option. Concrete beams require less maintenance cost comparing the steel plate girders option. Adjacent box beams will provide more convenient for the future deck replacement. 	<ul style="list-style-type: none"> Deeper super structure depth due to reducing the span numbers. Pre-stressed concrete stress loss It is difficult to thoroughly inspect all the beams. Cost of repair/replace of beams is higher than steel girder option. Less flexibility to install the utility. It is difficult to reinforce the beam in the future.
Alternative 2 – One Span Steel Plate Girders w/CIP Deck and Substructure Replacement	The existing concrete deck, parapets, sidewalks, floor-beams, and stringers will be removed. The superstructure will be replaced by steel plate girder and CIP concrete deck. The existing abutments and wingwalls will be replaced. The existing pier and foundation will be removed. The new substructure will be supported by new pile foundation. The deck and sidewalks will be cast-in-place. The parapet will be precast concrete.	Yes	\$4,550,000	\$3,429,000	<ul style="list-style-type: none"> Complete replacement of superstructure and substructure assures a very long design life. One span bridge eliminates the scour issue at the pier. Steel girders are re-buildable. It is easier to inspect the steel girders. The damage to steel structure is easily noticeable More spacing are provide between the girders. It is easier for utility installation. 	<ul style="list-style-type: none"> Deeper super structure depth due to reducing the span numbers. The total construction cost is higher than the concrete beam option. It requires higher maintenance cost than concrete beam option. It requires longer installation time. Less flexibility of the staging location for future deck replacement.
Alternative 3 –Two Spans Prestressed Concrete Box Beams w/CIP Deck and Substructure Replacement	The existing concrete deck, parapets, sidewalks, floor-beams, and stringers, pier and abutments will be removed. The superstructure will be replaced by adjacent prestressed concrete box beams and CIP concrete deck. The existing abutments, pier and wingwalls will be replaced. The new substructure will be supported by new pile foundation. The deck and sidewalks will be cast-in-place. The parapet will be precast concrete.	Yes	\$4,420,000	\$3,429,000	<ul style="list-style-type: none"> Complete replacement of superstructure and substructure assures a very long design life. Shallower super-structure depth compared to one span bridge. Concrete beams require less maintenance cost comparing the steel plate girders option. Adjacent box beams will provide more convenient for the future deck replacement. 	<ul style="list-style-type: none"> Additional cost for the scour protection for the pier. Higher construction cost. Pre-stressed concrete stress loss It is difficult to thoroughly inspect all the beams. Cost of repair/replace of beams is higher than steel girder option. Less flexibility to install the utility. It is difficult to reinforce the beam in the future.
Alternative 4 – Bridge Rehabilitation	The concrete repair includes the existing substructure, floor beams, stringers, bridge deck and sidewalk parapets. The existing traffic barriers will be modified to provide more protection to the travel public. The west approach slab will be rebuilt to meet the proposed roadway profile.	Yes	\$858, 000	\$3,429,000	<ul style="list-style-type: none"> Lower cost compared to the bridge replacement option. Construction duration is shorter compared to the bridge replacement option. The construction impact area is much smaller. 	<ul style="list-style-type: none"> Higher maintenance cost in the future. The service life is shorter compared to the bridge replacement option. Lower load rating. Multi use path is not provided on the bridge. It is difficult to thoroughly inspect all the beams.

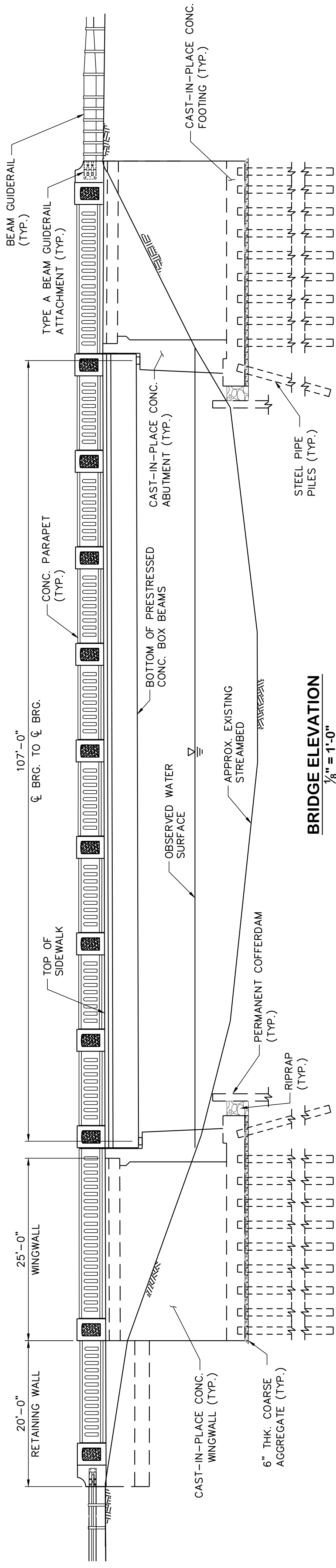
- ROW and Access costs are not included in the Construction Cost. Parcel acquisitions are not expected, however construction easements will be necessary.

Engineer's Estimate-Alternative 1

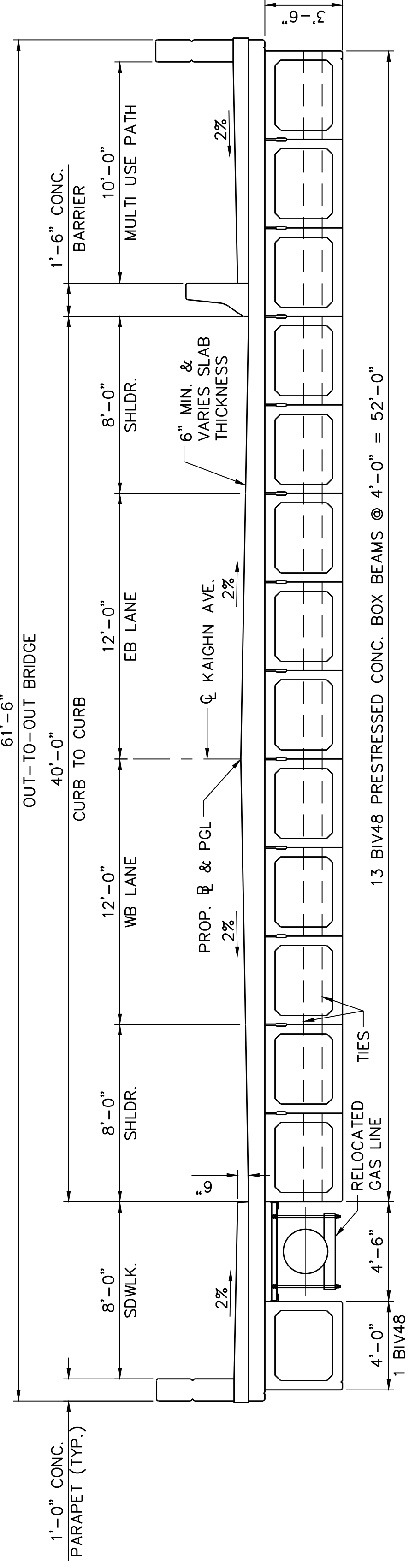
ITEM NO.	CONSTRUCTION ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL QUANTITY	I & W DIR'D	TOTAL ITEM COST
1	CLEARING SITE, BRIDGE (CR 607)	LS	\$400,000.00	1		\$400,000.00
2	EXCAVATION, UNCLASSIFIED	CY	\$40.00	2020		\$80,800.00
3	EXCAVATION, REGULATED MATERIAL	CY	\$30.00	2020		\$60,600.00
4	DISPOSAL OF REGULATED MATERIAL	CY	\$70.00	2020		\$141,400.00
5	I-9 SOIL AGGREGATE	CY	\$60.00	590		\$35,400.00
6	COARSE AGGREGATE, SIZE NO. 57	CY	\$45.00	110		\$4,950.00
7	PERMANENT COFFERDAM	LS	\$100,000.00	1		\$100,000.00
8	TEST PILE, FURNISHED (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$40.00	300		\$12,000.00
9	TEST PILE, DRIVEN (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$75.00	288		\$21,600.00
10	DYNAMIC PILE LOAD TEST	UNIT	\$2,000.00	6		\$12,000.00
11	CONCRETE-FILLED STEEL PIPE PILE, FURNISHED (12" DIA)	LF	\$40.00	7748		\$309,920.00
12	CONCRETE-FILLED STEEL PIPE PILE, DRIVEN (12" DIA)	LF	\$30.00	7748		\$232,440.00
13	REINFORCEMENT STEEL, GALVANIZED	LB	\$2.10	147000		\$308,700.00
14	CONCRETE FOOTING	CY	\$600.00	340		\$204,000.00
15	CONCRETE WINGWALL	CY	\$1,000.00	160		\$160,000.00
16	CONCRETE ABUTMENT WALL	CY	\$1,000.00	280		\$280,000.00
17	PRESTRESSED CONCRETE BOX BEAM (TYPE BIV-48), 48"X42"	LF	\$210.00	1530		\$321,300.00
18	4"x4" PERFORMED ELASTOMERIC JOINT ASSEMBLY	LF	\$350.00	130		\$45,500.00
19	CONCRETE BRIDGE DECK, HPC	CY	\$850.00	160		\$136,000.00
20	CONCRETE BRIDGE SIDEWALK, HPC	CY	\$850.00	50		\$42,500.00
21	CONCRETE BRIDGE PARAPET, HPC	LF	\$230.00	490		\$112,700.00
22	CONCRETE BRIDGE APPROACH, HPC	CY	\$650.00	150		\$97,500.00
23	NAMEPLATE, STATUARY BRONZE	UNIT	\$2,500.00	1		\$2,500.00
	TOTAL					\$3,121,810.00
	Say					\$3,200,000.00
	10% Mobilization					\$320,000.00
	10% MPT					\$320,000.00
	10% Contingency					\$320,000.00
	Total Cost, including Mobilization, MPT and Contingency					\$4,160,000.00



BRIDGE PLAN
3/32" = 1'-0"



BRIDGE ELEVATION
3/8" = 1'-0"



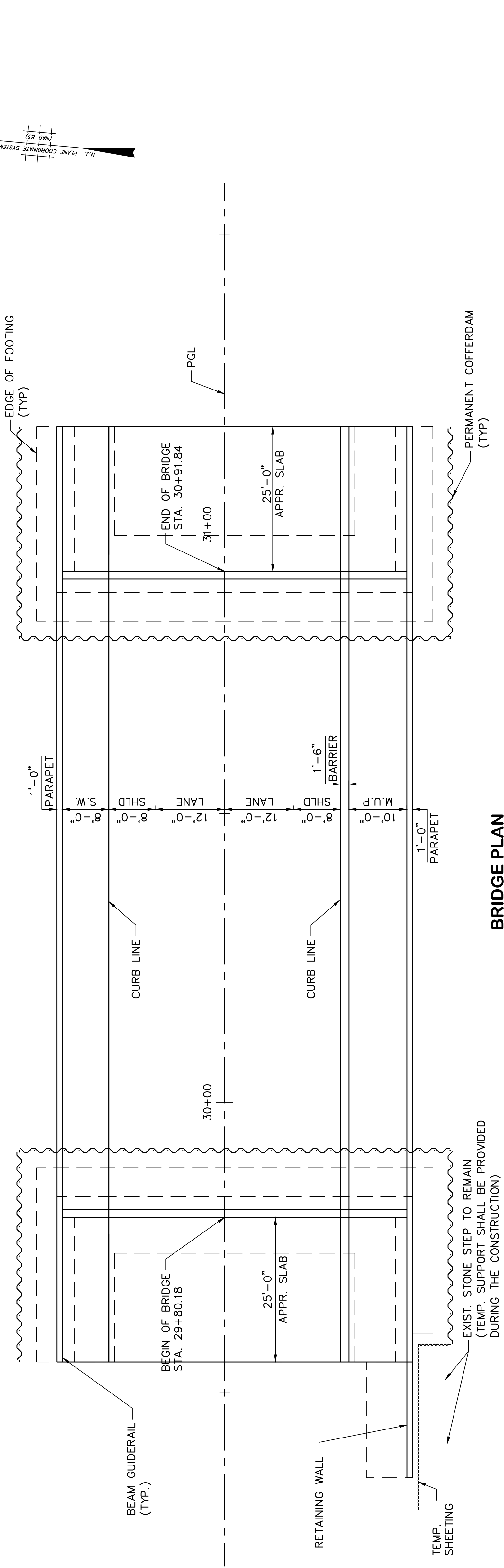
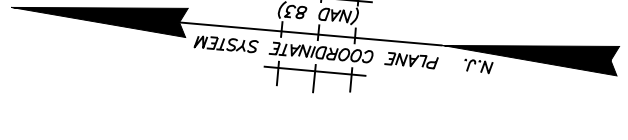
BRIDGE CROSS SECTION (LOOKING EAST)
1/4" = 1'-0"

