

ROUTE 10 PATHWAY, BRECKNOCK PARK TO GATEWAY SOUTH SHOPPING CENTER

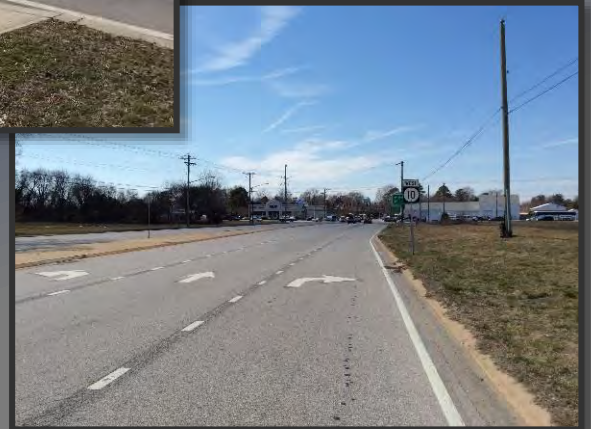
Phase 1



Phase 2



Phase 3



CONCEPT DESIGN REPORT September 2015

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center

September 2015

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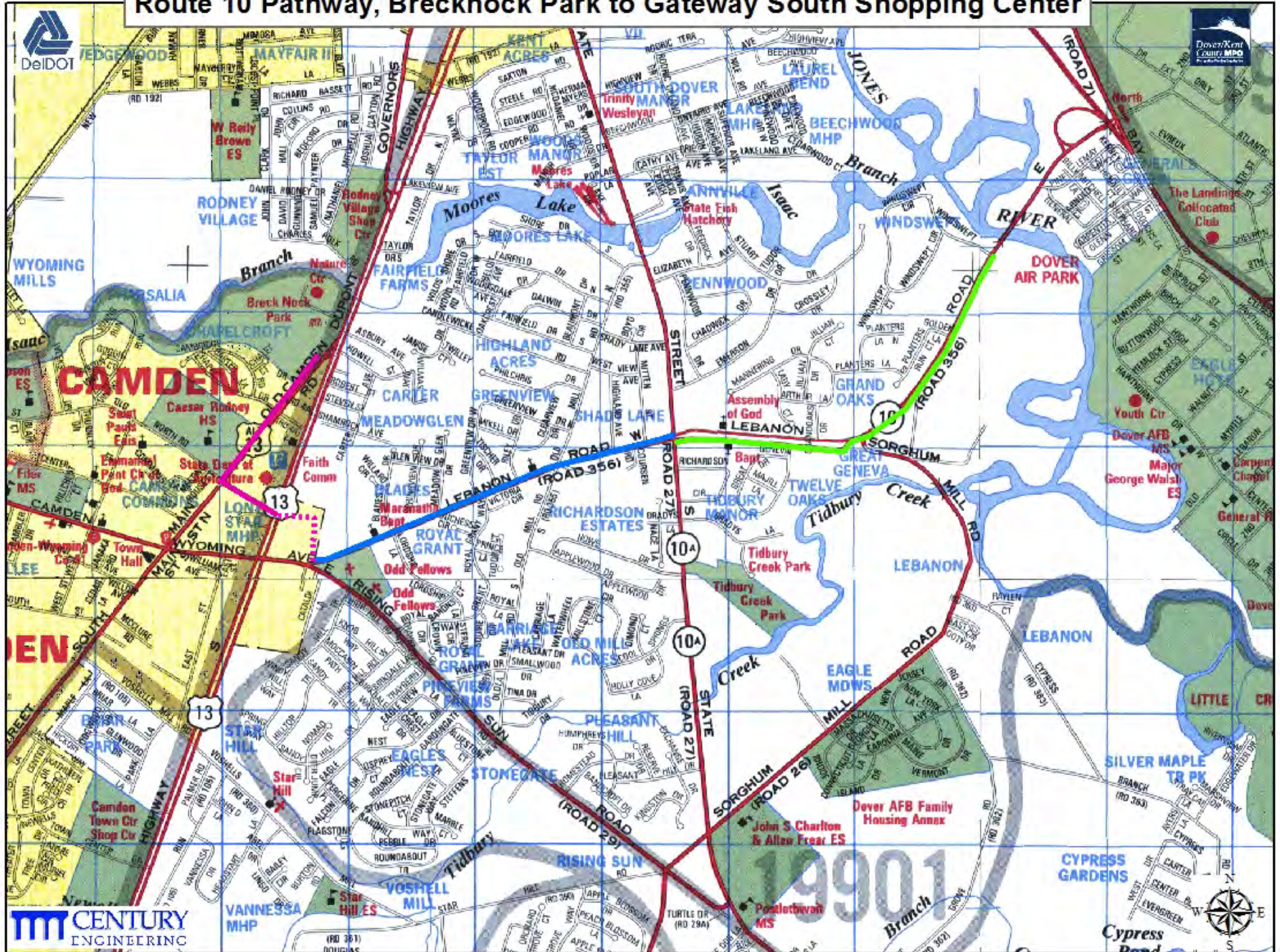
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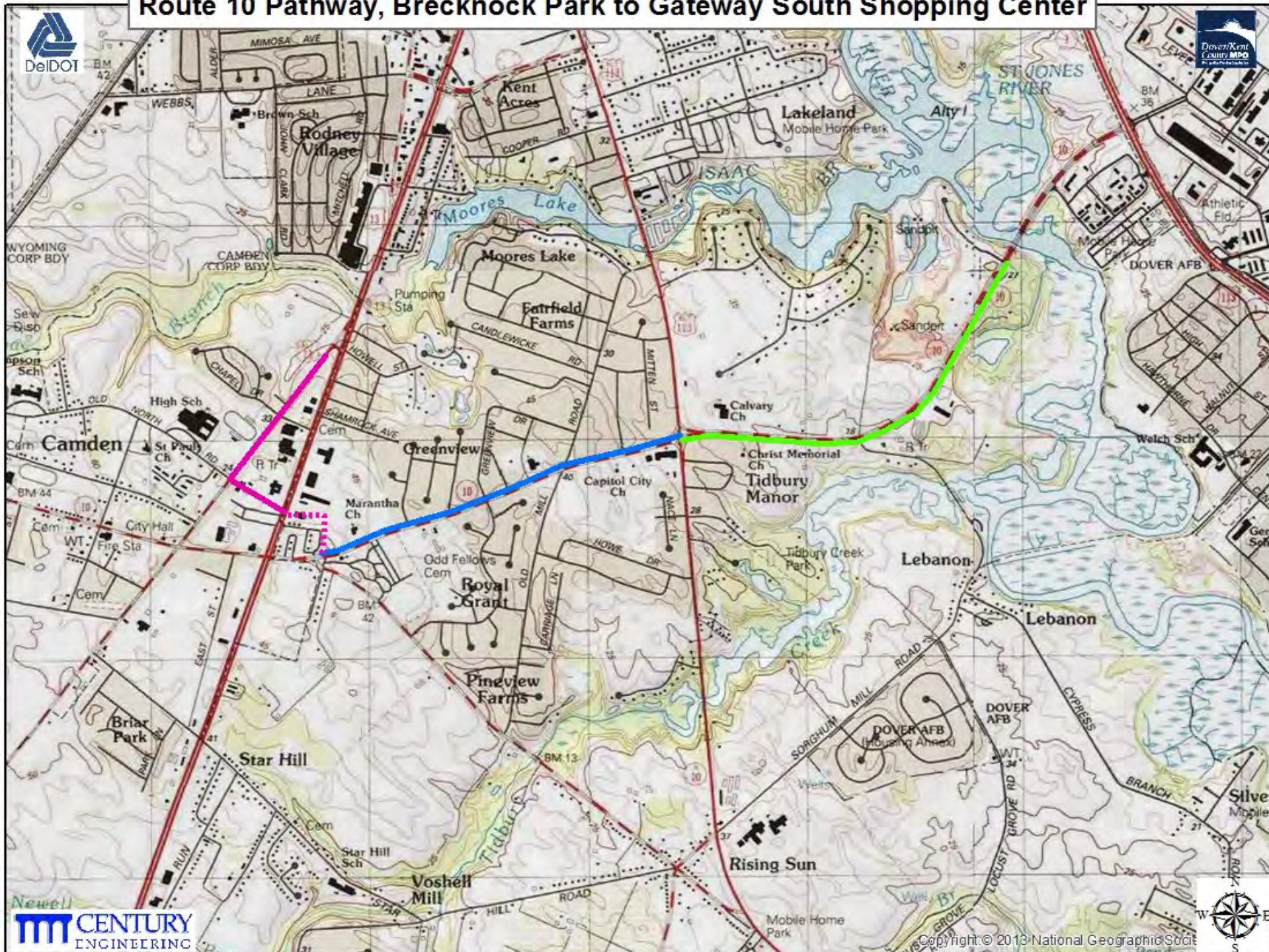
Route 10 Pathway, Brecknock Park to Gateway South Shopping Center



Phase 1 Phase 2 Phase 3 Constructed By Others

Date: 9/30/2015

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center



Phase 1 — Phase 2 — Phase 3 — Constructed By Others

Date: 9/30/2015

Project Need

The Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Project is part of a multi-phase regional bike and pedestrian master plan that proposes to connect the Isaac Branch segment of the St. Jones Greenway with the West Dover Connector (State Contract No. T200411701) multi-use path which is currently under construction, in Kent County, Delaware. This project is funded and supported by federal, state and local agencies (Dover/Kent County MPO, Delaware Department of Transportation and City of Dover).

The St. Jones Greenway is a planned 14 mile pathway linking the City of Dover, Central Kent County and the Delaware Bay. This portion of the pathway will consist of a 3.4 mile long, 8'-10' wide multi-modal facility that creates a connection from Brecknock Park across US13 and along SR10 to the Gateway South Shopping Center. This proposed project is being undertaken as part of the Statewide Trails initiative to improve accessibility and safety for pedestrians and bicyclists throughout the region. It will also provide an off-roadway connection that will serve numerous residential areas providing an alternative mode of transportation, supporting healthy life styles and providing economic benefits which are all key elements in the City and State's master transportation plans. In addition, by providing an off-roadway connection it allows pedestrians and bicyclists to avoid the congestion of busy roadways and be farther from traffic creating a less stressful trip. This connection will provide access to several parks, shopping centers, serve the local communities as well as attract regional users.

Project Description and Purpose

The Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Project consists of 3 phases:

Phase 1 - US13, S. DuPont Highway to Brecknock Park: along Old North Road (K193) and Old Camden Road (K004) to connect to the Brecknock Park Entrance

Phase 2 - Gateway South Shopping Center to State Street along Route 10, Lebanon Road (K356)

Phase 3 - State Street to US13 along Route 10 Lebanon Road (K356)

Note that each phase's existing and proposed alternatives will be discussed in their entirety before discussing the next phase.

Existing Conditions

Phase 1 - US13, S. DuPont Highway to Brecknock Park: along Old North Road (K193) and Old Camden Road (K004) to connect to the Brecknock Park Entrance

Phase 1 can be divided into two sections. The first section is located on Old North Road from US13, S. DuPont Highway to Old Camden Road. The second section continues north on Old Camden Road to the entrance at Brecknock Park. The section of Old North Road within the project limits was recently constructed as part of the Caesar Rodney Plaza Shopping Center which currently accommodates Redners Warehouse Supermarket and Walgreens Pharmacy. On the opposite side of Old North Road is the Delaware Department of Agriculture building and private residences. Old North Road is a two-lane roadway (right-of-way width varies) with right and left turn lanes at each entrance. There are 5' wide concrete sidewalks with a grass buffer behind existing 8" high concrete curb on both sides of the roadway. Striped bike lanes appear intermittently throughout this section.



Old North Road intersects Old Camden Road at an existing traffic signal that accommodates pedestrian crossings on all four legs. Caesar Rodney High School is located in the northwest quadrant of the intersection. The speed limit is 25 mph along Old North Road and there is an existing closed drainage system.

Old Camden Road is a two-lane roadway (60' right-of-way) with varying width shoulders. The existing travel lanes are 11'-12' wide. At many locations the shoulders are used for parking by private residents and businesses. There is a 5 foot wide concrete sidewalk on the west side of the roadway along the Caesar Rodney High School parcel and the Bright Futures Pediatrics building. There is existing sidewalk (varying in width and condition) from Old North Road to Brecknock Park along the eastside of the roadway.



There are no marked pedestrian crossings north of Old North Road. There is a mix of open and closed drainage along Old Camden Road that outlets to Isaac Branch at bridge number 2-003A north of Brecknock Park. Old Camden Road is a mix of commercial and residential properties. There are utility poles on both sides of the roadway and underground utilities are present throughout the corridor. There are existing street lights located on the utility poles on the eastside of the roadway. The speed limit is 25 mph along Old Camden Road until it increases to 35 mph approximately 800' south of the Brecknock Park Entrance to US13.

Phase 1 is entirely within the Town of Camden limits. This phase also contains a historic structure, S.J. Speal Residence, which is located adjacent to Brecknock Park. The historic documentation is included in Section 7 of this report.

Old Camden Road is considered a Major Collector by DelDOT with approximately 6,420 vehicles per day. Crash data for these roads were pulled (See Section 7) but only indicated one pedestrian or bicycle crash. There are no existing transit stops along Old Camden Road.

Proposed Improvements

Phase 1

The proposed improvements along Old North Road will include removing the existing 5 foot wide sidewalk and replacing it with an 8' wide multi-use path by removing the existing grass buffer on both sides of the roadway where possible. The proposed sidewalk will be directly abutting the existing curb. In locations without a buffer, the right of way will be examined to determine if it is feasible for the sidewalk to be widened. If it is determined to be private right of way, it is recommended that the property owner be contacted to determine if they would allow an easement to widen the sidewalk. Another option is to reduce the existing lane width to provide for a wider shoulder. This option seemed cost prohibitive and was not pursued. The existing curb ramps will be modified to accommodate the 8' pathway width and any mailboxes will be adjusted to provide additional clearance. The existing striped bike lanes will remain for the on-road users. This path will tie into the multi-use path proposed as part of a future private development located on the east side of US13 and the path along the frontage of Caesar Rodney Plaza. The future private development will also connect to the path proposed in Phase 3 of this project. The development will need to be monitored to ensure that the proper accommodations (receiving path, signal equipment, signing) for the pathway are taken into account in the design.

The proposed improvements along Old Camden Road will include constructing an 8' wide concrete multi-use path along the west side of the roadway from Old North Road to the entrance of Brecknock Park. A concrete section was chosen to better fit with the existing conditions and the residential area. This path will connect to the proposed DelDOT Brecknock Park, US13 to Entrance Trail Project.

Several alternatives were considered for this section of Phase 1; a discussion of each follows. The section of path along the Caesar Rodney High School parcel is the same design for all alternatives. The existing sidewalk along the Caesar Rodney High School parcel will be removed and replaced with an 8' path along the same general alignment. Additional connections to the school near the tennis courts will be considered in the future design, as requested by the School District. The School District will need to provide an easement for the relocation of the existing fence approximately 5' into their property. The school was supportive of the conceptual plan but wanted to discuss these options more as the plans are developed.

In addition, all of the options will have the following characteristics:

- The path will be ADA compliant and will connect to the existing trails currently in and around Brecknock Park.
- No additional lighting is currently proposed for this project.
- In order to increase safety for pedestrians and bicycles, a reduction of the speed limit to 25 mph at the entrance of Brecknock Park for southbound traffic is recommended. Additional analysis will be performed during final design. DelDOT Traffic supports this recommendation.
- It is anticipated that the project will qualify for the Sidewalk, Trail, or other Linear Impervious Surfaces standard plan. Compliance with this plan will require demonstration that the total disturbed area does not exceed 5 acres, no wooded areas are disturbed, and the curve number for the project area does not increase by more than one. Because this project is located in an urban, developed area and is primarily widening or replacing existing sidewalk, it is expected that these conditions will be met.

Alternative A

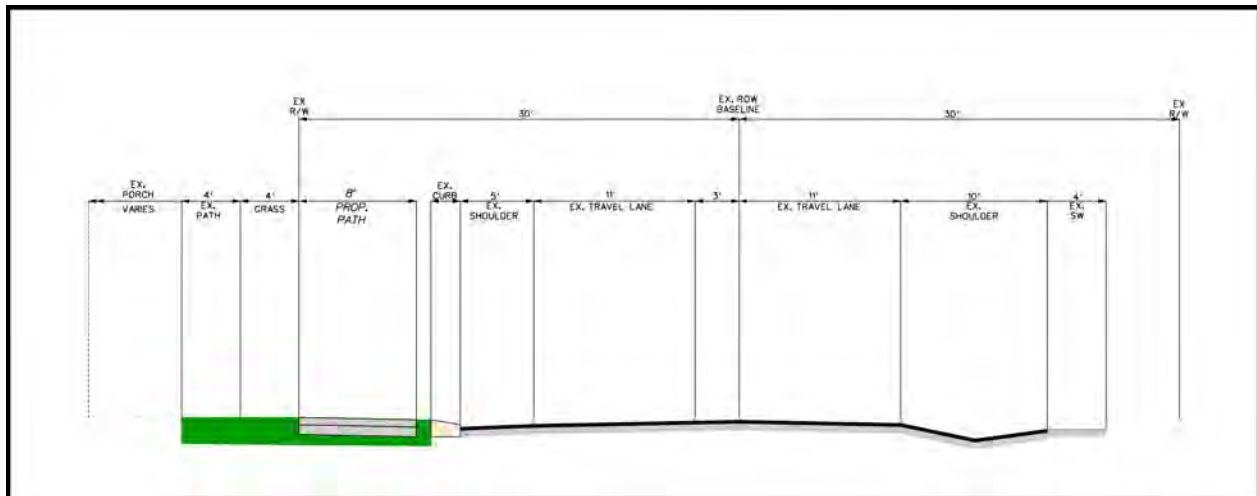
This alternative includes reducing the southbound shoulder north of the High School to 5', leaving a 3' grass buffer and constructing an 8' wide at-grade, multi-use path. This alternative provides a shoulder for bicycles to use, which is separate from the path. This alternative results in several utility conflicts, grading issues and private property impacts. A retaining wall will be necessary in front of the 4 private residences between the High School and Chapel Drive and along the frontage of Brecknock Park. The house directly north of Chapel Drive will have its landscaping impacted as well as having the path close to the front porch. This alternative was not supported by DelDOT's Planning & Traffic Sections.

Alternative B

This alternative is very similar to Alternative A by reducing the existing southbound shoulder north of the School to 5', leaving a 3' grass buffer and constructing an 8' wide at-grade, multi-use path. North of Chapel Drive, this alternative reduces the northbound shoulder to 5', holding the outside edge of the existing pavement. By reducing the northbound shoulder and leaving the travel lanes at 11' wide, the roadway shifts to the east. Shifting the roadway to the east allows the proposed multi-use path to be constructed with less impacts to Brecknock Park than Alternative A. This also reduces the impacts to the private residences adjacent to Chapel Drive but a retaining wall will still be likely for a portion of the section. This alternative was not supported by DelDOT's Planning & Traffic Sections.

Alternative C (Preferred Alternative)

North of the High School, the path will be placed directly behind a proposed 8" high concrete curb with a one foot gutter pan. The proposed curb and gutter will be placed 1' from the existing travel way eliminating the existing southbound shoulder. There is a potential need for an approximately 2' high retaining wall along the Brecknock Park frontage and the private residences just south of Chapel Drive due to grade differential. By eliminating the existing shoulder, the need for the retaining wall is reduced but still exists. This will be analyzed once the topographic survey is performed in the final design. The existing drainage network will need to be inspected to determine whether it can be utilized with the proposed curb and gutter. It is anticipated that much of the existing drainage system can be utilized in the final design but to be conservative the cost estimate takes into account installing new drainage facilities. The impacts to the private residences and utilities are greatly reduced with this alternative. The conceptual construction costs for this alternative is approximately \$1,182,545.00 bringing the total project cost (including construction, traffic, real estate and engineering costs) to \$1,397,545.00.



Alternative D

This alternative is identical to Alternative C with the exception of the Chapel Drive intersection. Currently this intersection is striped with a shared left-thru lane and a right turn lane for northbound traffic. The northbound traffic turning right is the heaviest movement and separating the lanes reduces potential for backups. This alternative would eliminate the median striping that currently forms the left-thru lane. By eliminating this median, it narrows the roadway, allowing the path to be constructed with limited impacts to the private residences. Although this alternative was not considered the preferred alternative there is still potential for the intersection to be reconfigured once topographic survey is obtained. Limited traffic counts at peak AM and peak PM hours were performed at this intersection and are shown in Section 7. Additional analysis will be performed during final design and input from the public will be obtained to better evaluate this alternative.

Environmental Permits and Agency Coordination

The following is a list of permits and agency coordination that will be necessary in order to construct this phase of the project:

- NEPA document required – Categorical Exclusion with 4(f) discussions.
- Section 106 investigation/SHPO coordination required.
- There are no regulatory waters or wetlands within this phase of the project and therefore are no environmental permits.
- Coordination with the Town of Camden to ensure this project is consistent with their standards.

Assumptions and Limiting Conditions

The following assumptions and limiting conditions were considered in the preparation of this conceptual plan package:

- Ownership and Maintenance responsibilities for the path will be determined in the future. DelDOT will have discussions with Kent County Parks and Recreation and the Town of Camden.
- No subsurface investigation was performed. Subbase materials are assumed to be adequate. Soil borings will be performed in the next phase as required.
- Limits of existing right of way are based on preliminary, current owner research of public records, additional research and survey is required to confirm the location of the right-of-way, easements, and property lines.
- Topographic and property survey was not performed. Information contained herein regarding topographic features was obtained by site visit observation and previous DelDOT projects.

Existing Conditions

Phase 2 - Gateway South Shopping Center to South State Street along SR10, Lebanon Road

Phase 2 is located along SR10, Lebanon Road from the Gateway South Shopping Center to the intersection of SR10 and South State Street. This portion of roadway is considered to be a minor arterial/divided arterial that carries approximately 20,000 vehicles a day and is a mix of commercial and residential properties. The divided roadway consists of two 12' wide travel lanes, 9'-12' wide shoulders in each direction, a grass median and turn lanes throughout the corridor.



There are very few dedicated pedestrian facilities along this section (5' wide sidewalk along the Gateway South Shopping Center frontage and a section of 5' wide sidewalk along the Royal Farms frontage) but the two traffic signals, one at each of the limits of the phase, accommodate pedestrian movements. Striped bike lanes are only present at the intersection with South State Street. The speed limit is 50 mph, until to drops to 40 mph just before the SR10 and South State Street intersection.



The existing drainage is controlled through a combination of open and closed drainage systems. The main line of the system is located in the median of SR10. There are several cross road pipes, including a 30" CMP that crosses under both lanes of SR10 into a concrete channel that feeds into the St. Jones River. Wetlands exist near the outfall of this pipe. Just west of Sorghum Mill Road there is a smaller pipe crossing SR10 which outfalls into an area that has wetland characteristics (the presence of wetlands will need to be verified in final design) and flows to Tidbury Creek. Existing SWM ponds exist along the frontage of SR10 at the Wawa, just west of Sorghum Mill Road, and at the commercial properties east of South State Street.

In the area of the 30" pipe crossing, both east and westbound lanes have existing guardrail for approximately 200 feet to protect from the steep drop-offs.



DTC currently operates the 105, 106 & 303 bus routes along SR10 with stops at: The Gateway South Shopping Center, Wawa and Royal Farms. During final design coordination with DTC should be performed to determine if any upgrades to the amenities at the bus stops are needed or if additional stops are required. Crash data for this phase was reviewed (See Section 7) but did not indicate any pedestrian or bicycle collisions.