**PRELIMINARY PREFERRED
ALTERNATIVE (PPA)**

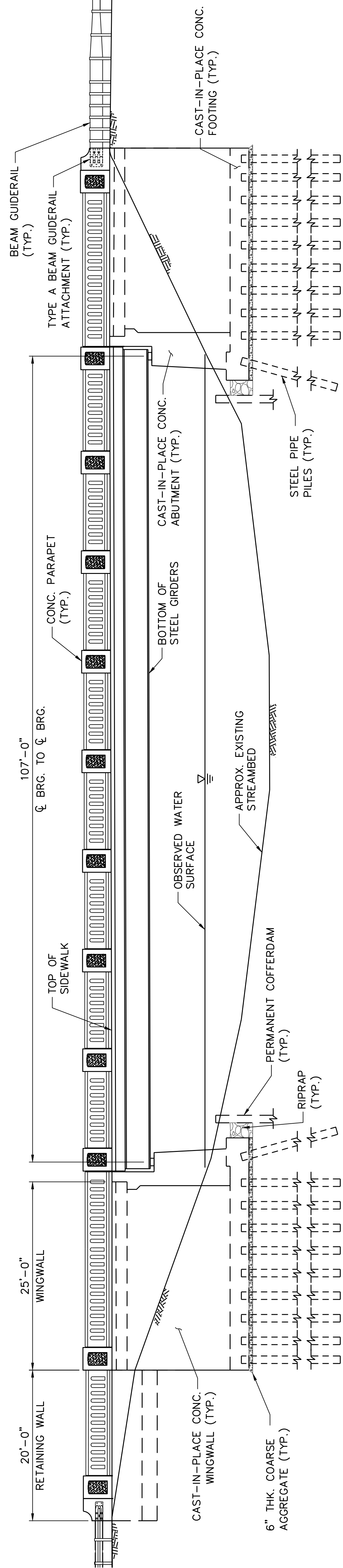
IH ENGINEERS, P.C. 103 COLLEGE ROAD EAST PRINCETON, NJ 08540		Camden County Department of Public Works Division of Engineering Office of the County Engineer 2311 Egg Harbor Road, Lindenwold, New Jersey 08021	
APPROVED: _____ DATE: _____ JOHN W. KORUNOW JR IH ENGINEERS, P.C. N.J. PROFESSIONAL LICENSE NO. GE04034200		KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY	
Scale: AS SHOWN Sheet No. _____ of _____ Date: 2016		BRIDGE ALTERNATIVE - 1	

Engineer's Estimate-Alternative 2

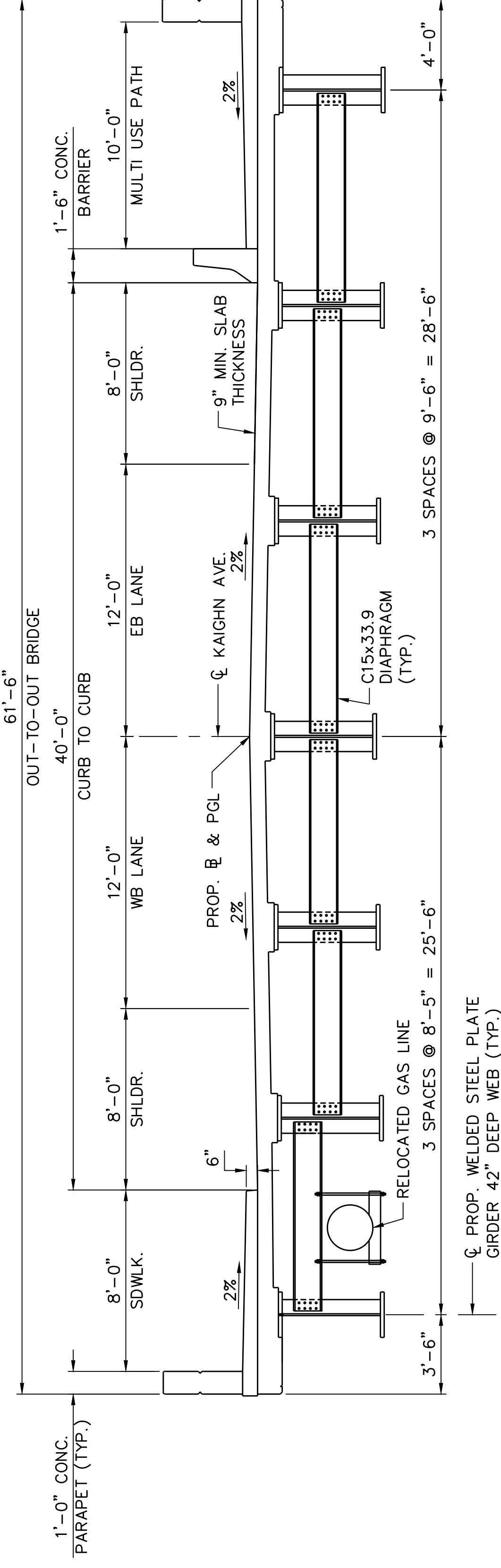
ITEM NO.	CONSTRUCTION ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL QUANTITY	I & W DIR'D	TOTAL ITEM COST
1	CLEARING SITE, BRIDGE (CR 607)	LS	\$400,000.00	1		\$400,000.00
2	EXCAVATION, UNCLASSIFIED	CY	\$40.00	2020		\$80,800.00
3	EXCAVATION, REGULATED MATERIAL	CY	\$30.00	2020		\$60,600.00
4	DISPOSAL OF REGULATED MATERIAL	CY	\$70.00	2020		\$141,400.00
5	I-9 SOIL AGGREGATE	CY	\$60.00	590		\$35,400.00
6	COARSE AGGREGATE, SIZE NO. 57	CY	\$45.00	110		\$4,950.00
7	PERMANENT COFFERDAM	LS	\$100,000.00	1		\$100,000.00
8	TEST PILE, FURNISHED (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$40.00	300		\$12,000.00
9	TEST PILE, DRIVEN (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$75.00	288		\$21,600.00
10	DYNAMIC PILE LOAD TEST	UNIT	\$2,000.00	6		\$12,000.00
11	CONCRETE-FILLED STEEL PIPE PILE, FURNISHED (12" DIA)	LF	\$40.00	7748		\$309,920.00
12	CONCRETE-FILLED STEEL PIPE PILE, DRIVEN (12" DIA)	LF	\$30.00	7748		\$232,440.00
13	REINFORCEMENT STEEL, GALVANIZED	LB	\$2.10	147000		\$308,700.00
14	CONCRETE FOOTING	CY	\$600.00	340		\$204,000.00
15	CONCRETE WINGWALL	CY	\$1,000.00	160		\$160,000.00
16	CONCRETE ABUTMENT WALL	CY	\$1,000.00	280		\$280,000.00
17	STRUCTURAL STEEL	LBS	\$2.10	284000		\$596,400.00
18	STRUCTURAL BEARING ASSEMBLY	UNIT	\$3,300.00	14		\$46,200.00
19	SHEAR CONNECTOR	UNIT	\$5.00	2430		\$12,150.00
20	STRIP SEAL EXPANSION JOINT ASSEMBLY	LF	\$350.00	130		\$45,500.00
21	CONCRETE BRIDGE DECK, HPC	CY	\$850.00	160		\$136,000.00
22	CONCRETE BRIDGE SIDEWALK, HPC	CY	\$850.00	50		\$42,500.00
23	CONCRETE BRIDGE PARAPET, HPC	LF	\$230.00	490		\$112,700.00
24	CONCRETE BRIDGE APPROACH, HPC	CY	\$650.00	150		\$97,500.00
25	NAMEPLATE, STATUARY BRONZE	UNIT	\$2,500.00	1		\$2,500.00
	TOTAL					\$3,455,260.00
	Say					\$3,500,000.00
	10% Mobilization					\$350,000.00
	10% MPT					\$350,000.00
	10% Contingency					\$350,000.00
	Total Cost, including Mobilization, MPT and Contingency					\$4,550,000.00



BRIDGE PLAN
3/32" = 1'-0"



BRIDGE ELEVATION
1/8" = 1'-0"

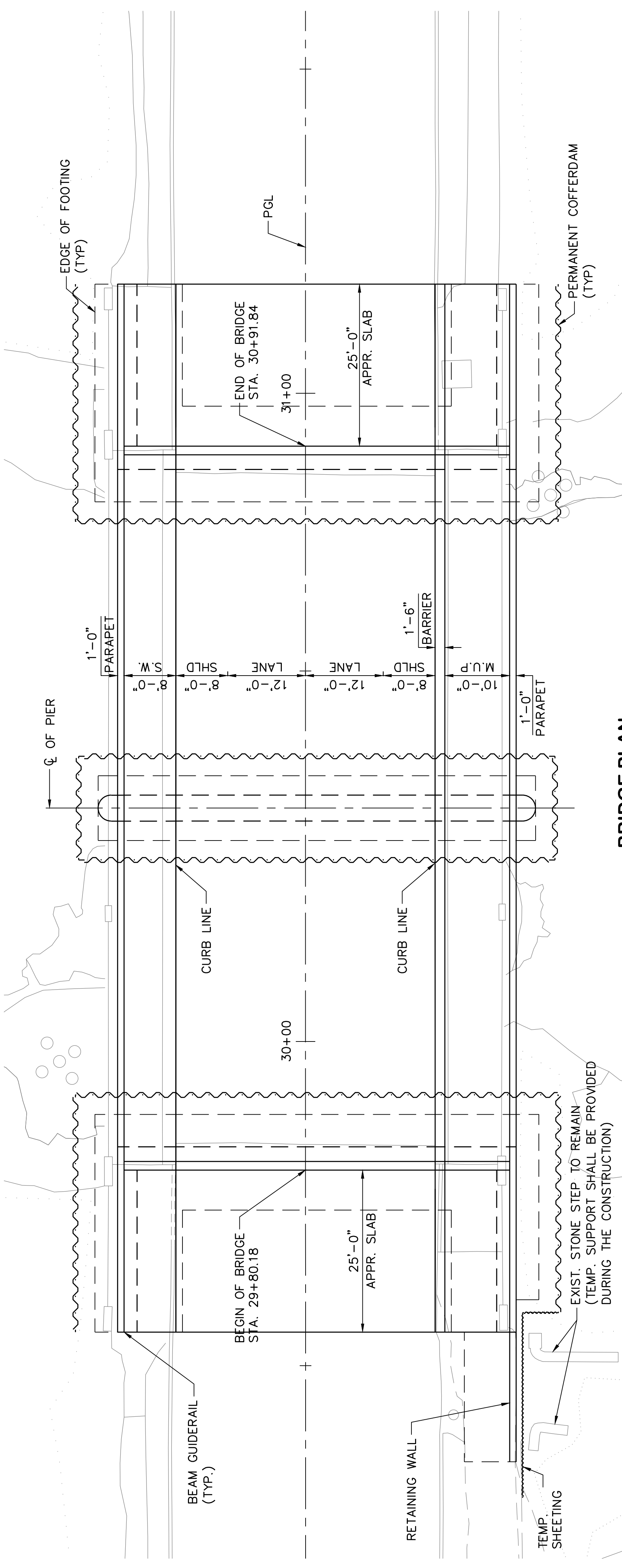
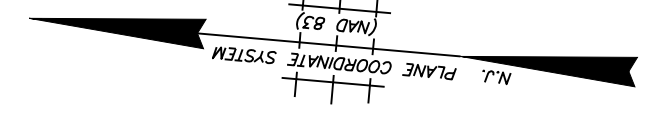


BRIDGE CROSS SECTION (LOOKING EAST)
1/4" = 1'-0"

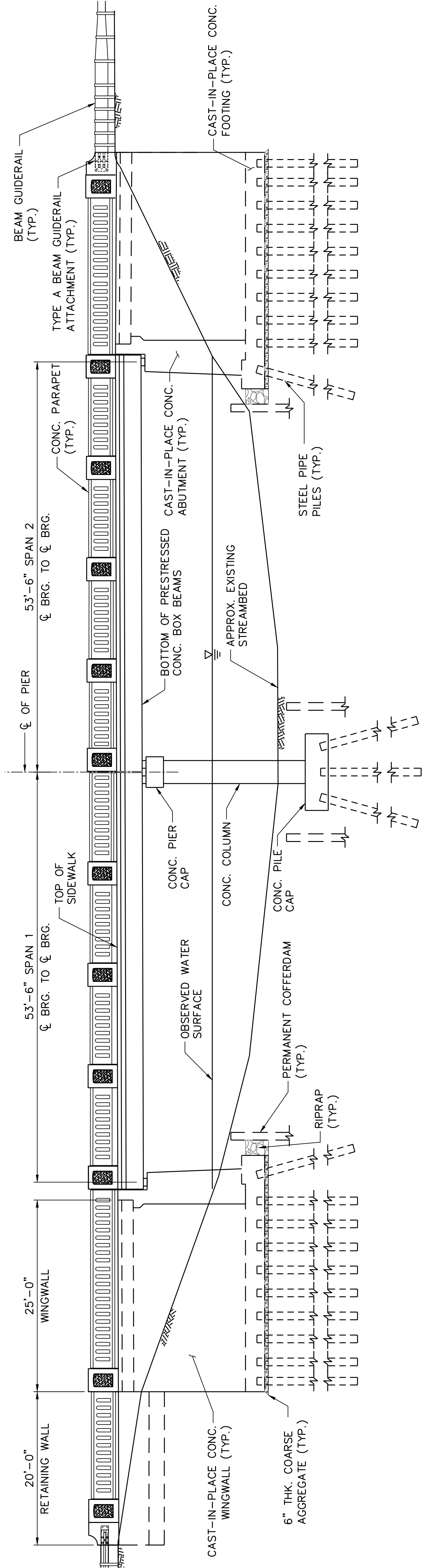
		Camden County Department of Public Works Division of Engineering Office of the County Engineer 2311 Egg Harbor Road, Lindenwold, New Jersey 08021	
IH ENGINEERS, P.C. 103 COLLEGE ROAD EAST PRINCETON, NJ 08540		KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY	
APPROVED: _____ DATE: _____ JOHN W. KORUNOW JR IH ENGINEERS, P.C. N.J. PROFESSIONAL LICENSE NO. GE04034200		BRIDGE ALTERNATIVE - 2	
NO. _____ DATE _____ BY _____	NO. _____ DATE _____ BY _____	NO. _____ DATE _____ BY _____	NO. _____ DATE _____ BY _____
DESIGNED BY XXXX	CHECKED BY XXXX	DRAWN BY XXXX	APPROVED BY XXXX
Scale: AS SHOWN Sheet No. _____ of _____ Date: 2016			

Engineer's Estimate-Alternative 3

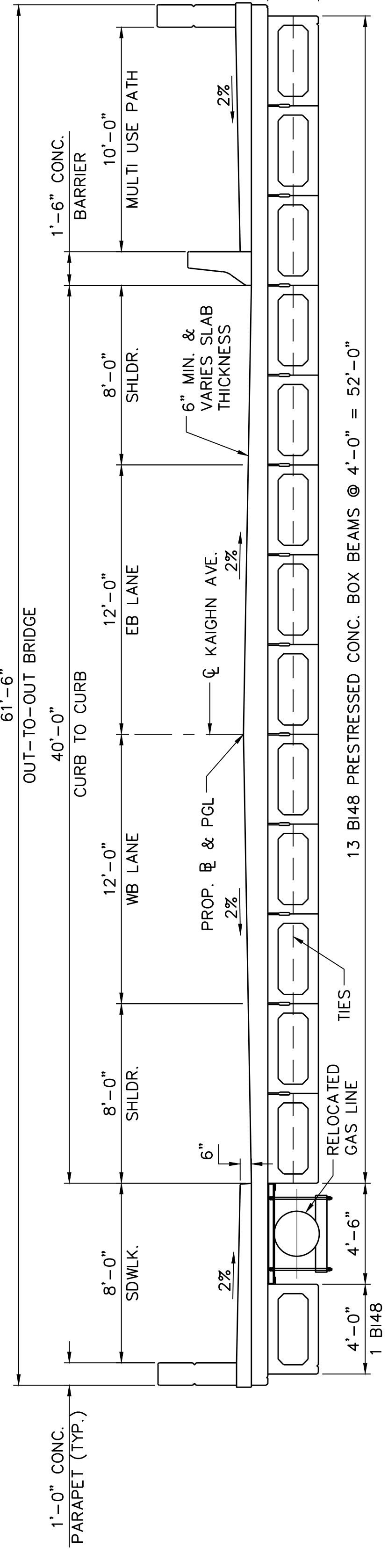
ITEM NO.	CONSTRUCTION ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL QUANTITY	I & W DIR'D	TOTAL ITEM COST
1	CLEARING SITE, BRIDGE (CR 607)	LS	\$400,000.00	1		\$400,000.00
2	EXCAVATION, UNCLASSIFIED	CY	\$40.00	2065		\$82,600.00
3	EXCAVATION, REGULATED MATERIAL	CY	\$30.00	2065		\$61,950.00
4	DISPOSAL OF REGULATED MATERIAL	CY	\$70.00	2065		\$144,550.00
3	I-9 SOIL AGGREGATE	CY	\$60.00	640		\$38,400.00
4	COARSE AGGREGATE, SIZE NO. 57	CY	\$45.00	120		\$5,400.00
5	PERMANENT COFFERDAM	LS	\$120,000.00	1		\$120,000.00
6	TEST PILE, FURNISHED (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$40.00	450		\$18,000.00
7	TEST PILE, DRIVEN (12" DIA CONCRETE FILLED STEEL PIPE PILE)	LF	\$75.00	432		\$32,400.00
8	DYNAMIC PILE LOAD TEST	UNIT	\$2,000.00	9		\$18,000.00
9	CONCRETE-FILLED STEEL PIPE PILE, FURNISHED (12" DIA)	LF	\$40.00	9645		\$385,800.00
10	CONCRETE-FILLED STEEL PIPE PILE, DRIVEN (12" DIA)	LF	\$30.00	9645		\$289,350.00
11	REINFORCEMENT STEEL, GALVANIZED	LB	\$2.10	165000		\$346,500.00
12	CONCRETE FOOTING	CY	\$600.00	410		\$246,000.00
13	CONCRETE WINGWALL	CY	\$1,000.00	160		\$160,000.00
14	CONCRETE ABUTMENT WALL	CY	\$1,000.00	280		\$280,000.00
15	CONCRETE PIER COLUMN AND CAP	CY	\$1,250.00	60		\$75,000.00
16	PRESTRESSED CONCRETE BOX BEAM (TYPE BI-48), 48"X27"	LF	\$150.00	1530		\$229,500.00
17	4"x 4" PREFORMED ELASTOMERIC JOINT ASSEMBLY	LF	\$350.00	195		\$68,250.00
18	CONCRETE BRIDGE DECK, HPC	CY	\$850.00	160		\$136,000.00
19	CONCRETE BRIDGE SIDEWALK, HPC	CY	\$850.00	50		\$42,500.00
20	CONCRETE BRIDGE PARAPET, HPC	LF	\$230.00	490		\$112,700.00
21	CONCRETE BRIDGE APPROACH, HPC	CY	\$650.00	150		\$97,500.00
22	NAMEPLATE, STATUARY BRONZE	UNIT	\$2,500.00	1		\$2,500.00
	TOTAL					\$3,392,900.00
	Say					\$3,400,000.00
	10% Mobilization					\$340,000.00
	10% MPT					\$340,000.00
	10% Contingency					\$340,000.00
	Total Cost, including Mobilization, MPT and Contingency					\$4,420,000.00



BRIDGE PLAN
3/32" = 1'-0"



BRIDGE ELEVATION
1/8" = 1'-0"



BRIDGE CROSS SECTION (LOOKING EAST)
1/4" = 1'-0"

		IH ENGINEERS, P.C. 103 COLLEGE ROAD EAST PRINCETON, NJ 08540	
APPROVED: _____ DATE: _____		JOHN W. KORUNOW JR IH ENGINEERS, P.C. N.J. PROFESSIONAL LICENSE NO. GE04034200	
Revisions NO. DATE BY	Designed By XXX	Drawn By XXX	Scale: AS SHOWN
Checked By XX	Approved By XX	Sheet No. of	Date: 2016
Camden County Department of Public Works Division of Engineering Office of the County Engineer 2311 Egg Harbor Road, Lindenwold, New Jersey 08021		BRIDGE ALTERNATIVE - 3	
KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY			

KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER

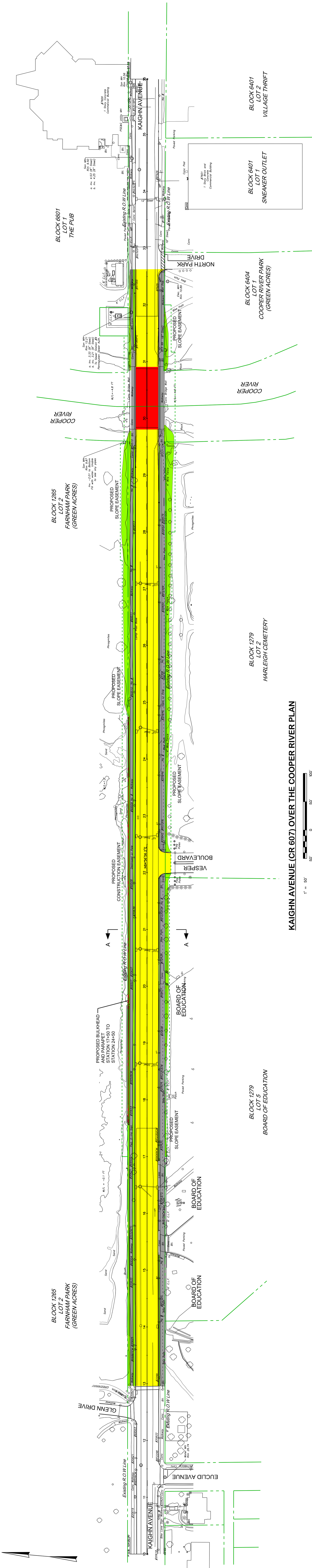
Engineer's Estimate-Alternative 4

ITEM NO.	CONSTRUCTION ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL QUANTITY	I & W DIR'D	TOTAL ITEM COST
1	SUBSTRUCTURE CONCRETE REPAIR	SF	\$300.00	300		\$90,000.00
2	SUPERSTRUCTURE CONCRETE REPAIR	SF	\$330.00	500		\$165,000.00
3	PARAPET MODIFICATIONS	LF	\$550.00	320		\$176,000.00
4	PARTIAL DEPTH CONCRETE REPAIR	SY	\$660.00	90		\$59,400.00
5	BARRIER PARAPET MODIFICATIONS	LF	\$678.00	220		\$149,160.00
6	CONCRETE BRIDGE APPROACH, HPC	CY	\$150.00	80		\$12,000.00
	TOTAL					\$651,560.00
	Say					\$660,000.00
	10% Mobilization					\$66,000.00
	10% MPT					\$66,000.00
	10% Contingency					\$66,000.00
	Total Cost, including Mobilization, MPT and Contingency					\$858,000.00

KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER

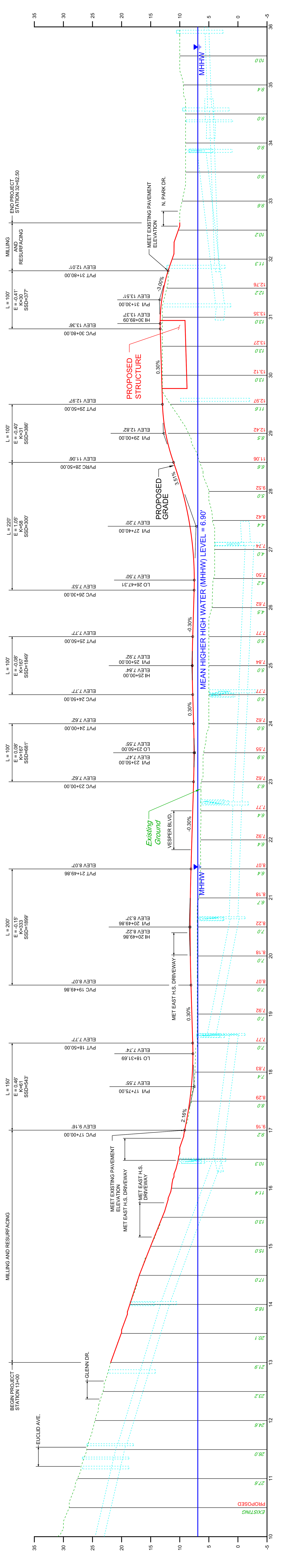
Engineer's Estimate-Roadway - January 13, 2017

ITEM NO.	CONSTRUCTION ITEM DESCRIPTION	TOTAL ITEM COST
1	EARTHWORK	\$280,000.00
2	PAVEMENT	\$540,000.00
3	BULKHEAD AND PARAPET	\$790,000.00
4	DRAINAGE	\$290,000.00
5	LANDSCAPE	\$60,000.00
6	FENCE AND GUIDE RAIL	\$60,000.00
7	SIDEWALK AND MULTI-USE PATH	\$175,000.00
8	UTILITY RELOCATIONS	\$300,000.00
9	CLEARING SITE	\$75,000.00
10	SIGNING AND STRIPING	\$30,000.00
11	DECORATIVE LIGHTING	\$100,000.00
	TOTAL	\$2,700,000.00
	10% Mobilization	\$270,000.00
	7% MPT (Detour)	\$189,000.00
	10% Contingency	\$270,000.00
	Total Cost, including Mobilization, MPT and Contingency	\$3,429,000.00



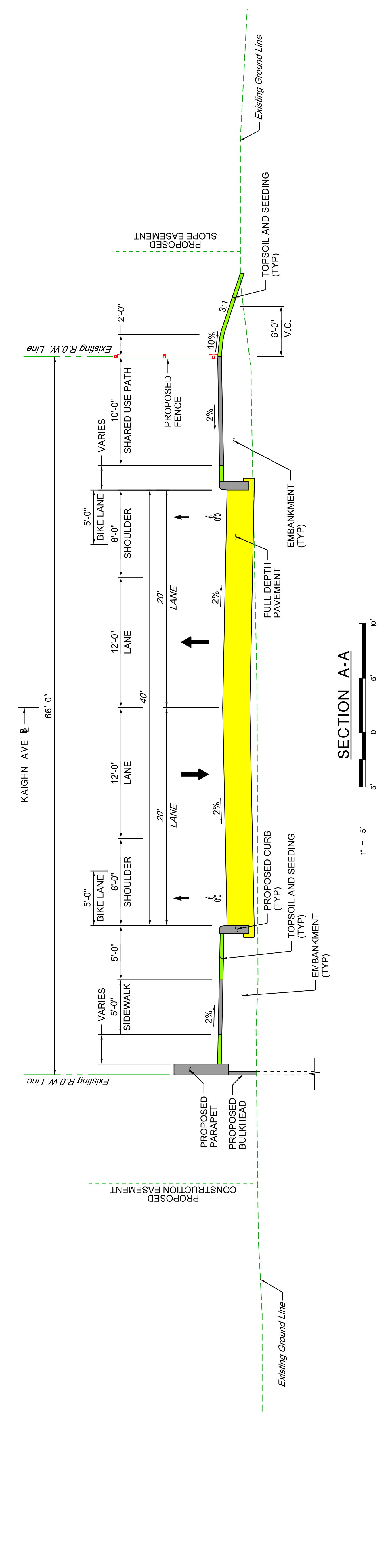
KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER PLAN

1" = 50'



KAIGHN AVENUE (CR 607) OVER THE COOPER RIVER PROFILE

1" = 50'



SECTION A-A

1" = 5'

CONCEPT DEVELOPMENT

LEGEND:

- PROPOSED ROADWAY
- PROPOSED SIDEWALK/ MULTI-USE PATH
- PROPOSED DRIVEWAY
- PROPOSED STRUCTURE
- PROPOSED GRASS

Camden County Department of Public Works
Office of the County Engineer
2311 Egg Harbor Road, Lindenwold, New Jersey 08021

**KAIGHN AVENUE (CR 607)
OVER THE COOPER RIVER**
CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

ROADWAY IMPROVEMENTS

EH Engineers, P.C.