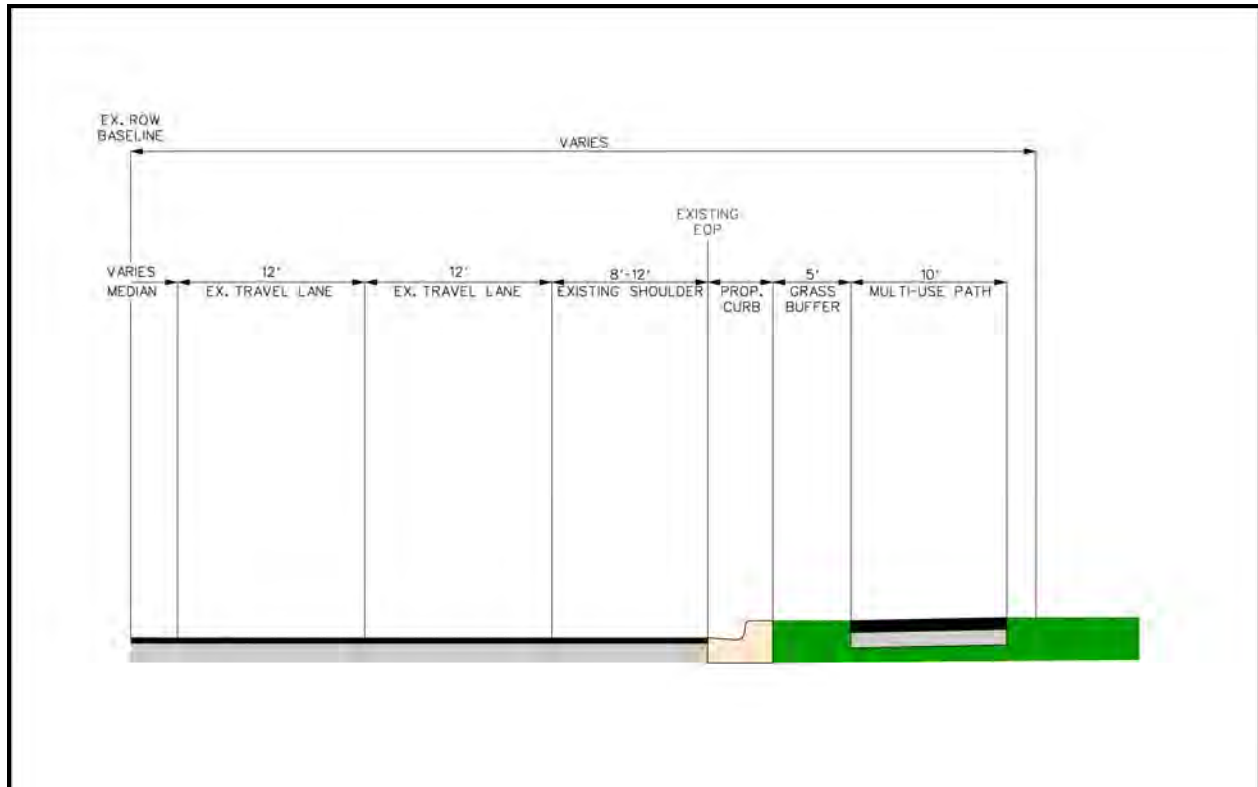
There is an historic parcel (The Great Geneva House) located at the intersection of SR10 and Great Geneva Drive. The historic documentation is included in Section 7 of this report.

The right-of-way varies throughout this section (130' min.) but preliminary parcel identification suggests that the majority of utilities are within the right-of-way. There are utility poles, fire hydrants and underground facilities present throughout this phase. Existing street lighting is only along SR10 at the signalized intersections and the unsignalized intersection with Sorghum Mill Road.

The proposed multi-use path begins at DelDOT's St. Jones Greenway, SR10 Bridge Crossing to Gateway Shopping Center Project No. T201430001, which began construction in summer 2015.

Proposed Improvements

The proposed improvements include installing a 10' wide, hot mix, multi-use pathway behind a 5' grass buffer and curb along the southern side of SR10. The goal is to provide a low stress facility that connects bicyclists and pedestrians from residential areas to destination points. The curb and gutter with the grass buffer provide a separation between the pathway user and vehicles creating a greater feeling of safety. ADA compliant curb ramps, driveway crossings and crosswalks will be provided where necessary.



Based on initial review of the right of way it appears that there is room within the existing right-of-way to accommodate the proposed section. This will be verified during final design. If needed, a smaller grass buffer width can be used to stay within the existing right-of-way. There is also the option of reducing the existing shoulder width (by approximately 2') and building the path section on top of the existing shoulder. As shown on the conceptual plans there are some locations that small (2'-3') retaining walls are proposed due to grade differentials. These items will need to be verified with the topographic survey during the final design.

The existing drainage system is a mixture of open and closed networks. As a result of the proposed curb, the design will create additional closed drainage facilities by constructing a new run of pipe along the proposed curb line of the eastbound side of SR10. The design will make use of as much of the existing facilities as possible but for a conservative estimate a new run of pipe was recommended for the entire length of the project. The proposed drainage will match the existing flow direction and outlet at existing locations. Open swales will be designed in front of the business park east of Sorghum Mill Road and will tie into the closed drainage system.

This path will begin by tying into the sidewalk being constructed by DelDOT's "St. Jones Greenway, Route 10 Bridge Crossing to Gateway Shopping Center" (T201430001). The existing 5' wide sidewalk on the berm will be removed and replaced with the 10' wide multi-use path. Minor geometric improvements will be required at the traffic signal at the Gateway South Shopping Center to accommodate the wider pathway and its new alignment. A 10' wide pathway will also be added on the north side of SR10 at the Wawa parcel to connect the bus stop and community sidewalk on Planters Lane to the new facility.

In the area of the 30" crossroad pipe and guardrail, the existing shoulder will be reduced to 6' and a barrier wall will be installed to provide separation between the vehicles and pathway users. A 10' pathway will be constructed on the outside of the barrier using a modular block wall. This is the same type of facility that is being installed on the SR10 Bridge Crossing project. DelDOT's Traffic, Design and Planning Sections were supportive of this proposal.

At the intersection of SR10 and South State Street, concrete islands will be reconstructed to accommodate the new multi-use path and provide better pedestrian refuge. The existing vehicle and pedestrian signals will be upgraded to the latest MUTCD standards. The 10' multi-use path will continue on the eastbound side of SR10 to the bus stop and USPS drop-off location in front of the Royal Farms, to provide connectivity between transportation facilities. The west side of South State Street is where the pathway will transition from the south to the north side of SR10.

Utility impacts will potentially include the relocation of utility poles, guy wires and fire hydrants and adjustments to valves and manholes. Additional impacts include the relocation of a DelDOT ATC Station, modifications to community entrance signs, and various landscaping areas. These impacts will try to be mitigated during the final design.

It is expected that all work will be performed within DelDOT right-of-way but temporary construction easements will need to be purchased to tie back into existing grades.

The conceptual construction costs for this phase is approximately \$3,487,835.00 bringing the total project cost (including construction, traffic, real estate and engineering costs) to \$4,132,835.00.

Stormwater Management

On April 13, 2015 Century Engineering completed an investigation of existing stormwater management facilities and drainage features associated with the St. Jones to Brecknock Park Trail project. The project area features a combination of open and closed drainage, and is located entirely within the St. Jones River watershed. The northern extent of the study area contributes to the St. Jones River through a potential wetland area near the North Planters Lane intersection. Just south of the Sorghum Mill Road and SR10 intersection, a ditch, approximately 1,600-feet, runs along Sorghum Mill Road and contributes to Tidbury Creek.

The existing land use in the area where the path is proposed primarily consists of grass open space with minor areas of woods and existing impervious. The existing drainage is primarily a closed system with a small portion having an open ditch conveyance. Because of the existing closed drainage system and existing grass cover it is believed that the project will not qualify for a standard plan and will need to provide management of Rpv, Cv and Fv events. Compliance with the Rpv event may be achieved by

implementing grass channels, biofiltration swales, or shallow bioretention areas in the grass buffer. An alternative approach includes implementation of a single infiltration facility to provide the required Rpv at one location such as along the south side of SR10, at Sorghum Mill Road where a large open field is adjacent to the stream channel. The land parcel is currently owned by HFTB-1, LLC, and would require Right of Way acquisition for a BMP. On the north side of the SR10 and Sorghum Mill Road intersection there are two large BMPs that could be evaluated for providing Cv and Fv compliance due to the minimal increases in runoff that will be generated by this project.

SR 10 at the South State Street intersection, the drainage network appears to exit the project limits through the closed drainage system flowing south along South State Street. Near this intersection, there are two BMP's behind the Royal Farms parking lot. These would also be good facilities to examine for aid in compliance with Cv and Fv events.

Further, Cv and Fv compliance will likely be achieved through the development of a hydraulic model that demonstrates no adverse impact to the receiving conveyances or demonstrates an acceptable conveyance to tidal waters.

Environmental Permits and Agency Coordination

The following is a list of permits and agency coordination that will be necessary in order to construct this phase of the project:

- NEPA document required – Categorical Exclusion with 4(f) discussions.
- Section 106 investigation/SHPO coordination required.
- There are jurisdictional wetlands and waterways within project limits but no impacts are anticipated. Therefore no environmental permits are necessary.

Alternatives:

In addition to the proposed alternative this concept looked at the following options:

- Performing a road diet – reducing travel lanes to 11' and shoulders to 8'. This alternative was not selected due to cost and it did not create a low stress facility.
- Installing a pathway on the north side of SR10 between Gateway South Shopping Center and South State Street. This option was not selected due to the steep slopes and additional utility impacts along that side of SR10.

Assumptions and Limiting Conditions

The following assumptions and limiting conditions were considered in the preparation of this conceptual plan package:

- Ownership and Maintenance responsibilities for the path will be assumed by DelDOT.
- No subsurface investigation was performed. Subbase materials are assumed to be adequate. Soil borings will be performed in the next phase.
- Limits of existing right of way are based on preliminary, current owner research of public records, additional research and survey is required to confirm the location of the right-of-way, easements, and property lines.

- Topographic and property survey was not performed. Information contained herein regarding topographic features was obtained by site visit observation and previous DelDOT projects.

Existing Conditions

Phase 3 - South State Street to US13 along SR10, Lebanon Road (K356)

Phase 3 is located on SR10, Lebanon Road, from the intersection of South State Street to US13. This portion of roadway is considered to be a minor arterial/divided arterial that carries approximately 12,000 vehicles a day and is a mix of commercial and residential properties. The divided roadway consists of two 12' wide travel lanes with 9' – 12' wide shoulders in each direction, with a grass median and turn lanes throughout the corridor.



There are no existing dedicated pedestrian or bike facilities along this section of SR10. There is one traffic signal at the intersection of Old Mill Road but there are no pedestrian accommodations. The speed limit is 40 mph, until it rises to 50 mph just before North Old Mill Road to US13.

The existing drainage is controlled through a combination of open and closed drainage systems. The main trunk line of the system is located in the median of SR10. There are numerous cross road pipes that tie into the main line. Several sections of the corridor have existing curb which contributes to the need for cross road pipes.

There are approximately 24 residential driveways that connect directly to SR10 in this phase of the project. One property at the northwest corner of SR10 and North Old Mill Road has a driveway on both streets. According to Kent County, the property location information lists the home with a Lebanon Road (SR10) address.