Appendix K

Complete Streets Checklist

NJDOT Complete Streets Checklist

Background

The New Jersey Department of Transportation's Complete Streets Policy promotes a "comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers." The policy calls for the establishment of a checklist to address pedestrian, bicyclist and transit accommodations "with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable."

Complete Streets Checklist

The following checklist is an accompaniment to NJDOT's Complete Streets Policy and has been developed to assist Project Managers and designers develop proposed alternatives in adherence to the policy. Being in compliance with the policy means that Project Managers and designers plan for, design, and construct all transportation projects to provide appropriate accommodation for bicyclists, pedestrians, and transit users on New Jersey's roadways, in addition to those provided for motorists. It includes people of all ages and abilities. The checklist applies to all NJDOT projects that undergo the Capital Project Delivery (CPD) Process and is intended for use on projects during the earliest stages of the Concept Development or Preliminary Engineering Phase so that any pedestrian or bicycle considerations are included in the project budget. The Project Manager is responsible for completing the checklist and must work with the Designer to ensure that the checklist has been completed prior to advancement of a project to Final Design.

Using the Complete Streets Checklist

The Complete Streets Checklist is a tool to be used by Project Managers and designers throughout Concept Development and Preliminary Engineering to ensure that all developed alternatives reflect compliance with the Policy. When completing the checklist, a brief description is required for each "**Item to be Addressed**" as a means to document that the item has been considered and can include supporting documentation.

NJDOT Complete Streets Checklist

CONCEPT DEVELOPMENT CHECKLIST

Instructions:

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Existing Bicycle, Pedestrian and Transit Accommodations</i>	Are there accommodations for bicyclists, pedestrians (including ADA compliance) and transit users included on or crossing the current facility? Examples include (but are not limited to): Sidewalks, public seating, bike racks, and transit shelters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The roadway and bridge has an 8' wide sidewalk on the north side and a 10' wide multiuse path on the south side. The shoulders will also have striped bicycle lanes in both directions
<i>Existing Bicycle and Pedestrian Operations</i>	Has the existing bicycle and pedestrian suitability or level of service on the current transportation facility been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	During our field visit, cyclist and pedestrian were observed.
	Have the bicycle and pedestrian conditions within the study area, including pedestrian and/or bicyclist treatments, volumes, important connections and lighting been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	An 8' multiuse path exists on the south side of the roadway and bridge.
	Do bicyclists/pedestrians regularly use the transportation facility for commuting or recreation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cyclists or pedestrians were observed during field visits. Farnham Park, Camden High School and High School Athletic Fields are near the project.
	Are there physical or perceived impediments to bicyclist or pedestrian use of the transportation facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sidewalks are also on both approaches to the bridge
	Is there a higher than normal incidence of bicyclist/pedestrian crashes within the study area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No bicyclist or pedestrian crashes have been recorded

NJDOT Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
	Have the existing volumes of pedestrian and/or bicyclist crossing activity at intersections including midblock and nighttime crossing been collected/provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is no volume data for pedestrian or bicycle crossing activity during the day or at night
<i>Existing Transit Operations</i>	Are there existing transit facilities within the study area, including bus and train stops/stations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no transit facilities within study area
	Is the transportation facility on a transit route?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no transit facilities within study area
	Is the transportation facility within two miles of "park and ride" or "kiss and go" lots?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is no transportation facility within two miles of study area.
	Are there existing or proposed bicycle racks, shelters, or parking available at these lots or transit stations? Are there bike racks on buses that travel along the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Based on a search and field observations, there are none of these facilities within or near the limit of the project
<i>Existing Motor Vehicle Operations</i>	Are there existing concerns within the study area, regarding motor vehicle safety, traffic volumes/congestion or access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is no existing concern within study area regarding motor vehicle safety, traffic volumes, congestion or access.
<i>Existing Truck/Freight Operations</i>	Are there existing concerns within the study area, regarding truck/freight safety, volumes, or access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no concerns within the project limits.
<i>Existing Access and Mobility</i>	Are there any existing access or mobility considerations, including ADA compliance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no existing access or mobility considerations.
	Are there any schools, hospitals, senior care facilities, educational buildings, community centers, residences or businesses of persons with disabilities within or proximate to the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Businesses to the east of the project include The Pub, Sneaker Outlet and Village Thrift. Educational uses in the area include Camden

NJDOT Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
					High School, High School Athletic Fields, the Board of Education property (previously MetEast High School), Cooper B. Hatch Family School, The open space areas includes Farnham Park and Camden County Veterans Cemetery. Religious institutions in the area include Victory Temple Community Church and Parkside United Methodist Church. The residential uses include the Boys and Girls Club of Camden County and the Parkside residential neighborhood.
<i>Land Usage</i>	Have you identified the predominant land uses and densities within the study area, including any historic districts or special zoning districts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Land uses and densities are identified (Refer Appendix G of Concept Development Report). Cooper River Park Historic District is located along the southern median of Kaighns Avenue. There are no specialized zoning districts within study area.
	Is the transportation facility in a high-density land use area that has pedestrian/bicycle/motor vehicle and transit traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are no transportation facility within project limit

NJDOT Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Major Sites</i>	Have you identified the major sites, destinations, and trip generators within or proximate to the study area, including prominent landmarks, employment centers, recreation, commercial, cultural and civic institutions, and public spaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The open space areas include Farnham Park and Camden County Veterans Cemetery. Educational uses in the area include Camden High School, High School Athletic Fields, the Board of Education property (previously MetEast High School), Cooper B. Hatch Family School
<i>Existing Streetscape</i>	Are there existing street trees, planters, buffer strips, or other environmental enhancements such as drainage swales within the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There are a few street trees, but no planters. Buffer strips exist between curb and sidewalk on both sides of roadway.
<i>Existing Plans</i>	Are there any comprehensive planning documents that address bicyclist, pedestrian or transit user conditions within or proximate to the study area? Examples include (but are not limited to): <ul style="list-style-type: none"> • SRTS Travel Plans • Municipal or County Master or Redevelopment Plan • Local, County and Statewide Bicycle and Pedestrian Plans • Sidewalk Inventories • MPO Transportation Plan • NJDOT Designated Transit Village 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Following comprehensive planning documents: <ol style="list-style-type: none"> 1. Camden County - Bicycling & Multi-Use Trails Plan, 2015 2. Camden County Highway Plan - March 2015. 3. Master Plan City of Camden, NJ - March 2002. 4. Urban Supplement Report - City of Camden - September 2008.

NJDOT Complete Streets Checklist

PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
<p>The Preliminary Preferred Alternative (PPA) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation's Complete Streets Policy.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>The roadway and bridge has an 8' wide sidewalk on the north side and a 10' wide multiuse path on the south side. The shoulders will also have striped bicycle lanes in both directions</p>

Appendix L

Utility Correspondence

Utilities Information with PE Funding

Sr. No.	Company Address	Letter#1 Contact Info	Letter#2 Contact Info	Contact Info	Letter#1 Sent Date	Facility In Project	PE Fund Request	Utility Agreement Contact Info	Comments
1	Comcast 1846 N. West Blvd Vineland, NJ 08360 Office: 856-694-6018	Tony Voros, Construction Manager 1846 N. West Blvd Vineland, NJ 08360 Office: 856-694-6018		Kevin Giffins, Construction Coordinator Comcast Cable 1250 Haddonfield-Berlin Road Cherry Hill, NJ 08034 (856)669-0139 kevin_giffins@comcast.cable.com	20-Feb-17		\$2,500.00		Tenant to Verizon
2	PSE&G (Gas) 4000 Hadley Road, M/C 446 South Plainfield, NJ 07080	Mr. Len Pannucci, PMP Prog. Manager - 3rd Party Relocation (908)412-2228 (Tel)		Mr. Len Pannucci, PMP Prog. Manager - 3rd Party Relocation 4000 Hadley Road, M/C 446 South Plainfield, NJ 07080 (908)412-2228 (Tel) Len.Pannucci@pseg.com			\$15,000.00	Mr. Len Pannucci, PMP Prog. Manager - 3rd Party Relocation 4000 Hadley Road, M/C 446 South Plainfield, NJ 07080 (908)412-2228 (Tel) Len.Pannucci@pseg.com	
3	Sewer City of Camden 101 Newton Avenue Camden, NJ 08102	Mr. Pat Keating Department of Public Works Office: 856-757-7034 publicworks@ci.camden.nj.us			11-Jan-16				
4	Sewer Camden County M.U.A	Mr. James M. Costello 1465 Ferry Ave. Camden, NJ 08104 Office: 609-239-2405			11-Jan-16	No facility			See the Appendix for their response We only manger the County Interceptor System not the locate system we do not have anything on that bridge
5	Sewer Pennsauken Township	Mr. Joseph Scavuzzo Director 6725 Wayne Avenue Pennsauken, NJ 08110 Office: 856-663-0178 publicworks@twp.pennsauken.nj.us			11-Jan-16	No facility			
6	Water City of Camden 1056 wright Avenue, 3rd floor camden NJ 08103	Mr. Uzo Ahirakwe office: 856-757-7030			19-Jan-16		\$0.00		Received As-Built drawing from Orion Joyner
7	Merchantville-Pennsauken Water Commission 6751 Westfield Avenue Pennsauken, NJ 08110	Mr. Mike Saraceni Office: 856-663-0043 Cell: 609-685-5713 msaraceni@mpwvc.com			19-Jan-16	No Facility	\$0.00		
8	PSE&G (Electrical) 4000 Hadley Road, M/C 446 South Plainfield, NJ 07080	Mr. Len Pannucci, PMP Prog. Manager - 3rd Party Relocation (908)412-2228 (Tel)		Mr. Armando Rosario Sr. Engineering Plant Supervisor 300 New Albany Road Moorestown, NJ 08057 Office: 856-778-6814 armando.rosario@pseg.com	11-Jan-16		\$25,000.00	Mr. Len Pannucci, PMP Prog. Manager - 3rd Party Relocation 4000 Hadley Road, M/C 446 South Plainfield, NJ 07080 (908)412-2228 (Tel) Len.Pannucci@pseg.com	For Technical Nature - Armando Rosario For correspondence, information requests and contractual Document - Len Pannucci.
9	Verizon Verizon Communication - NJ Centralized Engineering Services 6000 Hadley Road South Plainfield, NJ 07080	Mr. Thomas Grabowski office: 908-412-6169 Cell: 917-565-4101		Mr. Thomas Reber Verizon-NJ, Inc. Engineer 10 Tansboro Road Berlin, NJ 08009 Office: 856-306-8606 thomas.l.reber@verizon.com	11-Jan-16		\$10,000.00	Frank Antisell Verizon-NJ, Inc. Manager Centralized Engineering Services 6000 Hadley Road South Plainfield, NJ 07080 Office: 908-4126160	Tenant : Comcast & Sunesys

DVRPC Utility Letter #1
Kaighn Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

February 15, 2017

Mr. Tony Voros
Construction Manager
Comcast
1846 N. West Blvd
Vineland, NJ 08360
Office: 856-694-6018
Cell: 609-280-2202

Re:
Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
City of Camden, Pennsauken Township.
Camden County

Project Designer:
IH Engineers, P.C.
103 College Road East, 1st Fl.
Princeton, NJ 08540
ATTN: John Korunow, P.E.
Phone: (609) 734-8400
Fax: (609) 734-8405
Email: jkorunow@ihengineers.com

CABLE UTILITY

Dear Parkinson:

The Delaware Valley Regional Planning Commission (DVRPC) in Cooperation with Camden County has contracted IH Engineers, P.C. for Local Concept Development (LCD) for Kaighn Avenue (CR 607) Over the Cooper River for Bridge Replacement and Roadway Flooding Improvements. The **Total approximate length of the project is 0.55 miles.**

This letter will serve to established an official contact with **Comcast Cable** and verify if you do have any facility in the project affected area. Please find enclosed project Location Map and Photos of existing condition of the project area, to give you a better understanding of proposed project. If your facility exists within the project area, please estimate and provide the amount of Preliminary Engineering (PE) expenses you may request to pay for your effort in assisting DVRPC in Cooperation with Camden County to investigate and verify the actual information and to develop accommodation schemes of all your facilities affected by the project.

Please complete the following questionnaire and return it to the Designer's Engineer by **February 28, 2017** If you prefer to respond by FAX, the number is in the caption above.

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.

The following companies are tenants on/in our facilities within the project limits:

The Company Engineer to be contacted is:

Name Kevin Giffins
Company Comcast Cable
Title Construction Coordinator
Address 1250 Haddonfield-Berlin Road
Cherry Hill, NJ 08034

Tel: 856-669-0139
Fax: _____
Email: kevin_giffins@comcast.cable.com

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ 2,500.00
(This amount is only an estimate)

We would like the DVRPC in Cooperation with Camden County to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction – Some or All? _____

Neither – the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.


John Korunow, P.E.

DEPARTMENT OF PUBLIC WORKS

Township of Pennsauken
5605 N. Crescent Blvd
Pennsauken, NJ 08110
(856)-663-0178

2/8/16

Fax

TO: John Korunow, P.E.