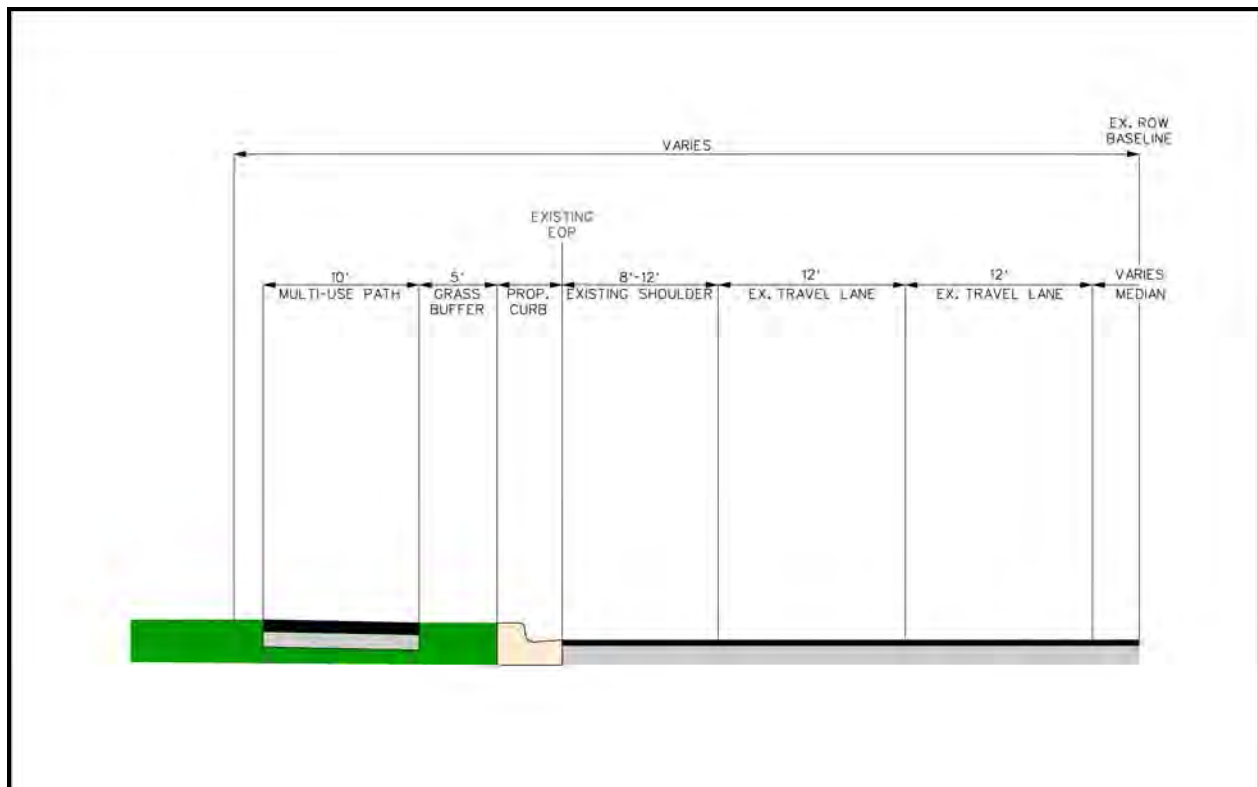
DTC currently operates the 105, 106 & 303 bus routes along SR10 with stops at: The Royal Farms, Wawa, and Gateway South Shopping Center. During final design coordination with DTC should be performed to determine if any upgrades to the amenities at the bus stops are needed or if additional stops are required. Crash data for this phase was compiled (See Section 7) but did not indicate any pedestrian or bicycle collision.

There is a potentially historic parcel located just east of Blades Drive; 515 E Lebanon Road, Dover, DE 19901. The historic documentation is included in Section 7 of this report.

The right-of-way varies throughout this section (130' min.) but preliminary parcel identification suggests that the majority of utilities are within the right-of-way. There are utility poles, fire hydrants and underground facilities present throughout this phase. Existing street lighting is only at the signalized intersection and some of the minor intersecting streets.

Proposed Improvements

The proposed improvements include installing a 10' wide, hot mix, multi-use pathway behind a 5' grass buffer and curb along the northern side of SR10. The goal is to provide a low stress facility that accommodates bicyclists & pedestrians and connects residential areas to destination points. The curb and gutter with the grass buffer provide a separation between the pathway user and vehicles creating a greater feeling of safety. ADA compliant curb ramps, driveway crossings and crosswalks will be provided where necessary.



Based on initial review of the right-of-way it appears that there is room within the existing right-of-way to accommodate the proposed section. This will be verified during final design. If required, a smaller width of the buffer can be used to provide for additional space. There is also the potential of reducing the existing shoulder width (approximately 2') and building the path section in part of the existing shoulder. As shown on the conceptual plans there are some locations that small (2'-3') retaining walls are proposed due to grade differentials. These items will need to be verified with the topographic survey during the final design.

The existing drainage system is a mixture of open and closed networks. As a result of the proposed curb, the design will create additional closed drainage facilities by constructing a new run of pipe along the proposed curb line of the westbound side of SR10. The design will make use of as much of the existing facilities as possible but for a conservative estimate a new run of pipe was installed the entire length of the project. The proposed drainage will match the existing flow direction and outlet at existing locations.

This path will begin by tying into the pathway proposed as part of Phase 2. The 10' multi-use path will be installed on the westbound (north) side of SR10 from South State Street for the remainder of this phase. At SR10 and North Old Mill Road, the intersection will be reconfigured to create a pedestrian accessible crossing. The eastern concrete island will be reconstructed to accommodate the new multi-use path and provide better pedestrian refuge. The second, western, concrete island is undersized and will be removed. The proposed design eliminates the free right turn movement and creates a stop condition to accommodate safe pedestrian access. The existing signal heads will need to be adjusted based on the new lane configuration. Pedestrian signals will need to be installed as well. All signal equipment will be upgraded to the latest MUTCD standards.

Also at this intersection the property owner on the northwest corner has two access points. It is recommended to speak with the owner about possibly closing the access onto SR10 to better fit the pathway. The conceptual plan shows the radius of the curve being modified so the pathway can fit around intersection.

Utility impacts will potentially include the relocation of utility poles, guy wires and fire hydrants and adjustments to valves and manholes. Additional impacts are the relocation or modifications to community/business entrance signs and various landscaping areas. These impacts will try to be mitigated during the final design.

It is expected that all work will be performed within DelDOT right-of-way but temporary construction easements will most likely be required to tie back into existing grades.

This project will tie into the proposed Camden Square development at the northeast corner of SR10 and US13. The developer has initially agreed to reserve space, and construct, the portion of the pathway through their site to tie into the existing signal on US13 and Phase 1 of this project.

The conceptual construction costs for this alternative is approximately \$2,655,120.00 bringing the total project cost (including construction, traffic, real estate and engineering costs) to \$3,285,120.00.

Stormwater Management

On April 13, 2015 Century Engineering completed an investigation of existing stormwater management facilities and drainage features associated with the St. Jones to Brecknock Park Trail project. The project area features a combination of open and closed drainage, and is located entirely within the St. Jones River watershed.

The existing land use in the area where the path is proposed primarily consists of grass open space with minor areas of woods and existing impervious. The existing drainage is primarily a closed system with a small portion having an open ditch conveyance. Because of the existing closed drainage system and existing grass cover it is believed that the project will not qualify for a standard plan and will need to provide management of Rpv, Cv and Fv events. Compliance with the Rpv event may be achieved by implementing grass channels, biofiltration swales, or shallow bioretention areas in the grass buffer. An alternative approach includes implementation of a single infiltration facility to provide the required Rpv at one location such as along SR10 at Rising Sun. The land parcel may be privately owned and would require Right of Way acquisition for a BMP.

Further, Cv and Fv compliance will likely be achieved through the development of a hydraulic model that demonstrates no adverse impact to the receiving conveyances or demonstrates an acceptable conveyance to tidal waters.

The existing conditions between Lordship Lane and Old Mill Road show that there are no large SWM facilities near the project limits, minimal open space near the roadway, no clearly defined outfall, as well as contributing runoff volumes from North Old Mill Road and Riley Drive.

Southwest of Riley Drive, the drainage network appears to contribute runoff to the US13 drainage system. Once in the US13 drainage network, runoff is conveyed towards the Isaac Branch crossing near Brecknock Park.

Environmental Permits and Agency Coordination

The following is a list of permits and agency coordination that will be necessary in order to construct this phase of the project:

- NEPA document required – Categorical Exclusion with 4(f) discussions.
- Section 106 investigation/SHPO coordination required.
- There are no regulatory waters or wetlands within this phase of the project and therefore are no environmental permits.

Alternatives:

In addition to the proposed alternative this concept looked at the following options:

- Performing a road diet – reducing travel lanes to 11' and shoulders to 8'. This alternative was not selected due to cost and it did not create low stress facility.
- Installing a pathway on the south side of SR10 between South State Street and US13. This option was not selected due to the lack of safe pedestrian crossing locations and the potential impacts to the Cemetery.

Assumptions and Limiting Conditions

The following assumptions and limiting conditions were considered in the preparation of this conceptual plan package:

- This project will continue to be coordinated with DelDOT's proposed widening of US13.
- The developer of Camden Square will construct the portion of trail through their site.
- Ownership and Maintenance responsibilities for the path will be assumed by DelDOT.
- No subsurface investigation was performed. Subbase materials are assumed to be adequate. Soil borings will be performed in the next phase.
- Limits of existing right of way are based on preliminary, current owner research of public records, additional research and survey is required to confirm the location of the right-of-way, easements, and property lines.
- Topographic and property survey was not performed. Information contained herein regarding topographic features was obtained by site visit observation and previous DelDOT projects.

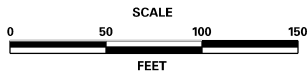


SDATES
FILES
STIMES



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



ROUTE 10 PATHWAY,
OLD NORTH RD TO OLD CAMDEN RD
(PHASE I)

CONTRACT
1201330011
COUNTY
KENT

BRIDGE NO.	X
DESIGNED BY:	
CHECKED BY:	

CONCEPT PLAN

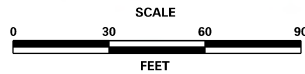
SHEET NO.
1
TOTAL SHTS.
4

6/10/2015 2:07:14 PM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP01_camenABCD.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



ROUTE 10 PATHWAY,
OLD NORTH RD TO OLD CAMDEN RD
(PHASE I)

CONTRACT
1201330011
COUNTY
KENT

BRIDGE NO.	X
DESIGNED BY:	
CHECKED BY:	

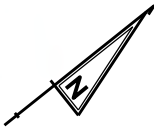
CONCEPT PLAN

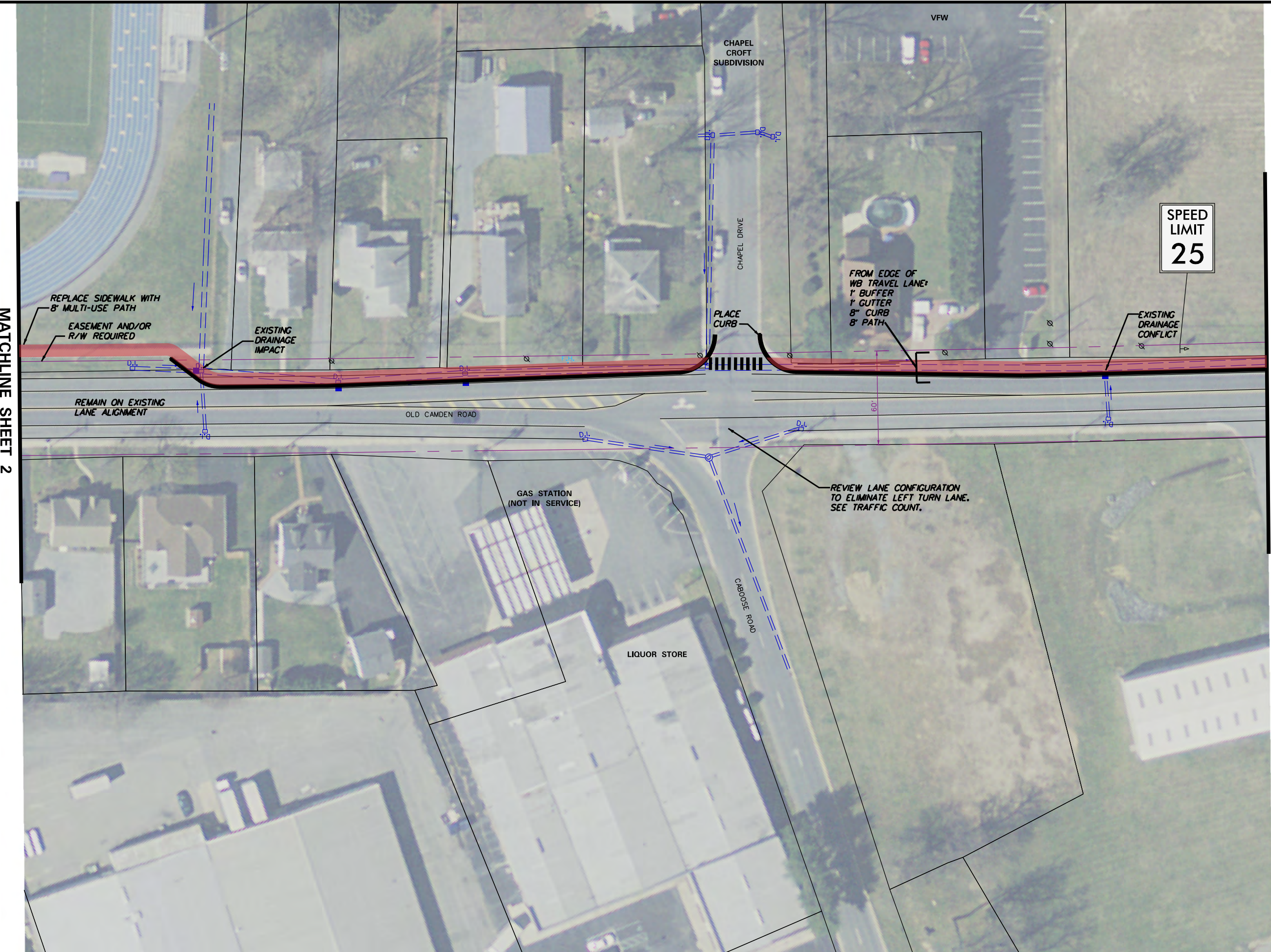
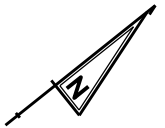
SHEET NO.	2
TOTAL SHTS.	4



MATCHLINE SHEET 1

MATCHLINE SHEET 3





MATCHLINE SHEET 2

MATCHLINE SHEET 4

REPLACE SIDEWALK WITH
8" MULTI-USE PATH
EASEMENT AND/OR
R/W REQUIRED

EXISTING
DRAINAGE
IMPACT

REMAIN ON EXISTING
LANE ALIGNMENT

OLD CAMDEN ROAD

PLACE
CURB

CHAPEL DRIVE

CHAPEL
CROFT
SUBDIVISION

FROM EDGE OF
WB TRAVEL LANE:
1' BUFFER
1' GUTTER
8" CURB
8' PATH

SPEED
LIMIT
25

EXISTING
DRAINAGE
CONFLICT

GAS STATION
(NOT IN SERVICE)

LIQUOR STORE

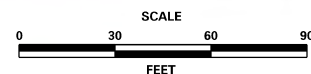
CABOOSE ROAD

REVIEW LANE CONFIGURATION
TO ELIMINATE LEFT TURN LANE.
SEE TRAFFIC COUNT.