**FROM: J. SCAVUZZO,
DIRECTOR, PENNSAUKEN DPW**

PAGES: 4 + COVER

FAX: 609-734-8405

FAX: (856)-662-9508

PHONE: 609-734-8400

PHONE: 856-663-0178

SUBJECT: KAIGHN AVE (CR 607) PROJECT

COMMENTS:

- Urgent
- Please review
- Please comment
- For your records



103 College Road East, 1st Floor
Princeton, NJ 08540
T: 609-734-8400 F: 609-734-8405
www.ihengineers.com
Also In: Hackensack and Staten Island

DVRPC Utility Letter #1
Kaighn Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

January 11, 2016

Mr. Joseph Scavuzzo, Director
6725 Wayne Avenue
Pennsauken, NJ 08110
Office: 856-663-0178
Email: publicworks@twp.pennsauken.nj.us

Re:
Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
City of Camden, Pennsauken Township.
Camden County

Project Designer:
IH Engineers, P.C.
103 College Road East, 1st Fl.
Princeton, NJ 08540
ATTN: John Korunow, P.E.
Phone: (609) 734-8400
Fax: (609) 734-8405
Email: jkorunow@ihengineers.com

SEWER UTILITY

Dear Mr. Scavuzzo:

The Delaware Valley Regional Planning Commission (DVRPC) in Cooperation with Camden County has contracted IH Engineers, P.C. for Local Concept Development (LCD) for Kaighn Avenue (CR 607) Over the Cooper River for Bridge Replacement and Roadway Flooding Improvements. The Total approximate length of the project is 0.55 miles.

This letter will serve to established an official contact with Pennsauken Township and verify if you do have any facility in the project affected area. Please find enclosed project Location Map and Photos of existing condition of the project area, to give you a better understanding of proposed project. If your facility exists within the project area, please estimate and provide the amount of Preliminary Engineering (PE) expenses you may request to pay for your effort in assisting NJDOT to investigate and verify the actual information and to develop accommodation schemes of all your facilities affected by the project.

Please complete the following questionnaire and return it to the Designer's Engineer by **February 5, 2016**. If you prefer to respond by FAX, the number is in the caption above.

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- The following companies are tenants on/in our facilities within the project limits:

DVRPC Utility Letter #1
Kaign Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

The Company Engineer to be contacted is:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ _____
(This amount is only an estimate).

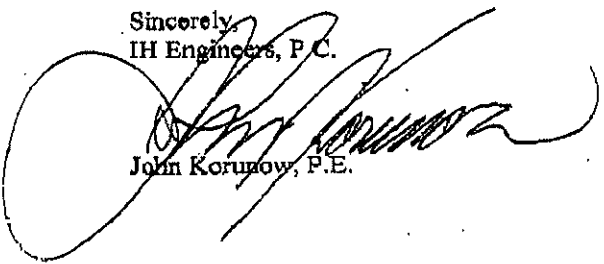
We would like the NJDOT to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

- Design/Engineering
- Construction - Some or All? _____
- Neither - the Company will perform (or arrange to have performed) all needed work.
- Not certain at this time.

End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.



John Korunow, P.E.



103 College Road East, 1st Floor
Princeton, NJ 08540
T: 609-734-8400 F: 609-734-8405
www.ihengineers.com
Also in: Hackensack and Staten Island

DVRPC Utility Letter #1
Kaighn Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

January 11, 2016

Mr. Joseph Scavuzzo, Director
6725 Wayne Avenue
Pennsauken, NJ 08110
Office: 856-663-0178
Email: publicworks@twp.pennsauken.nj.us

Re:
Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
City of Camden, Pennsauken Township,
Camden County

Project Designer:
IH Engineers, P.C.
103 College Road East, 1st Fl.
Princeton, NJ 08540
ATTN: John Korunow, P.E.
Phone: (609) 734-8400
Fax: (609) 734-8405
Email: jkorunow@ihengineers.com

SEWER UTILITY

Dear Mr. Scavuzzo:

The Delaware Valley Regional Planning Commission (DVRPC) in Cooperation with Camden County has contracted IH Engineers, P.C. for Local Concept Development (LCD) for Kaighn Avenue (CR 607) Over the Cooper River for Bridge Replacement and Roadway Flooding Improvements. The **Total approximate length of the project is 0.55 miles.**

This letter will serve to established an official contact with Pennsauken Township and verify if you do have any facility in the project affected area. Please find enclosed project Location Map and Photos of existing condition of the project area, to give you a better understanding of proposed project. If your facility exists within the project area, please estimate and provide the amount of Preliminary Engineering (PE) expenses you may request to pay for your effort in assisting DVRPC in Cooperation with Camden County to investigate and verify the actual information and to develop accommodation schemes of all your facilities affected by the project.

Please complete the following questionnaire and return it to the Designer's Engineer by **February 5, 2016**. If you prefer to respond by FAX, the number is in the caption above.

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- The following companies are tenants on/in our facilities within the project limits:

DVRPC Utility Letter #1
Kaigh Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

The Company Engineer to be contacted is:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ _____
(This amount is only an estimate)

We would like the DVRPC in Cooperation with Camden County to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction - Some or All? _____

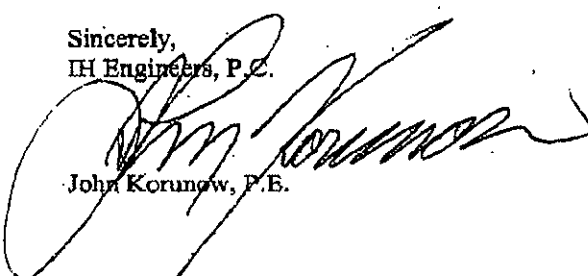
Neither - the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.


John Korunow, P.E.

Public Service Electric and Gas Company
Delivery Projects and Construction
4000 Hadley Road, South Plainfield, NJ 07080



January 20, 2016

Mr. John Korunow, PE.
Project Designer
IH Engineers, P.C.
103 College Road East, 1st Floor
Princeton, NJ 08540

**RE: Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
UPC No.: Unknown**

Dear Mr. Korunow:

I have received your letter and preliminary prints relative to the above referenced project. A cursory review of our records indicates we have **electric** facilities within the project limits as evident by the enclosed GIS one-line drawing. This drawing is being provided for your design purposes only; the actual location and/or depth of any facilities depicted on this drawing must be verified in the field by survey or excavating test holes where applicable.

Please be advised, our current operating guidelines preclude us from performing any additional facility record research, mark-ups, layout or design until a signed executed agreement has been received. In the interim, please continue to forward all correspondence, information requests and contractual documents to my attention. Any technical related questions should be directed to:

Mr. Armando Rosario
Sr. Engineering Plant Supervisor
300 New Albany Road
Moorestown, NJ 08057
(856) 778-6814
armando.rosario@pseg.com

Should you have any questions or concerns, please feel free to contact me directly at the above address, by phone at (908) 412-2228, or via e-mail at len.pannucci@pseg.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "L.A. Pannucci", is written over a large, stylized blue scribble.

L.A. Pannucci, PMP
Program Manager-3rd Party Relocation
Project & Construction Management

enclosures

c: Armando Rosario, Sr. EngPlant Supv-Southern (MC 117)
Stephen Payne-Project Manager-DP&C
File

DVRPC Utility Letter #1
Kaign Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

The Company Engineer to be contacted is:

Name * refer to letter *
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name * refer to letter *
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ 25,000
(This amount is only an estimate)

We would like the NJDOT to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction – Some or All? _____

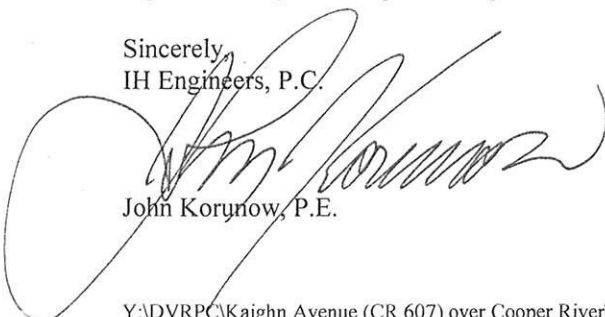
Neither – the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

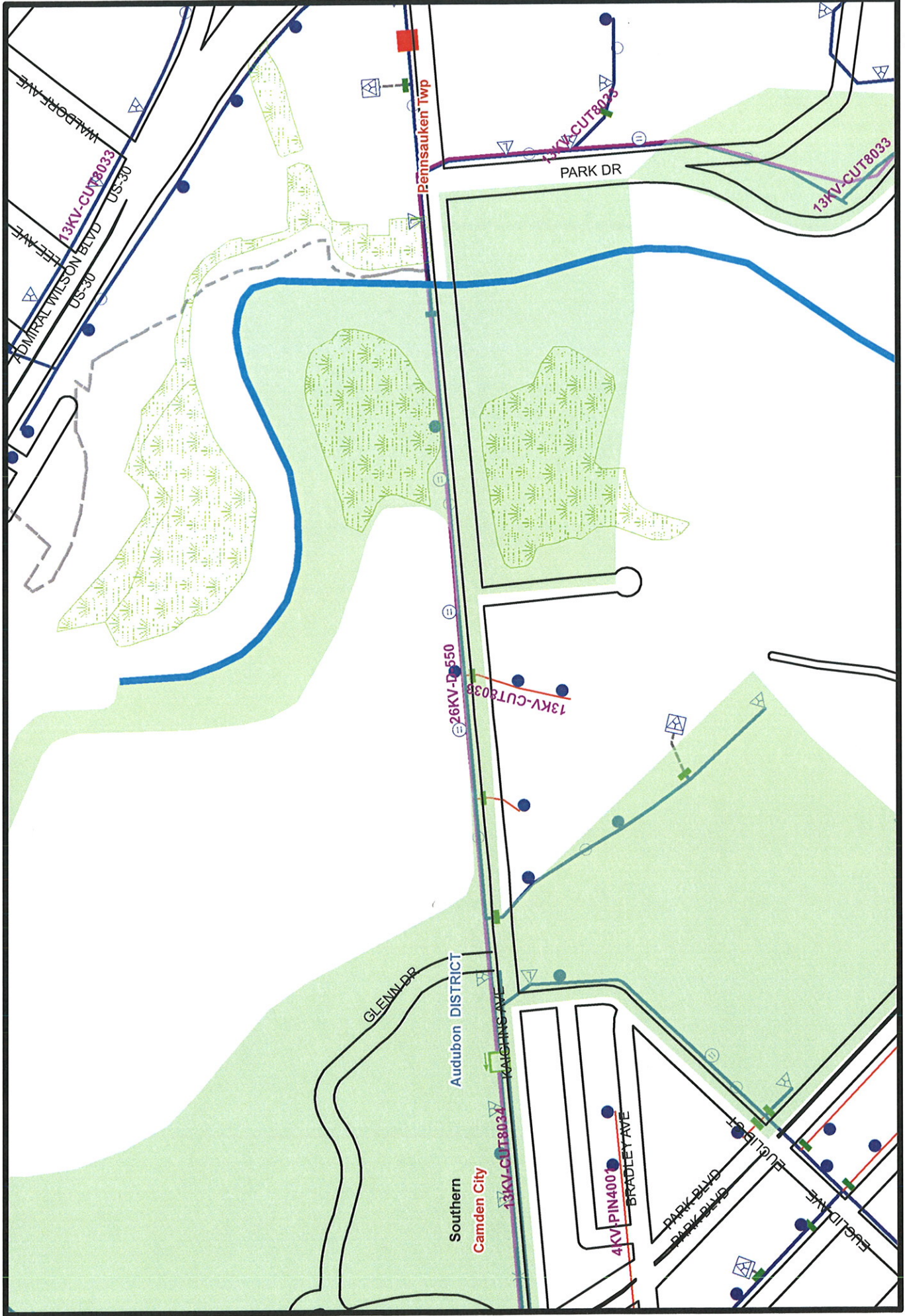
End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.


John Korunow, P.E.

DVRPC - Kaign Ave (CR 607) over Cooper River - IH Engineers. Pennsauken Twp. (Electric)



Public Service Electric and Gas Company
Delivery Projects and Construction
4000 Hadley Road, South Plainfield, NJ 07080



January 20, 2016

Mr. John Korunow, PE.
Project Designer
IH Engineers, P.C.
103 College Road East, 1st Floor
Princeton, NJ 08540

**RE: Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
UPC No.: Unknown**

Dear Mr. Korunow:

I have received your letter and location map relative to the above referenced project. A cursory review of our records indicates we have **gas** facilities within the project limits as evident by the enclosed GIS one-line drawing. This drawing is being provided for your design purposes only; the actual location and/or depth of any facilities depicted on this drawing must be verified in the field by excavating test holes where applicable. Please be advised, test holes specifically excavated for the purpose of locating gas facilities must be performed by an Operator Qualified contractor. These standards were developed and adopted to comply with minimum pipeline safety regulations and specifically, 49 CFR Part 192, Subpart N.

Please also be advised, our current operating guidelines preclude us from performing any additional facility record research, mark-ups, layout or design until a signed executed agreement has been received. In the interim, please continue to forward all correspondence, information requests and contractual documents to my attention.

Should you have any questions or concerns, please feel free to contact me directly at the above address, by phone at (908) 412-2228, or via e-mail at len.pannucci@pseg.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "L.A. Pannucci", is written over a faint, larger version of the same signature.

L.A. Pannucci, PMP
Program Manager-3rd Party Relocation
Delivery Projects & Construction

enclosures

c: Jim Venito, Sr. Dist Supv-Audubon Gas (MC114)
Charlie Miracola, Project Manager-DPC (430)
File

The Company Engineer to be contacted is:

Name * refer to letter *
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name * refer to letter *
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ 15,000
(This amount is only an estimate)

We would like the NJDOT to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction – Some or All? _____

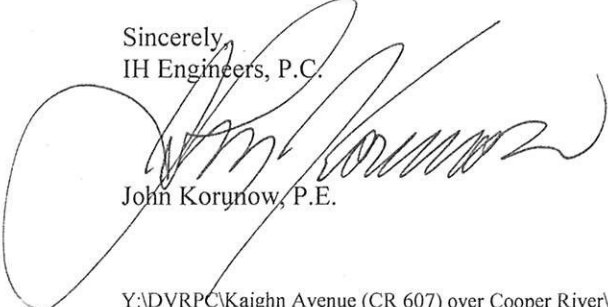
Neither – the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

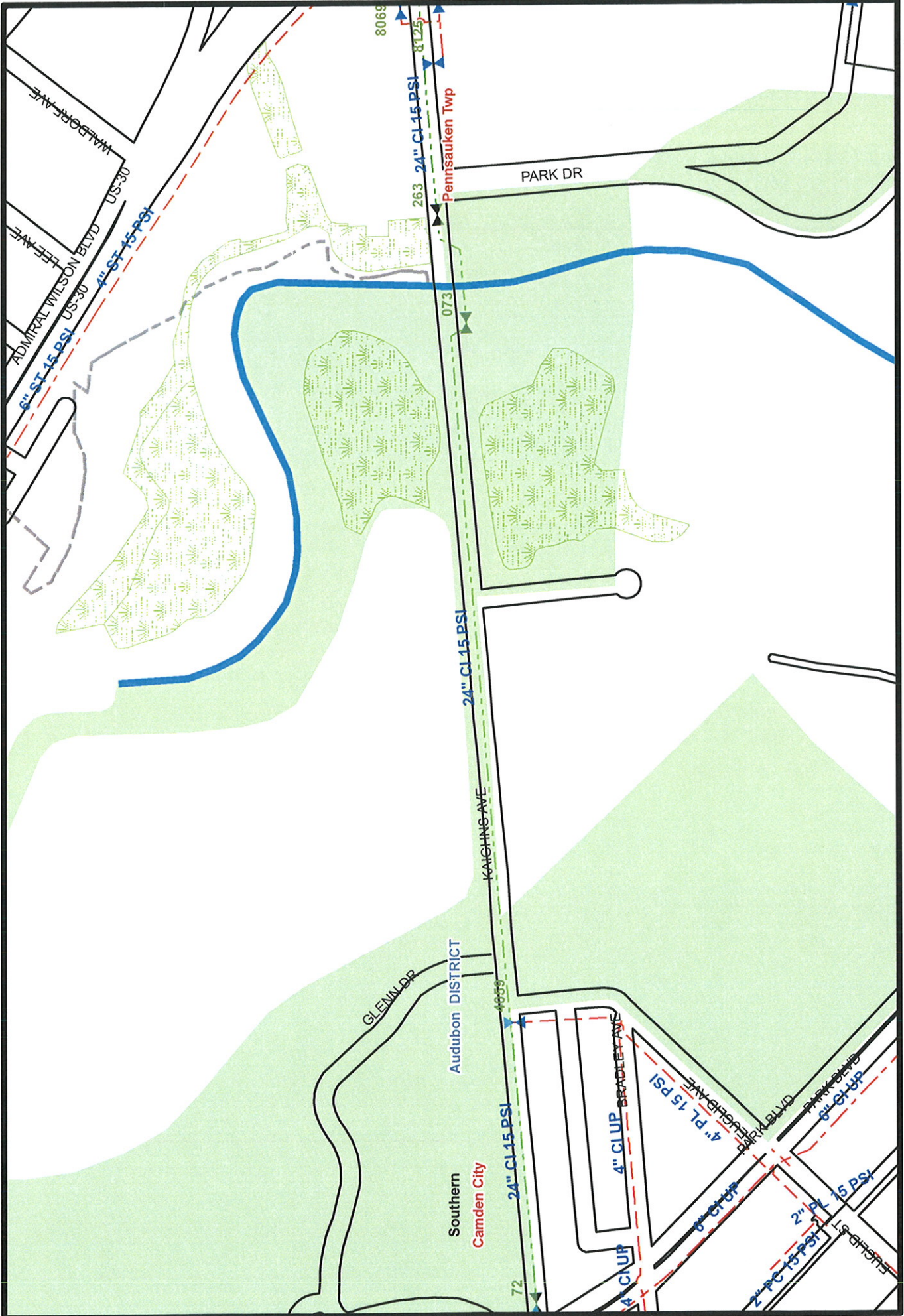
End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.


John Korunow, P.E.

DVRPC - Kaign Ave (CR 607) over Cooper River. Pennsauken Twp. (Gas)



DVRPC Utility Letter #1
Kaighn Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

January 11, 2016

Thomas Grabowski
Verizon Communications - NJ
Centralized Engineering Services
6000 Hadley Rd.
South Plainfield, NJ 07080
908-412-6169 Office
917-565-4101 Cell
thomas.j.grabowski@verizon.com

Re:

Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
City of Camden, Pennsauken Township.
Camden County

PHONE UTILITY

Project Designer:

IH Engineers, P.C.
103 College Road East, 1st Fl.
Princeton, NJ 08540
ATTN: John Korunow, P.E.
Phone: (609) 734-8400
Fax: (609) 734-8405
Email: jkorunow@ihengineers.com

Dear [Mr. Grabowski](#):

The Delaware Valley Regional Planning Commission (DVRPC) in Cooperation with Camden County has contracted IH Engineers, P.C. for Local Concept Development (LCD) for Kaighn Avenue (CR 607) Over the Cooper River for Bridge Replacement and Roadway Flooding Improvements. The **Total approximate length of the project is 0.55 miles.**

This letter will serve to established an official contact with [Verizon](#) and verify if you do have any facility in the project affected area. Please find enclosed project Location Map and Photos of existing condition of the project area, to give you a better understanding of proposed project. If your facility exists within the project area, please estimate and provide the amount of Preliminary Engineering (PE) expenses you may request to pay for your effort in assisting DVRPC in Cooperation with Camden County to investigate and verify the actual information and to develop accommodation schemes of all your facilities affected by the project.

Please complete the following questionnaire and return it to the Designer's Engineer by **February 5, 2016.** If you prefer to respond by FAX, the number is in the caption above.

We DO HAVE existing facilities within the project limits.

We DO NOT HAVE existing facilities within the project limits.

We HAVE PROPOSED facilities planned within the project limits.

The following companies are tenants on/in our facilities within the project limits:

_____ Comcast _____
_____ Sunesys _____

DVRPC Utility Letter #1
Kaigh Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

The Company Engineer to be contacted is:

Name Thomas Reber
Company Verizon
Title Engineer
Address 10 Tansboro Rd
Berlin, NJ 08009
Tel: 856-306-8606
Fax: 888-474-5055
Email: thomas.j.reber@verizon.com

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name Frank Antisell
Company Verizon
Title Manager - Centralized Engineering
Address 6000 Hadley Rd
S Plainfield, NJ 07080
Tel: 908-412-6160
Fax: 908-751-0704
Email: frank.t.antisell@verizon.com

The amount of Preliminary Engineering funding needed will be \$ 10,000
(This amount is only an estimate)

We would like the DVRPC in Cooperation with Camden County to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction – Some or All? _____

Neither – the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.

John Korunow, P.E.

DVRPC Utility Letter #1
Kaighn Ave (CR 607) Over the Cooper River
From (MP 0.0) to (MP 0.55)

January 11, 2016

Mr. Mike Saraceni
6751 Westfield Avenue
Pennsauken, NJ 08110
P: 856-663-0043
C: 609-685-5713
Email: msaraceni@mpwc.com

Re:
Kaighn Avenue (CR 607) over the Cooper River
From MP 0 to 0.55
Local Concept Development Study
City of Camden, Pennsauken Township.
Camden County

Project Designer:
IH Engineers, P.C.
103 College Road East, 1st Fl.
Princeton, NJ 08540
ATTN: John Korunow, P.E.
Phone: (609) 734-8400
Fax: (609) 734-8405
Email: jkorunow@ihengineers.com

WATER UTILITY

Dear Mr. Saraceni:

The Delaware Valley Regional Planning Commission (DVRPC) in Cooperation with Camden County has contracted IH Engineers, P.C. for Local Concept Development (LCD) for Kaighn Avenue (CR 607) Over the Cooper River for Bridge Replacement and Roadway Flooding Improvements. The **Total approximate length of the project is 0.55 miles.**

This letter will serve to establish an official contact with Merchantville-Pennsauken Water Commission and verify if you do have any facility in the project affected area. Please find enclosed project Location Map and Photos of existing condition of the project area, to give you a better understanding of proposed project. If your facility exists within the project area, please estimate and provide the amount of Preliminary Engineering (PE) expenses you may request to pay for your effort in assisting NJDOT to investigate and verify the actual information and to develop accommodation schemes of all your facilities affected by the project.

Please complete the following questionnaire and return it to the Designer's Engineer by **February 5, 2016**. If you prefer to respond by FAX, the number is in the caption above.

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.

The following companies are tenants on/in our facilities within the project limits:

The Company Engineer to be contacted is:

Name _____ N/A _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The UTILITY AGREEMENT shall be sent to the following person:

Same as above or fill in below:

Name _____ N/A _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
Email: _____

The amount of Preliminary Engineering funding needed will be \$ _____
(This amount is only an estimate)

We would like the NJDOT to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

Design/Engineering

Construction – Some or All? _____

Neither – the Company will perform (or arrange to have performed) all needed work.

Not certain at this time.

End of questionnaire.

If you have any further questions, please feel free to contact me.

Sincerely,
IH Engineers, P.C.


John Korunow, P.E.

Kishor Shah

From: Orion Joyner <OrionJ@ci.camden.nj.us>
Sent: Tuesday, August 09, 2016 4:10 PM
To: 'Natalie Linnik'
Subject: RE: Kaighn Avenue Bridge over Cooper River
Attachments: 6-6.jpg

For your review.

Orion Joyner, PE, CME
Senior Engineer

From: Natalie Linnik [<mailto:nlinnik@ihengineers.com>]
Sent: Tuesday, August 02, 2016 11:52 AM
To: Orion Joyner
Subject: RE: Kaighn Avenue Bridge over Cooper River

Hello Orion,

It was nice to talk to you, and was nice to hear that you would like to help us!
Orion, please find attached Utility Letter N#1 for Kaighn Avenue Bridge over Cooper River project. Please note, that Letter #1 (Water and Sewer) was addressed to Mr. Keating and Mr. Ahiarakwe, since this information was provided through the project manager. Please let me know, if you would like me to re-send it to you with your name.

Also, please find attached Project Location Map for mentioned above project for your use.

Thank you,

Natalie

Natalie Linnik
Civil Engineer



*103 College Road East, 1st Floor
Princeton, NJ 08540*

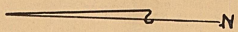
(F) 609-734-8400 ext.6421

(F) 609-734-8405

www.ihengineers.com

nlinnik@ihengineers.com

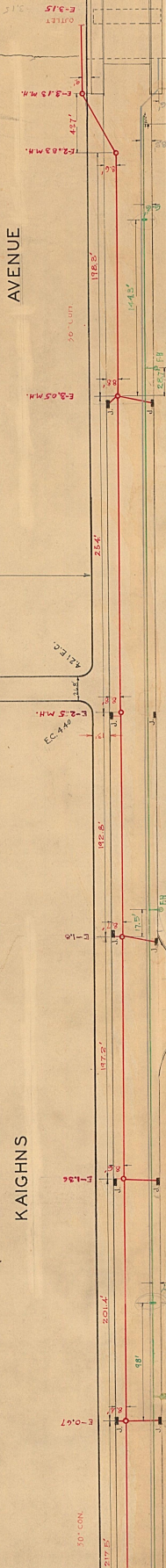
"First choice of our clients for over 10 years."



KAIGHNS AVENUE

DRIVE

KAIGHNS



2" FORCE MAIN
8" WATER

2" FORCE MAIN
8" WATER

CRANE OFF



Sta. 2+10
E.C. 260
800'

4" Force Main
36" Crp Storm Sewer

Kishor Shah

From: Jim Costello <jim@ccmua.org>
Sent: Tuesday, July 26, 2016 1:26 PM
To: Natalie Linnik
Cc: Andy Kricun
Subject: RE: Kaighn Avenue Bridge over Cooper River

Natalie , We only manger the County Interceptor System not the locate system we do not have anything on that bridge Thank you Jim

James Costello
Camden County Municipal Utilities Authority
1645 Ferry Ave Camden N.J. 08104
Engineering
jim@ccmua.org
P# 856-541-3700 Ext. 1232
F# 856-964-1829



From: Natalie Linnik [<mailto:nlinnik@ihengineers.com>]
Sent: Tuesday, July 26, 2016 11:52 AM
To: Jim Costello
Subject: RE: Kaighn Avenue Bridge over Cooper River

Hello Jim,

It was nice to talk to you!
Jim, please find attached Utility Letter N#1 for Kaighn Avenue Bridge over Cooper River project.
Also, please find attached Project Location Map for mentioned above project for your use.