DATE\$
FILE\$
TIME\$

 DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



ROUTE 10 PATHWAY,
OLD NORTH RD TO OLD CAMDEN RD
(PHASE I)

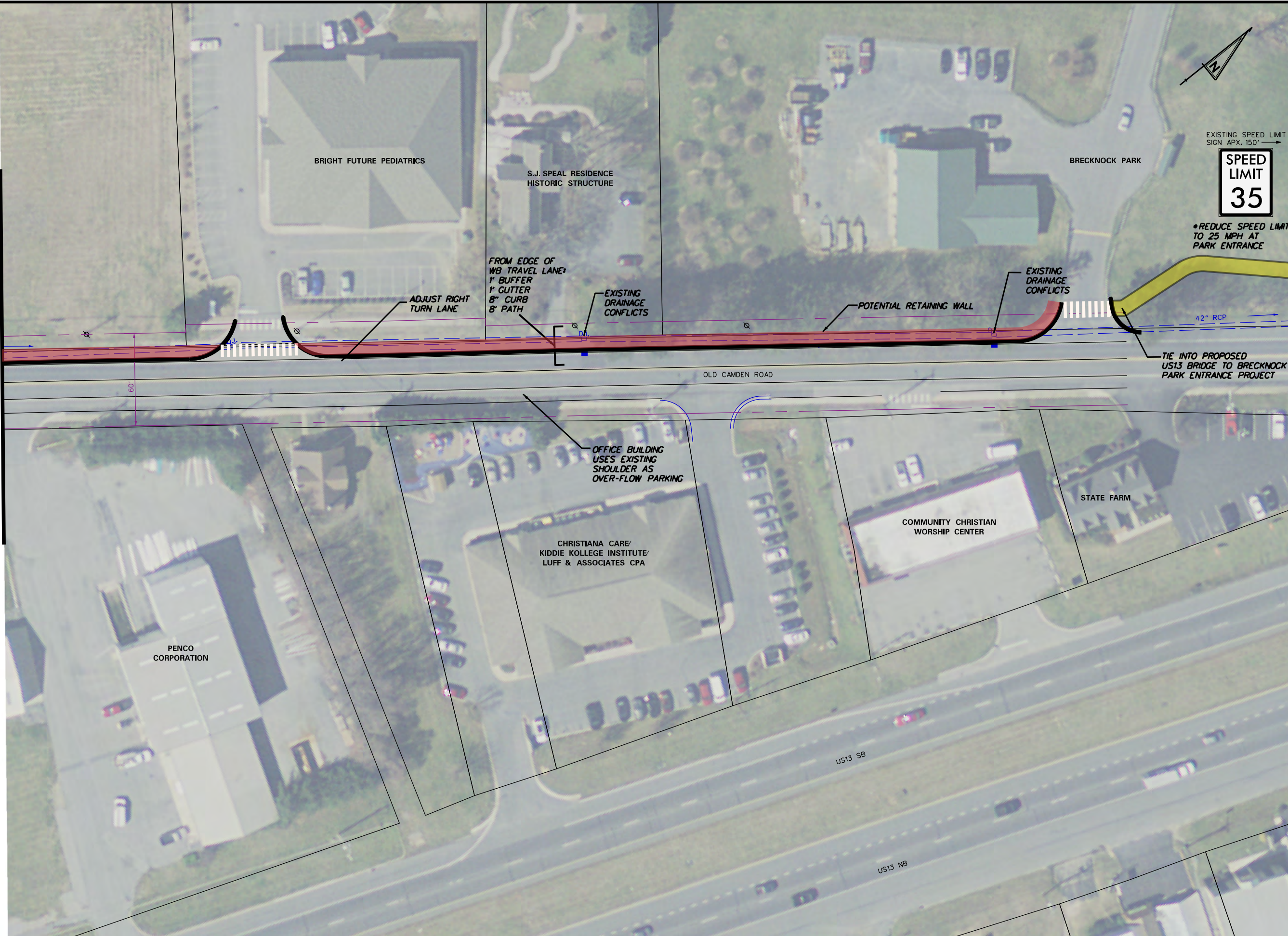
CONTRACT
1201330011
COUNTY
KENT

BRIDGE NO. X
DESIGNED BY:
CHECKED BY:

CONCEPT PLAN

SHEET NO.
3
TOTAL SHTS.
4

MATCHLINE SHEET 3

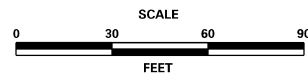


DATE\$
FILE\$
TIME\$



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



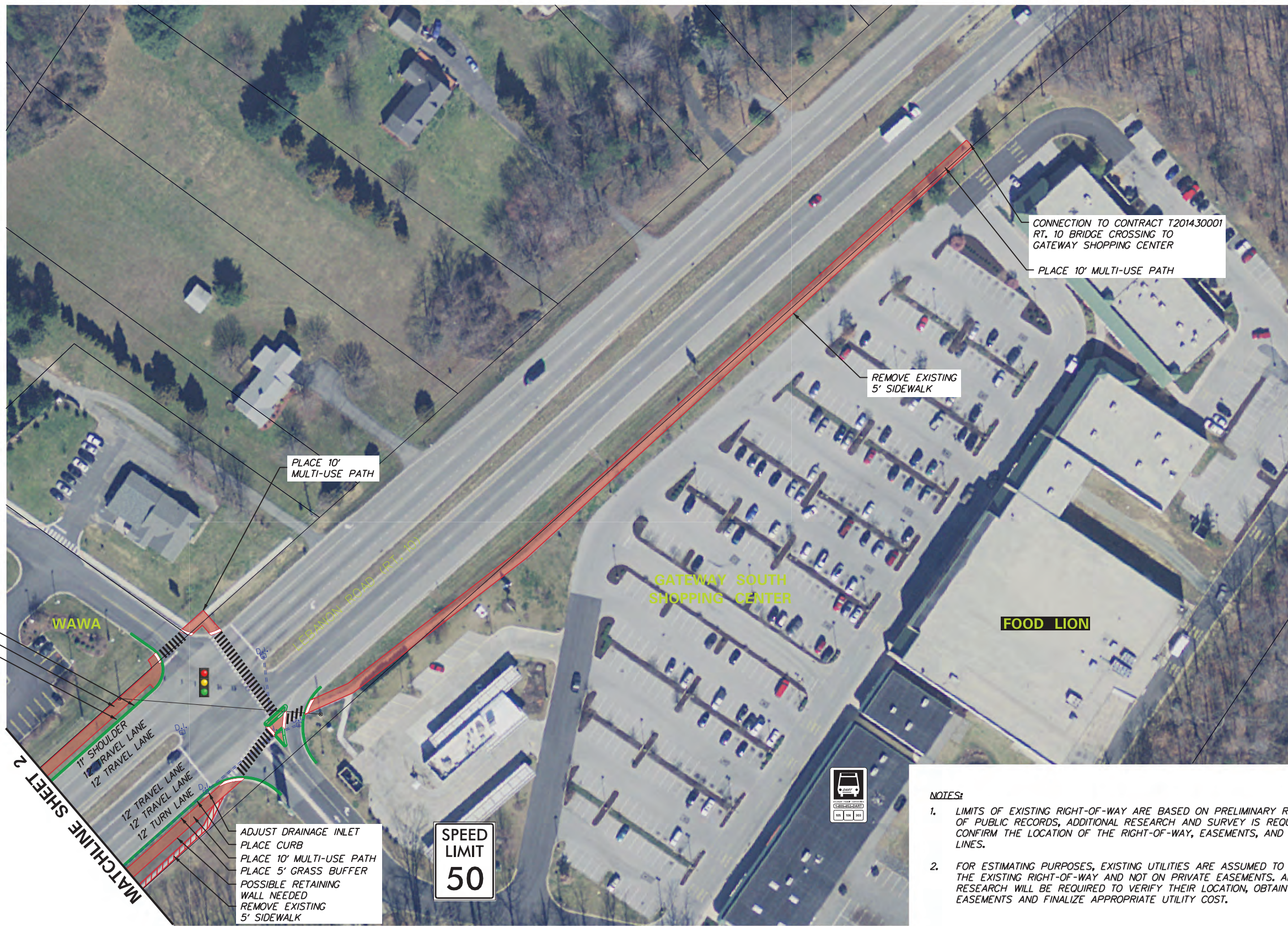
ROUTE 10 PATHWAY,
OLD NORTH RD TO OLD CAMDEN RD
(PHASE I)

CONTRACT
1201330011
COUNTY
KENT

BRIDGE NO.	X
DESIGNED BY:	
CHECKED BY:	

CONCEPT PLAN

SHEET NO.	4
TOTAL SHTS.	4



- NOTES:**
1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
 2. FOR ESTIMATING PURPOSES, EXISTING UTILITIES ARE ASSUMED TO BE WITHIN THE EXISTING RIGHT-OF-WAY AND NOT ON PRIVATE EASEMENTS. ADDITIONAL RESEARCH WILL BE REQUIRED TO VERIFY THEIR LOCATION, OBTAIN ANY EASEMENTS AND FINALIZE APPROPRIATE UTILITY COST.

LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,115 LF

9/9/2015 7:36:49 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP13-rt 10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



**ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)**

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

CONCEPT PLAN

SHEET NO.	1
TOTAL SHTS.	9

9/9/2015 9:45:01 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP12-rt 10.dgn 7:38:25 AM



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

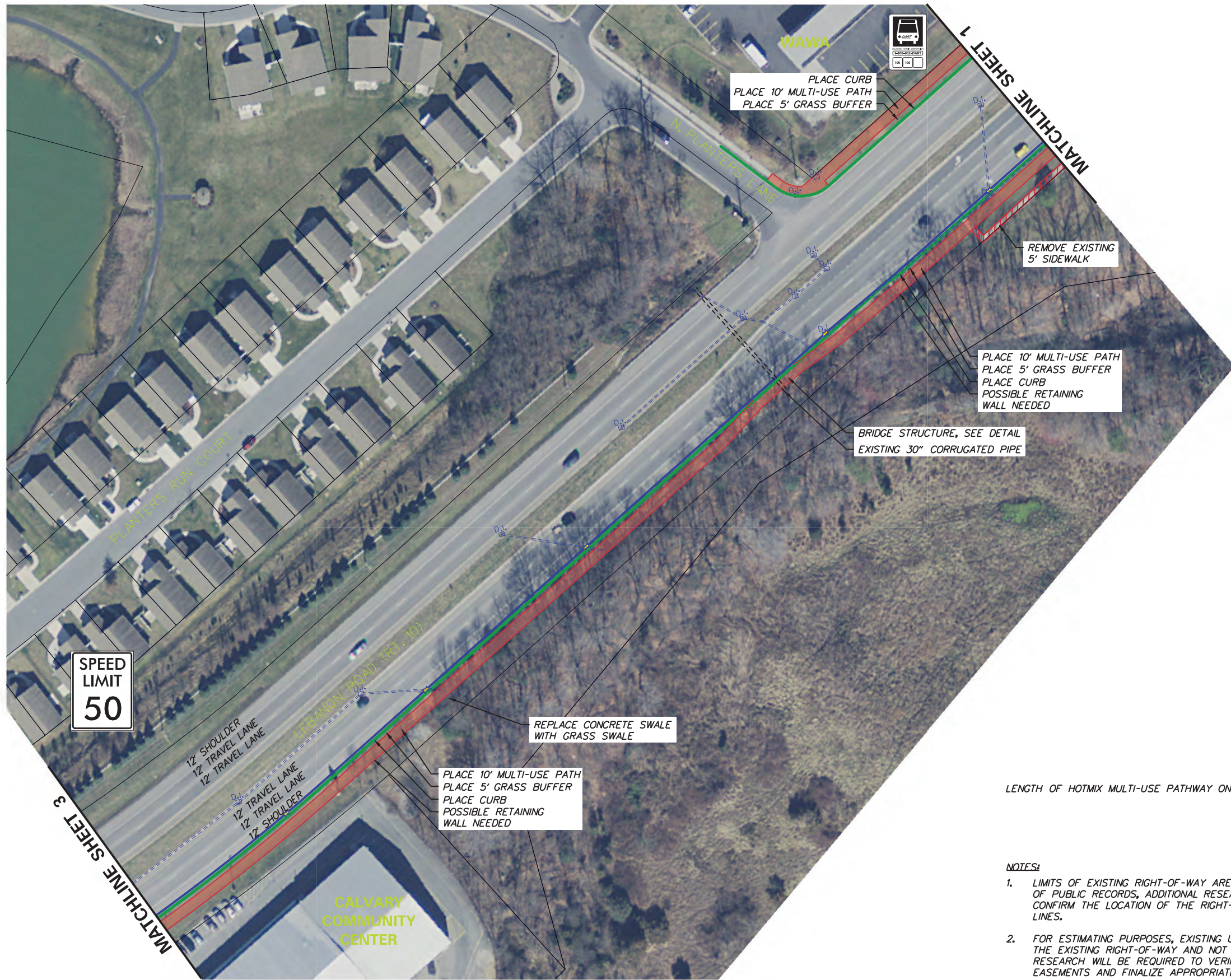


ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

CONCEPT PLAN

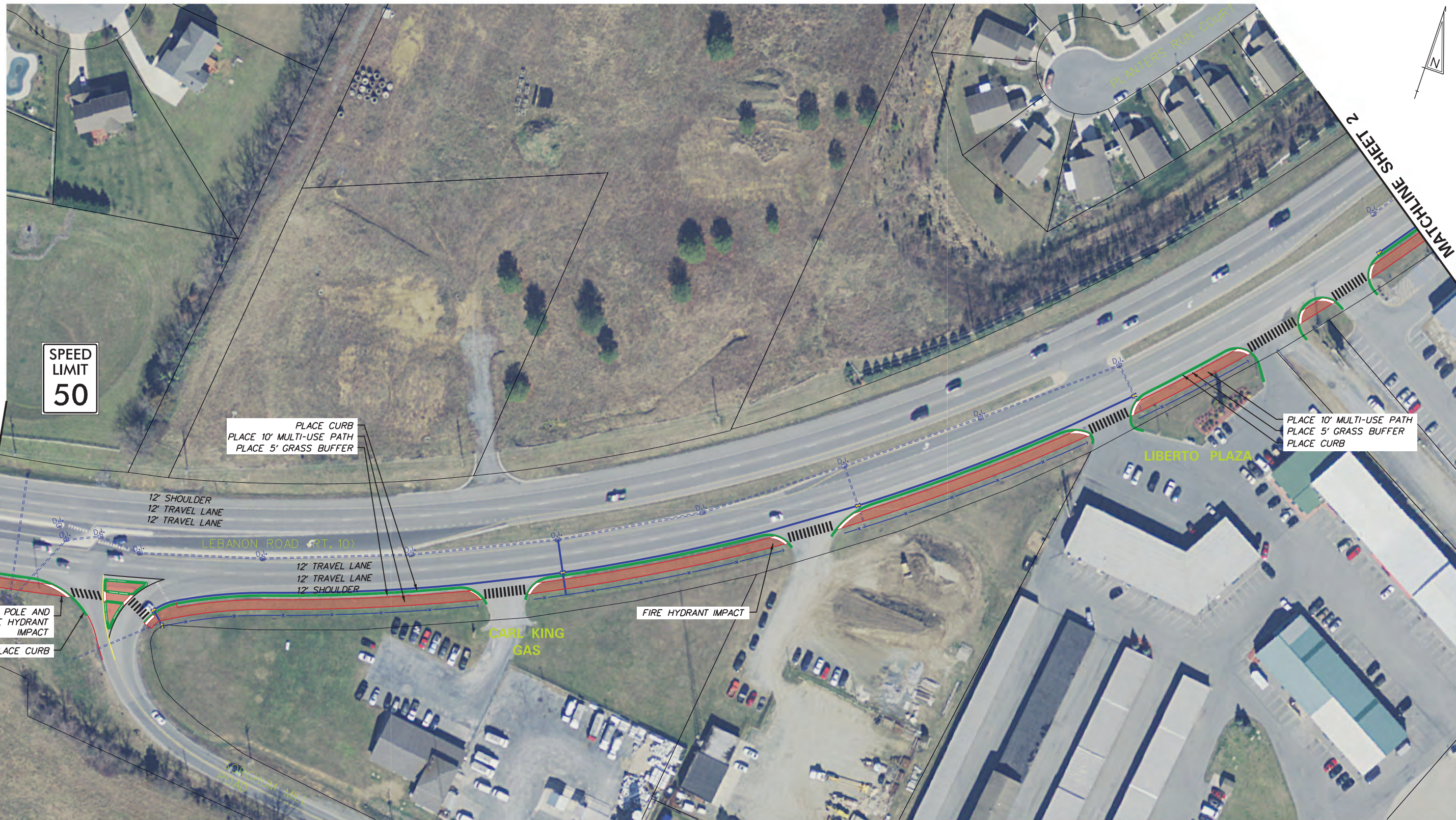
SHEET NO.
2
TOTAL SHTS.
9



LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,325 LF

NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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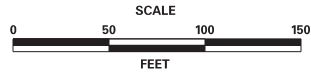
LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,192 LF

9/15/2015 3:43:39 PM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP11_r10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)

CONTRACT
T201330011
COUNTY
KENT

BRIDGE NO. X
DESIGNED BY:
CHECKED BY:

CONCEPT PLAN

SHEET NO.
3
TOTAL SHTS.
9



NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,434 LF

9/9/2015 9:31:04 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP10-rt 10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

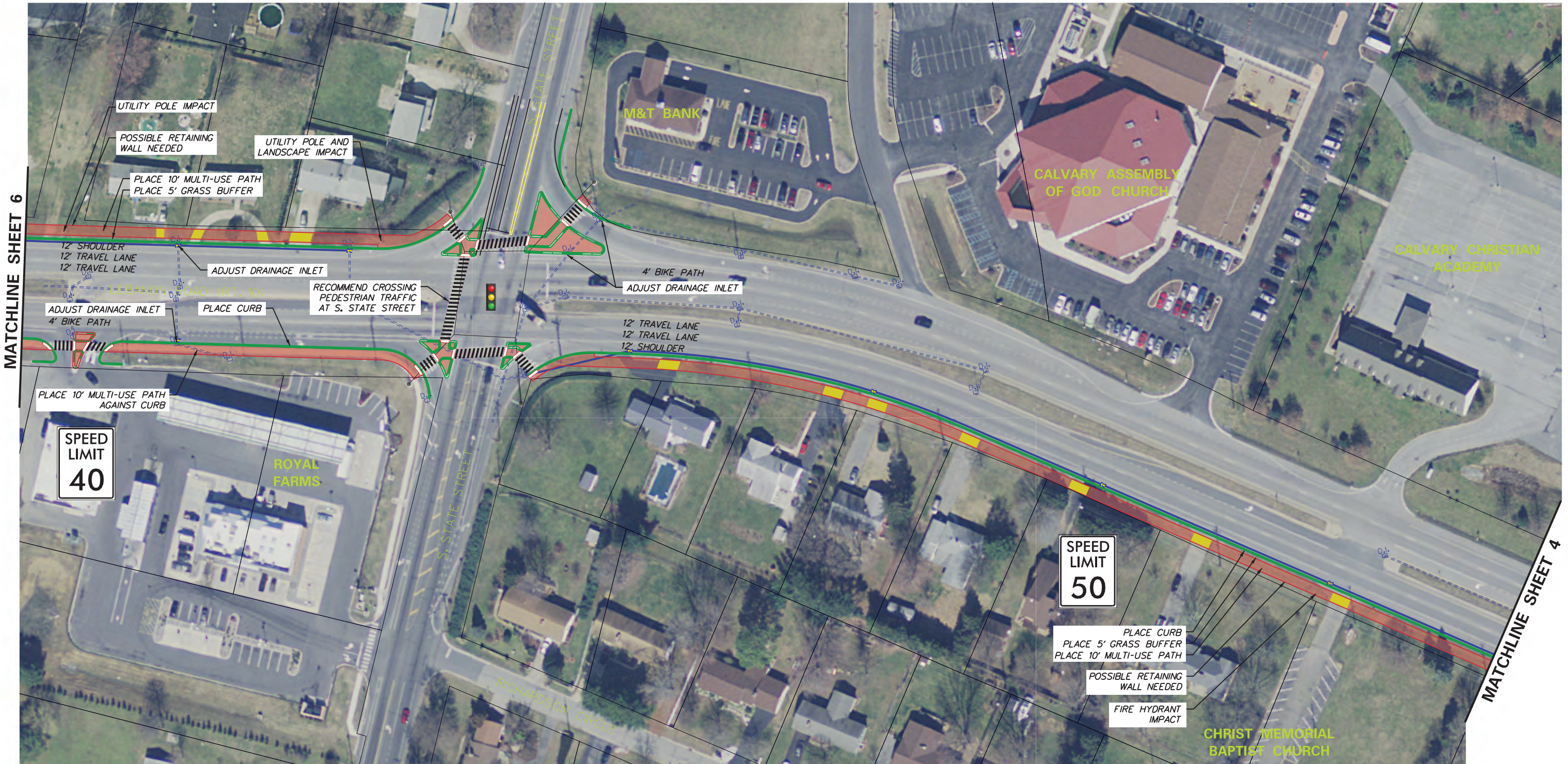


**ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)**

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

CONCEPT PLAN

SHEET NO.	4
TOTAL SHTS.	9



NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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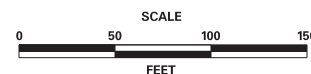
LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,874 LF

9/9/2015 9:31:59 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP09_r1 10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



**ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)**

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

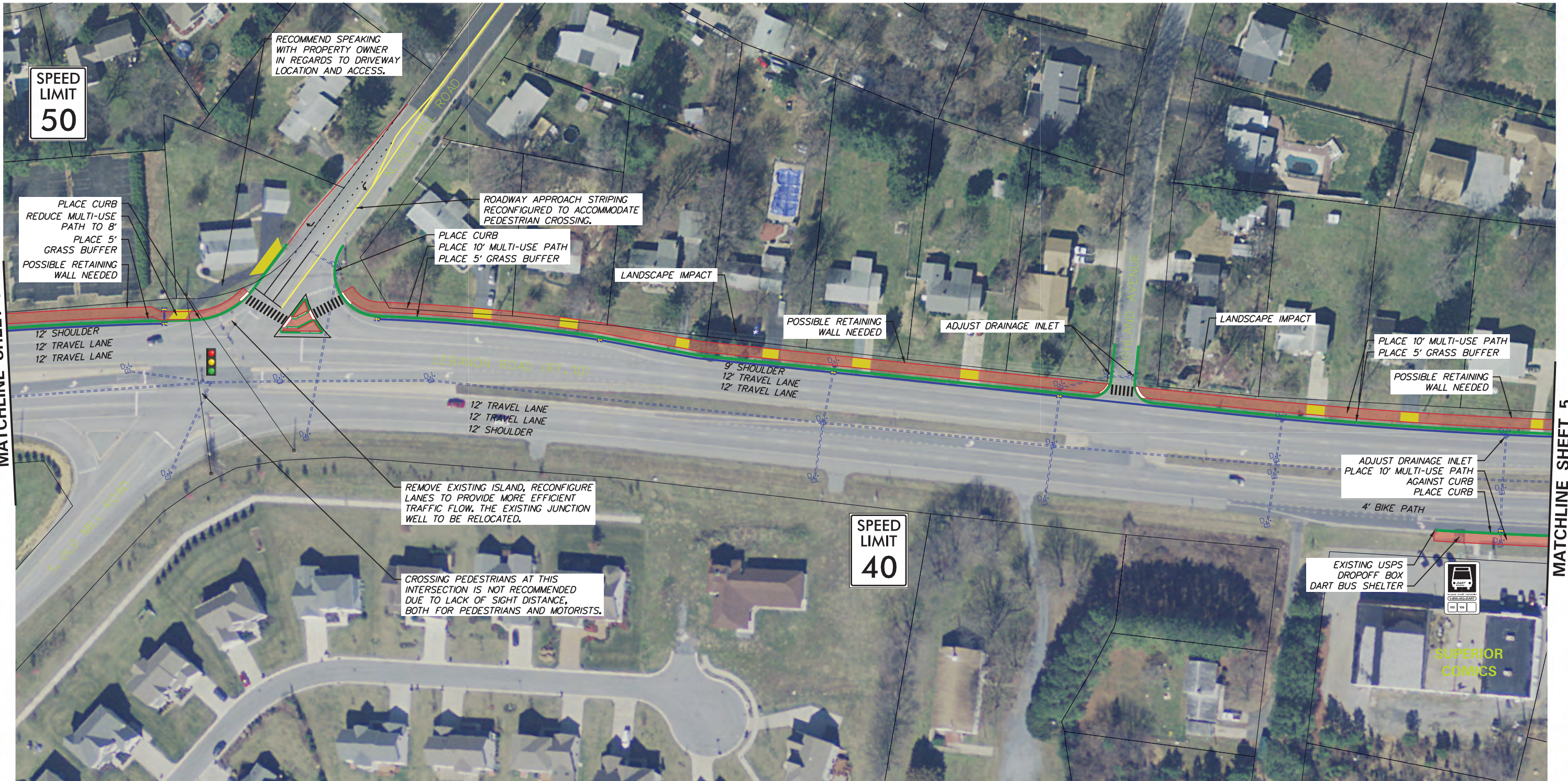
CONCEPT PLAN

SHEET NO.	5
TOTAL SHTS.	9

9/9/2015 9:32:56 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP08_r1 10.dgn



MATCHLINE SHEET 7



MATCHLINE SHEET 5

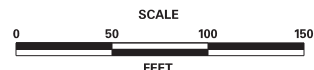
NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,425 LF

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



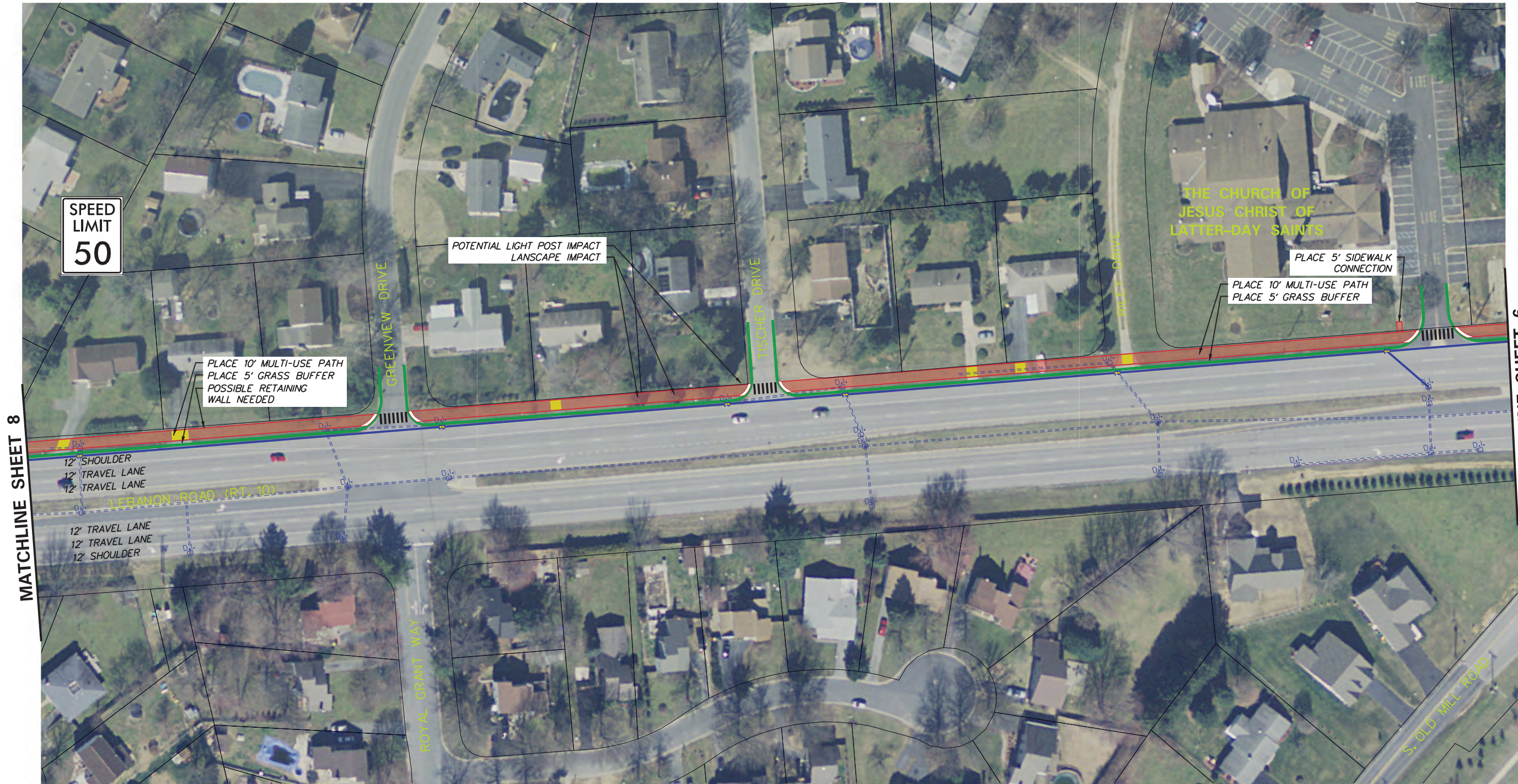
ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)

CONTRACT
T201330011
COUNTY
KENT

BRIDGE NO. X
DESIGNED BY:
CHECKED BY:

CONCEPT PLAN

SHEET NO.
6
TOTAL SHTS.
9



NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,305 LF



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)

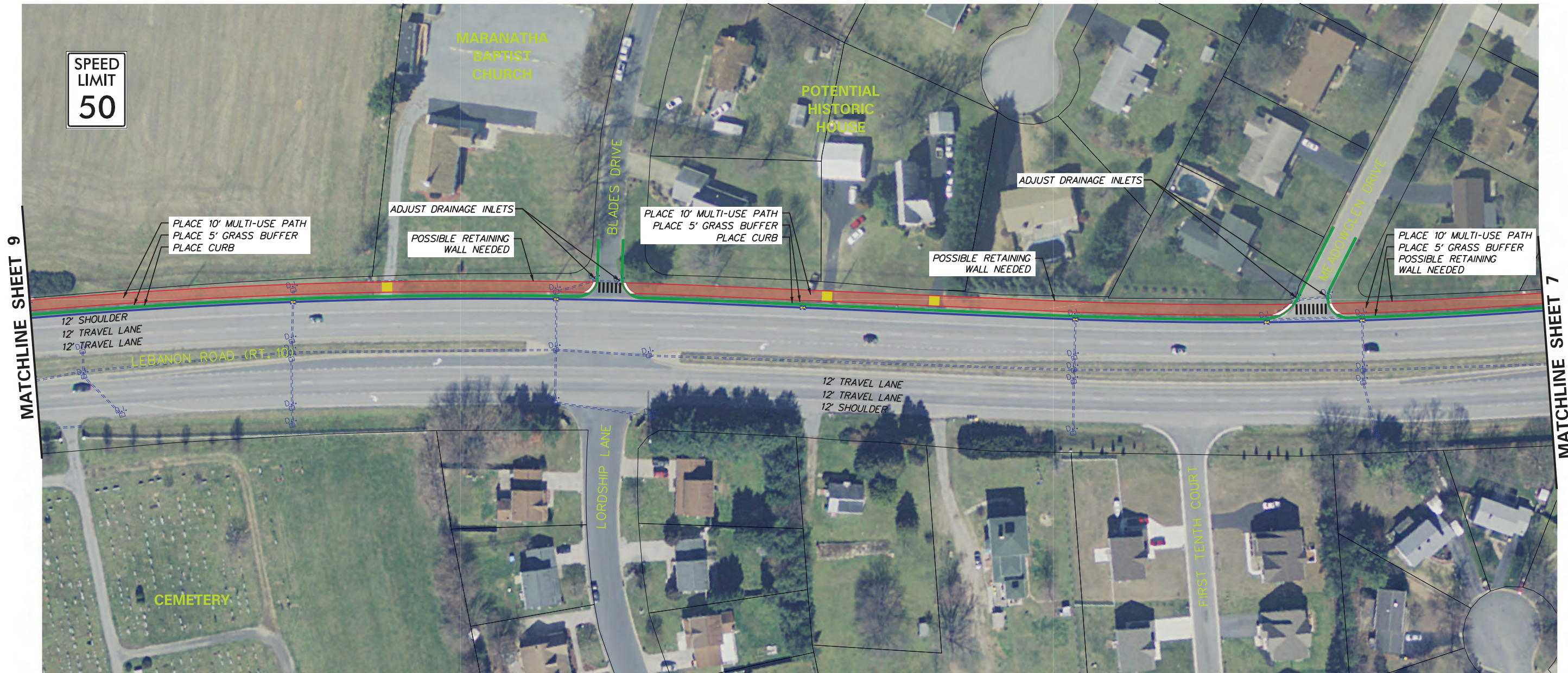
CONTRACT
T201330011
COUNTY
KENT

BRIDGE NO.
DESIGNED BY:
CHECKED BY:

X

CONCEPT PLAN

SHEET NO.
7
TOTAL SHTS.
9



NOTES:

1. LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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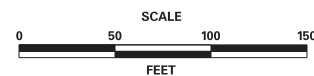
LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 1,385 LF

9/9/2015 9:36:07 AM G:\PROJECTS\145014\00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP06_r1 10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