Thank you,

Natalie

Natalie Linnik
Civil Engineer



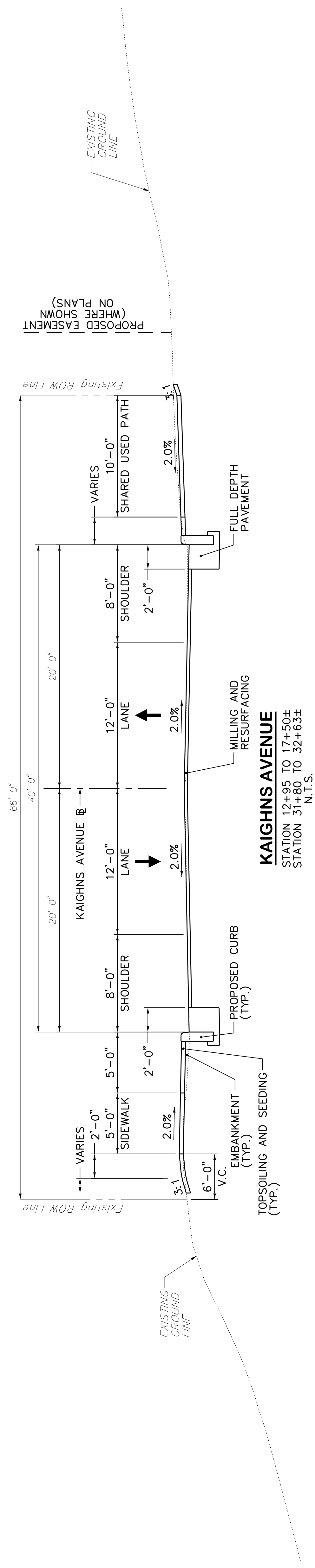
103 College Road East, 1st Floor
Princeton, NJ 08540
(F) 609-734-8400 ext.6421

(F) 609-734-8405
www.iengineers.com
nlinnik@iengineers.com

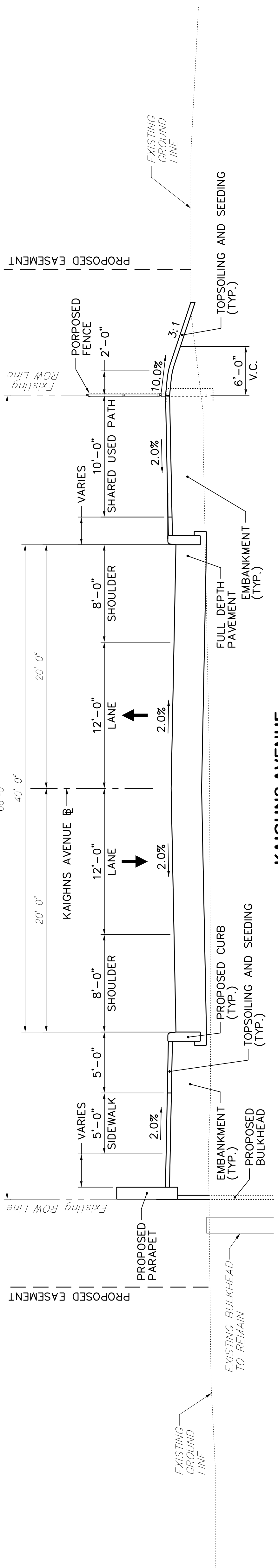
"First choice of our clients for over 10 years."

Appendix M

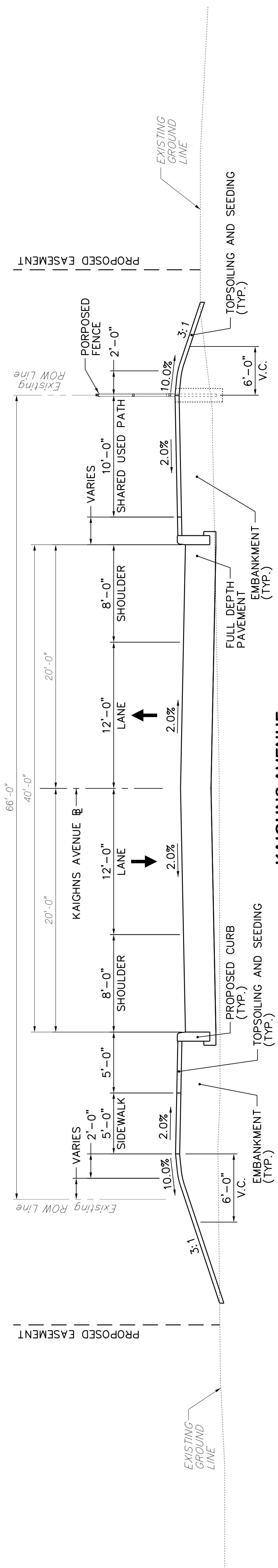
Construction Plans



KAIGHNS AVENUE
STATION 12+95 TO 17+50±
STATION 31+85 TO 32+65±
N.T.S.



KAIGHNS AVENUE
STATION 17+50 TO 24+50±
N.T.S.



KAIGHNS AVENUE
STATION 24+50 TO 29+50±
STATION 31+20 TO 31+80±
N.T.S.

Camden County Department of Public Works
Division of Engineering
Office of the County Engineer
2311 Egg Harbor Road, Lindenwald, New Jersey 08021

**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

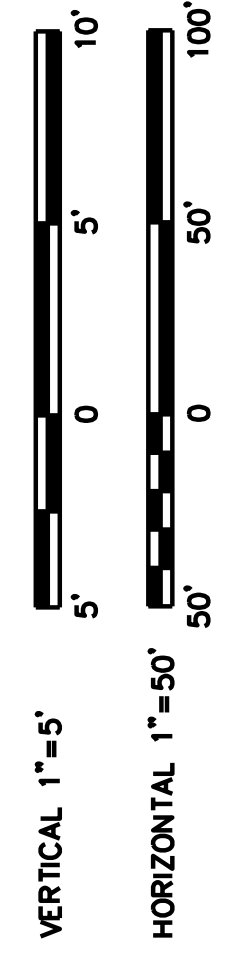
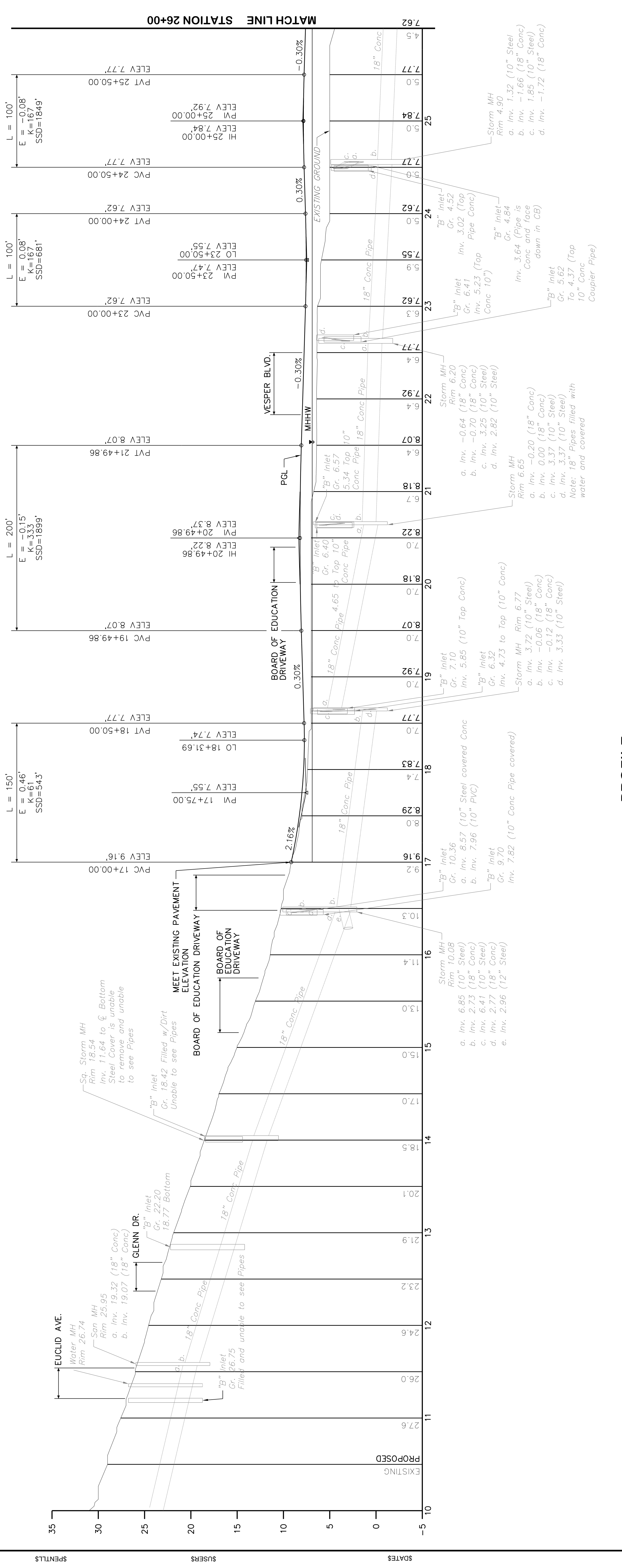
TYPICAL SECTIONS

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Sheet No. of
Date: 2017

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PRINCETON, NJ 08540

CAMDEN COUNTY

CITY OF CAMDEN



PROFILE

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 2311 Egg Harbor Road, Lindenwald, New Jersey 08021

**KAIGHNS AVENUE (CR 607)
 OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

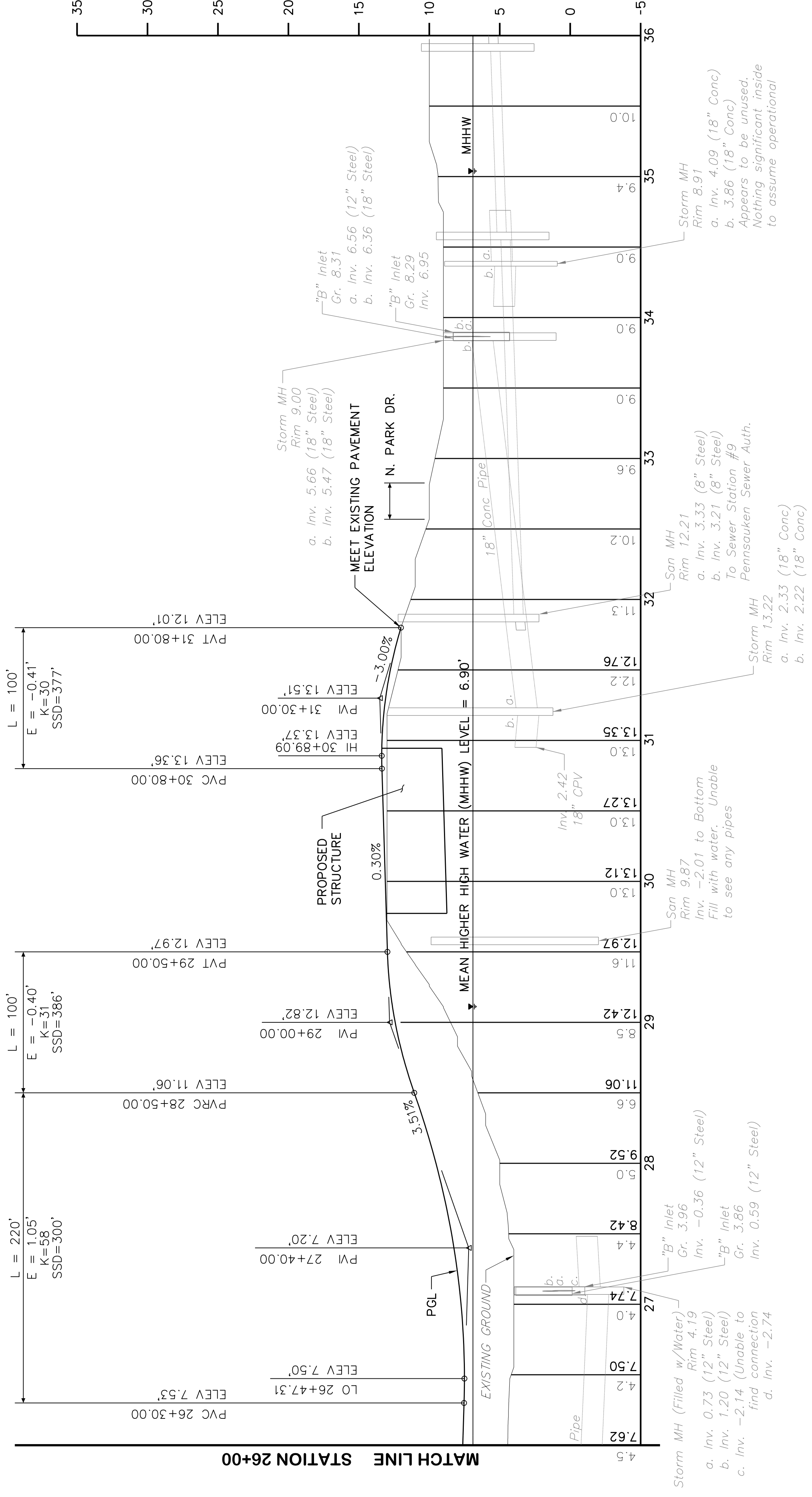
PROFILE - 1

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 Date: 2017

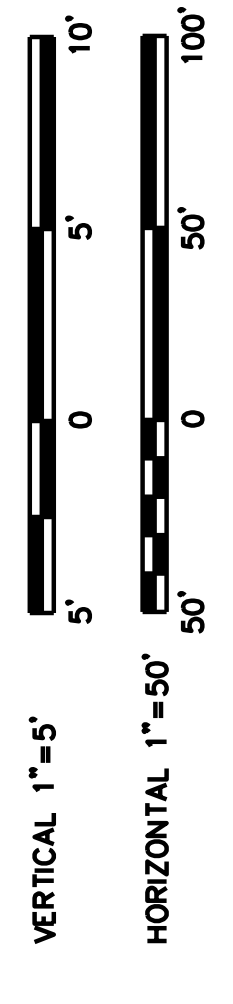
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CAMDEN COUNTY

CITY OF CAMDEN



PROFILE



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**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

PROFILE - 2

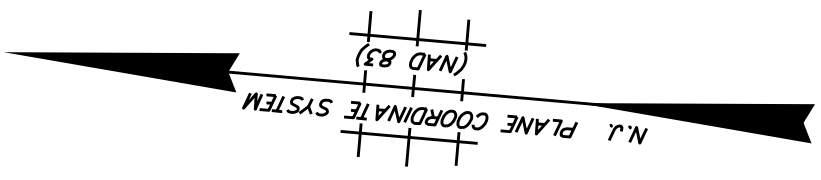
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PRINCETON, NJ 08540

\$PENTLIS

\$USERS

\$DATES

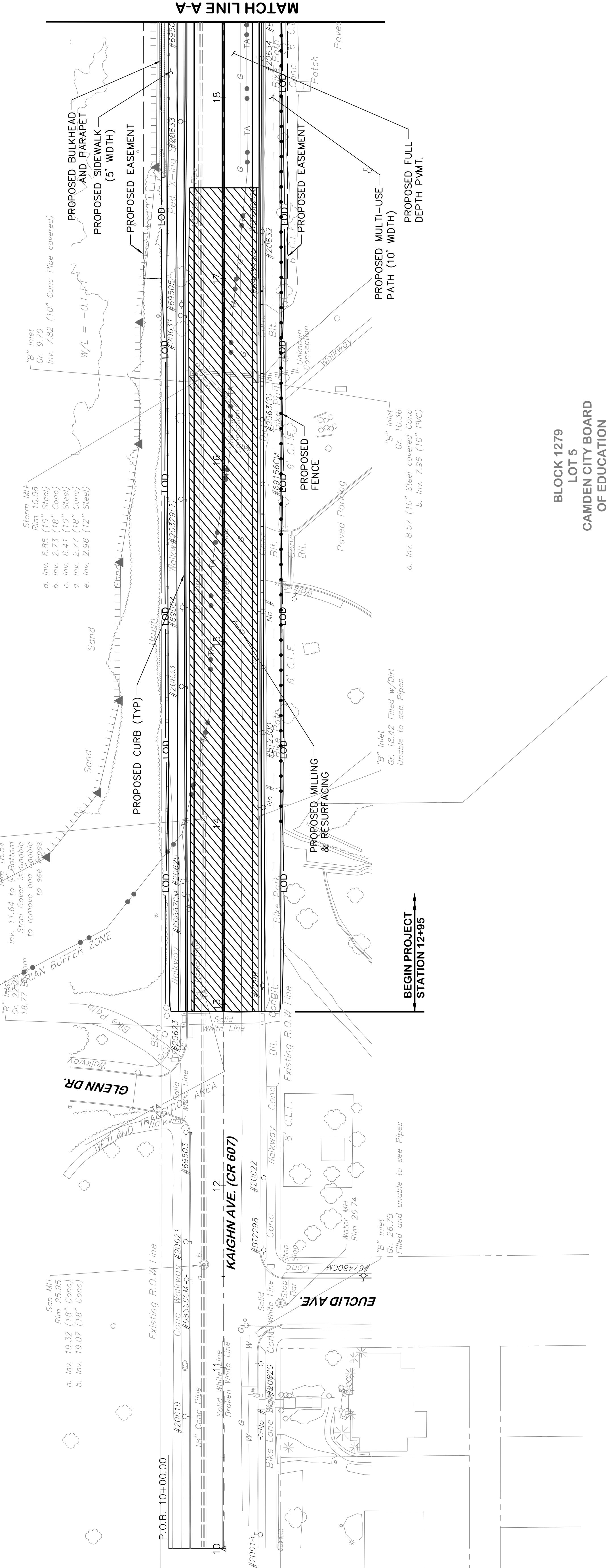


SPENTILLS

SUSERS

SDATES

BLOCK 1265
LOT 2
FARNHAM PARK
(GREEN ACRES)



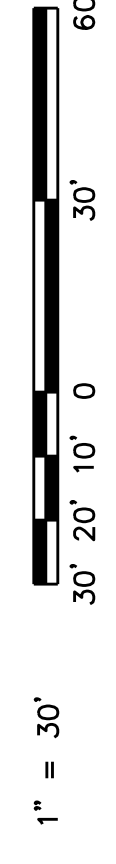
MATCH LINE A-A

BLOCK 1279
LOT 5
CAMDEN CITY BOARD
OF EDUCATION

BEGIN PROJECT
STATION 12+95

LEGEND:

- +—+— PROPOSED FENCE
- +—+— EXISTING STORMWATER
- +—+— EXISTING GAS LINE
- +—+— EXISTING WATER LINE
- +—+— EXISTING SEWER
- ▨ MILLING AND RESURFACING
- LOD — LIMIT OF DISTURBANCE
- TA — TRANSITION AREA
- ||||| WETLANDS
- RIPARIAN BUFFER ZONE



1" = 30'

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**KAIGHNS AVENUE (CR 607)
OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

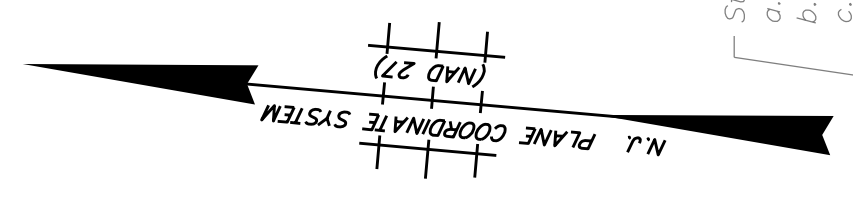
CONSTRUCTION PLAN - 1

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Date: 2017

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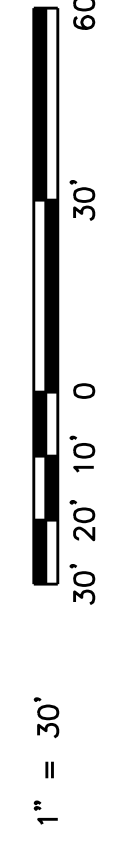
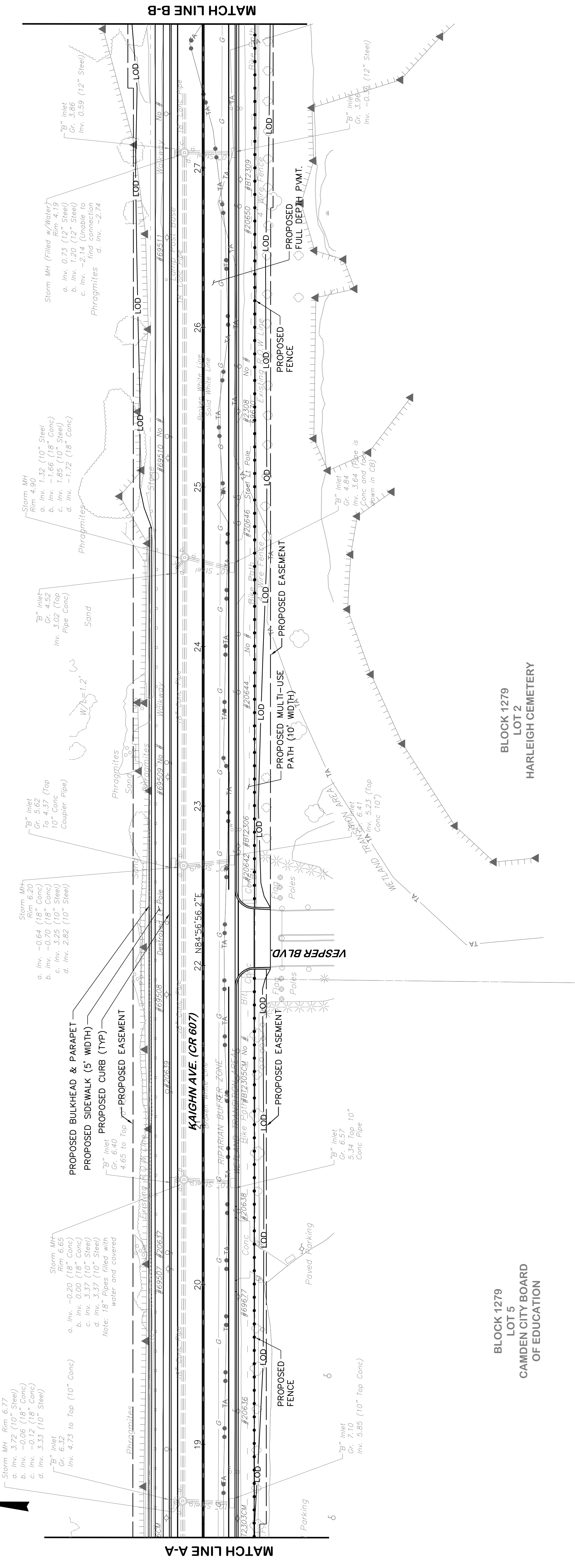
CITY OF CAMDEN



BLOCK 1265
LOT 2
FARNHAM PARK
(GREEN ACRES)

BLOCK 1279
LOT 5
CAMDEN CITY BOARD
OF EDUCATION

BLOCK 1279
LOT 2
HARLEIGH CEMETERY



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OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

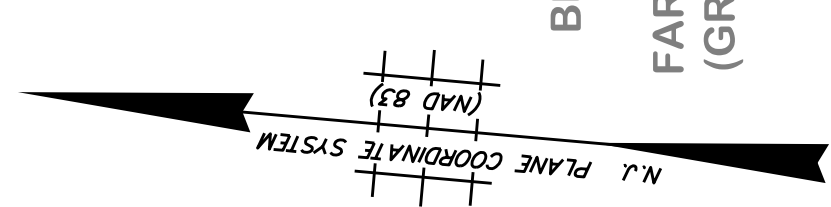
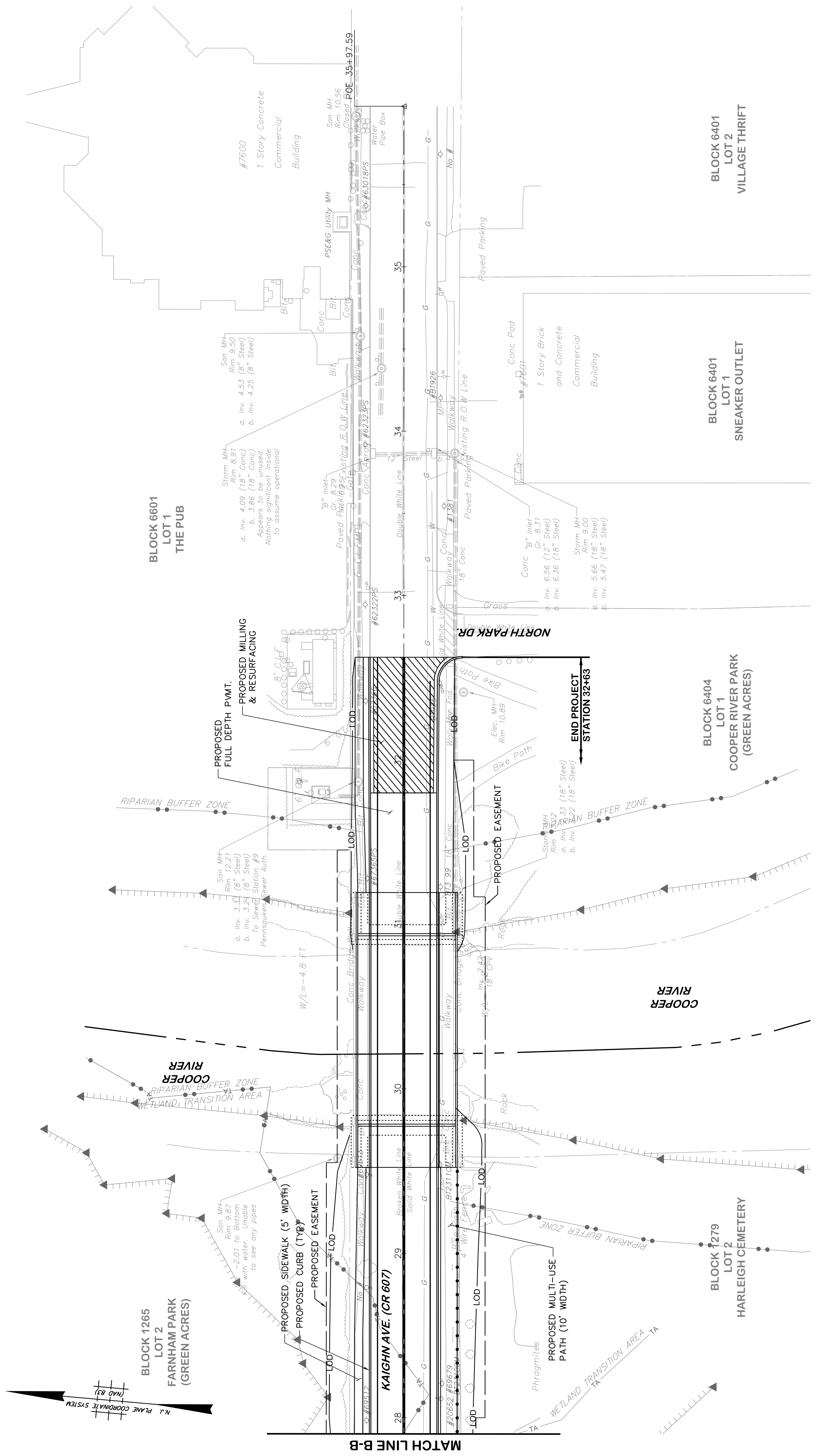
CONSTRUCTION PLAN - 2

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Date: 2017

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PRINCETON, NJ 08540

CAMDEN COUNTY

CITY OF CAMDEN



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 2311 Egg Harbor Road, Lindenwald, New Jersey 08021

**KAIGHNS AVENUE (CR 607)
 OVER THE COOPER RIVER**

CITY OF CAMDEN CAMDEN COUNTY, NEW JERSEY

CONSTRUCTION PLAN - 3

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 Date: 2017

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