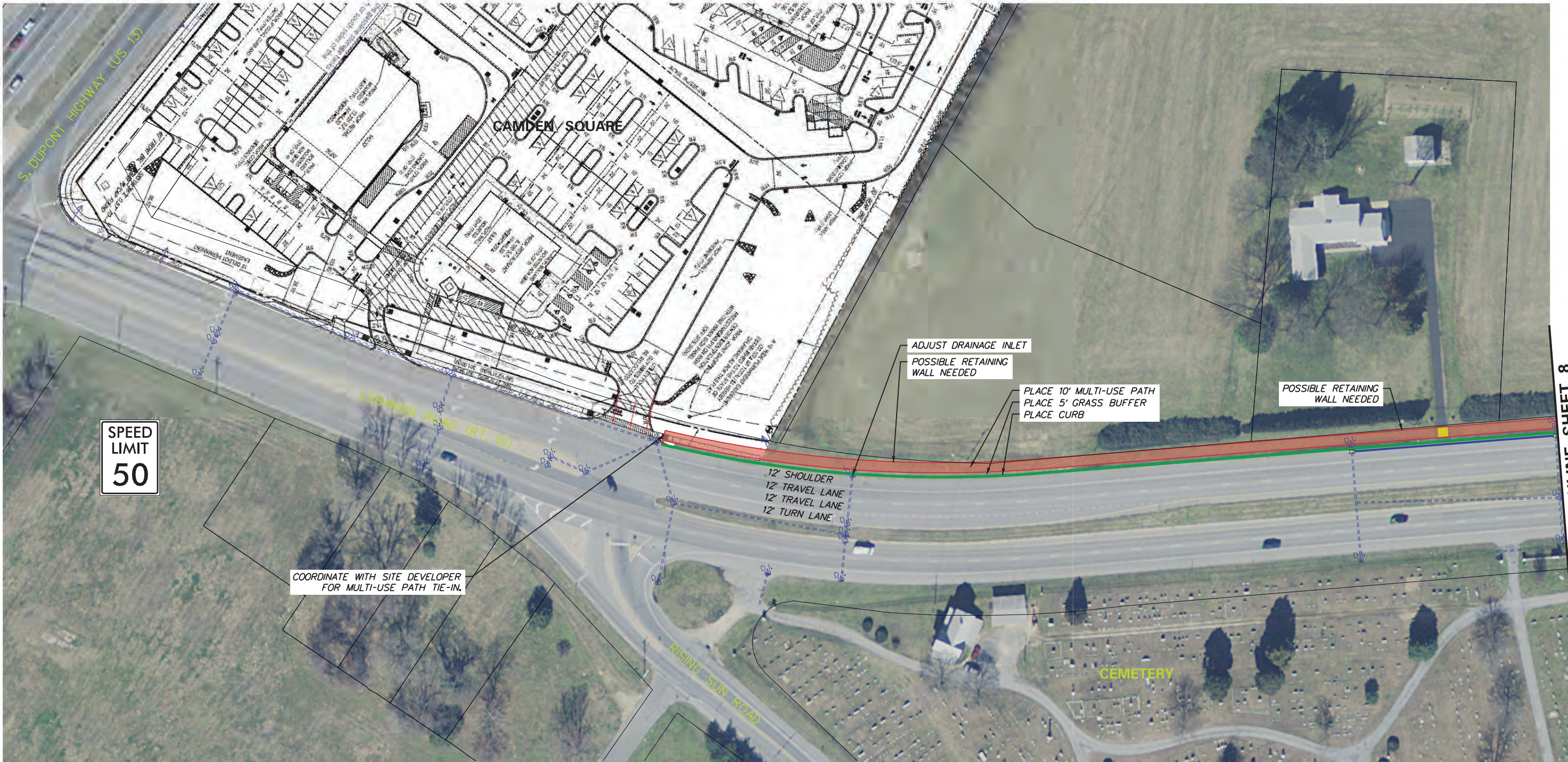


**ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)**

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

CONCEPT PLAN

SHEET NO.
8
TOTAL SHTS.
9



NOTES:

- LIMITS OF EXISTING RIGHT-OF-WAY ARE BASED ON PRELIMINARY RESEARCH OF PUBLIC RECORDS, ADDITIONAL RESEARCH AND SURVEY IS REQUIRED TO CONFIRM THE LOCATION OF THE RIGHT-OF-WAY, EASEMENTS, AND PROPERTY LINES.
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LENGTH OF HOTMIX MULTI-USE PATHWAY ON SHEET: 880 LF

9/9/2015 9:37:40 AM G:\PROJECTS\145014.00 Kent MPO SR 10 Pathway Concept\CADD FILES\CP05_r1 10.dgn



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

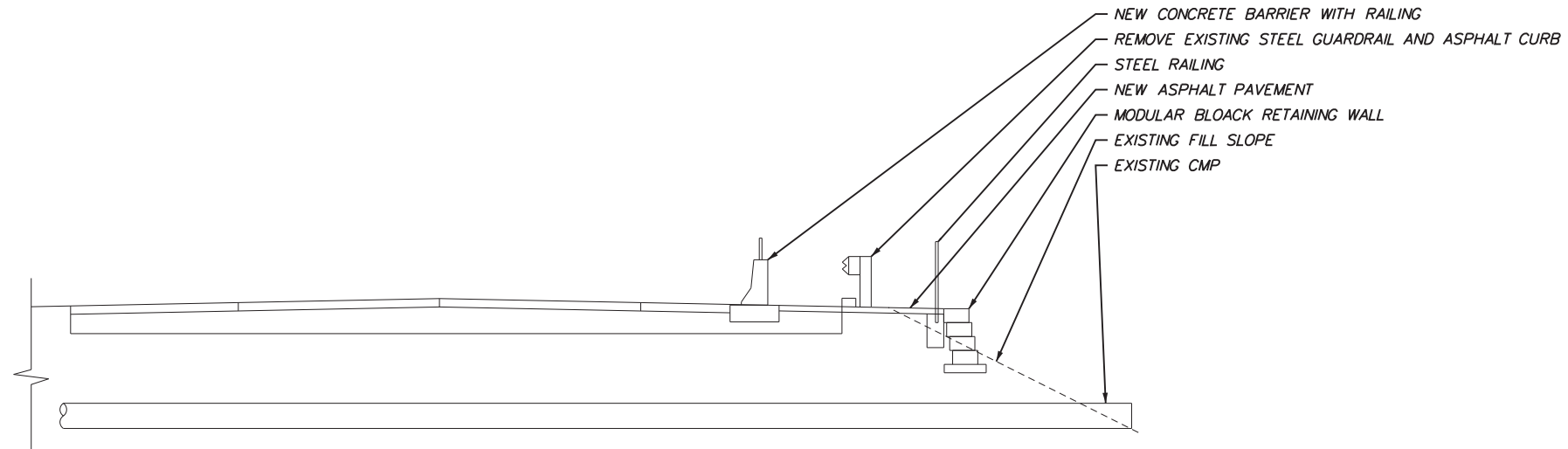


ROUTE 10 PATHWAY,
GATEWAY SOUTH SHOPPING
CENTER TO US13 (PHASES II & III)

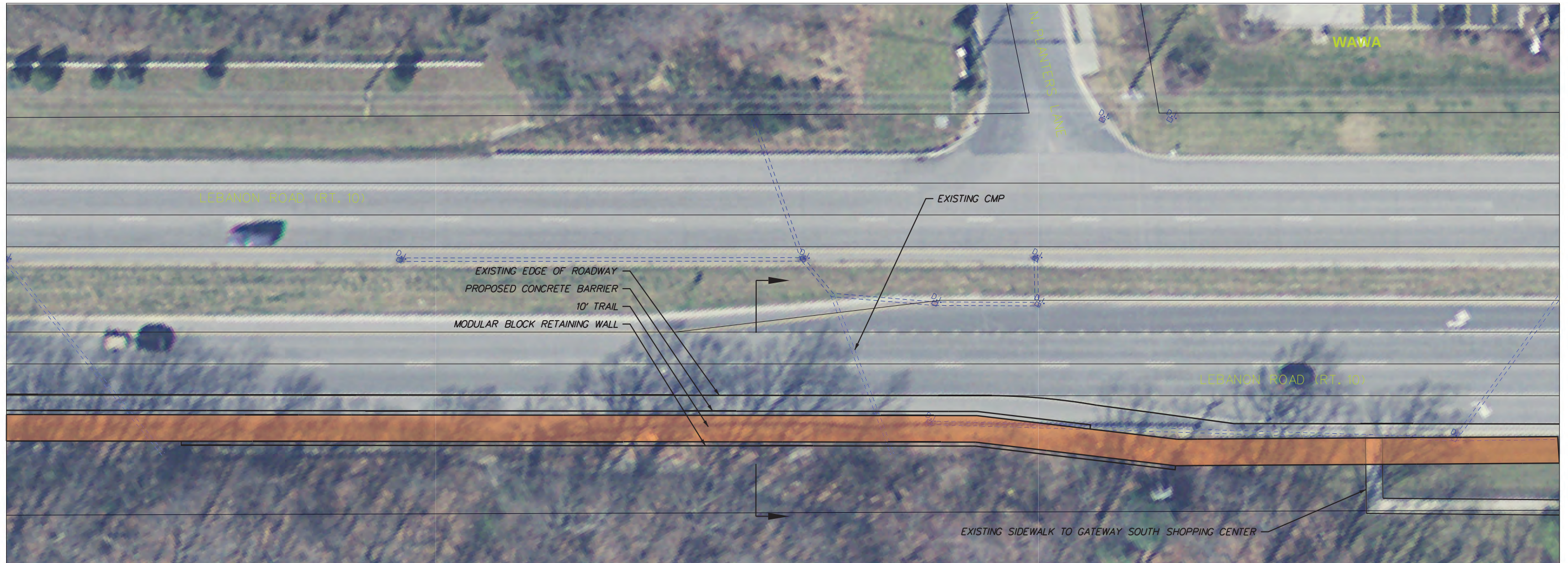
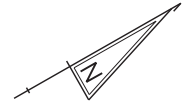
CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

CONCEPT PLAN

SHEET NO.
9
TOTAL SHTS.
9



TYPICAL SECTION EB SR 10
 NOT TO SCALE



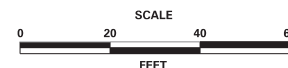
SR 20 PATHWAY

10/11/2015 10:52:43 AM G:\PROJECTS\145014.00 Kent WFO SR 10 Pathway Concept\CADD FILES\dt_bridge_r1 10.dgn



DELAWARE
 DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS



**ROUTE 10 PATHWAY,
 GATEWAY SOUTH SHOPPING
 CENTER TO US13 (PHASES II & III)**

CONTRACT	BRIDGE NO.	X
T201330011	DESIGNED BY:	
COUNTY	CHECKED BY:	
KENT		

**CONCEPT PLAN -
 PROTECTION PATHWAY**

SHEET NO.
TOTAL SHTS.

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road along CRHS frontage



EXISTING CONDITIONS



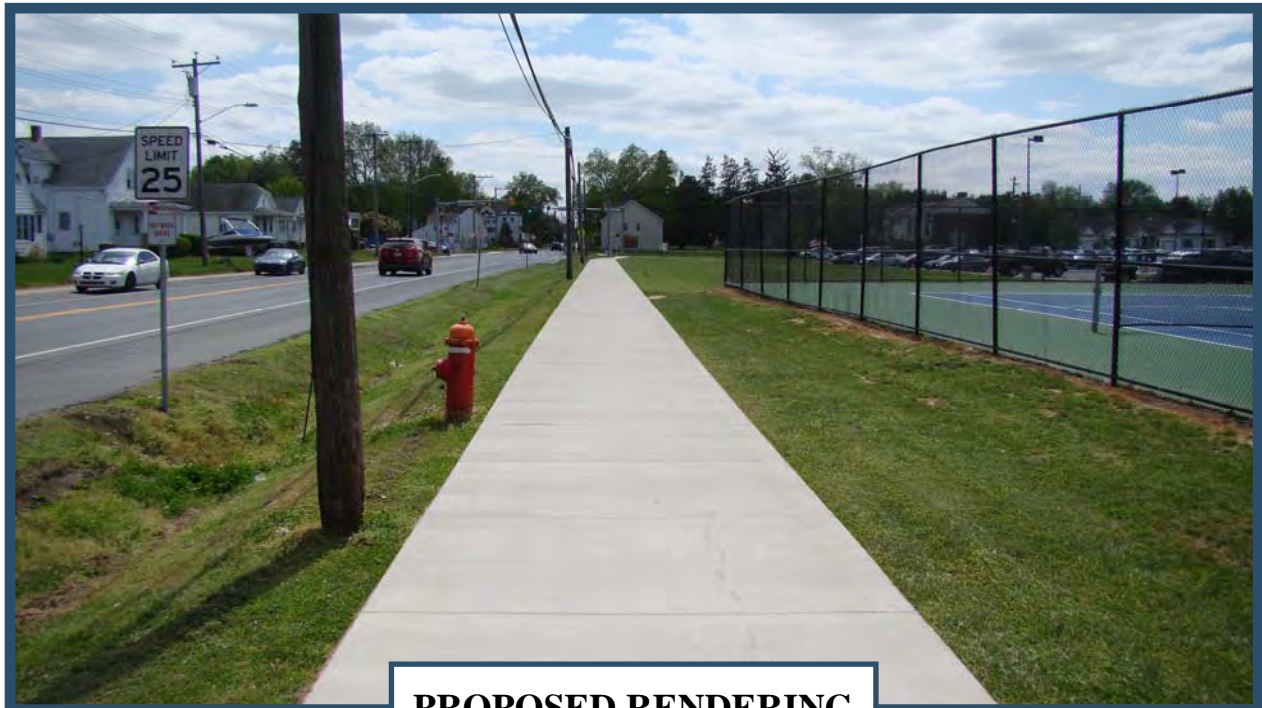
PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road along CRHS Tennis Courts



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road South of Chapel Drive



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road South of Brecknock Park



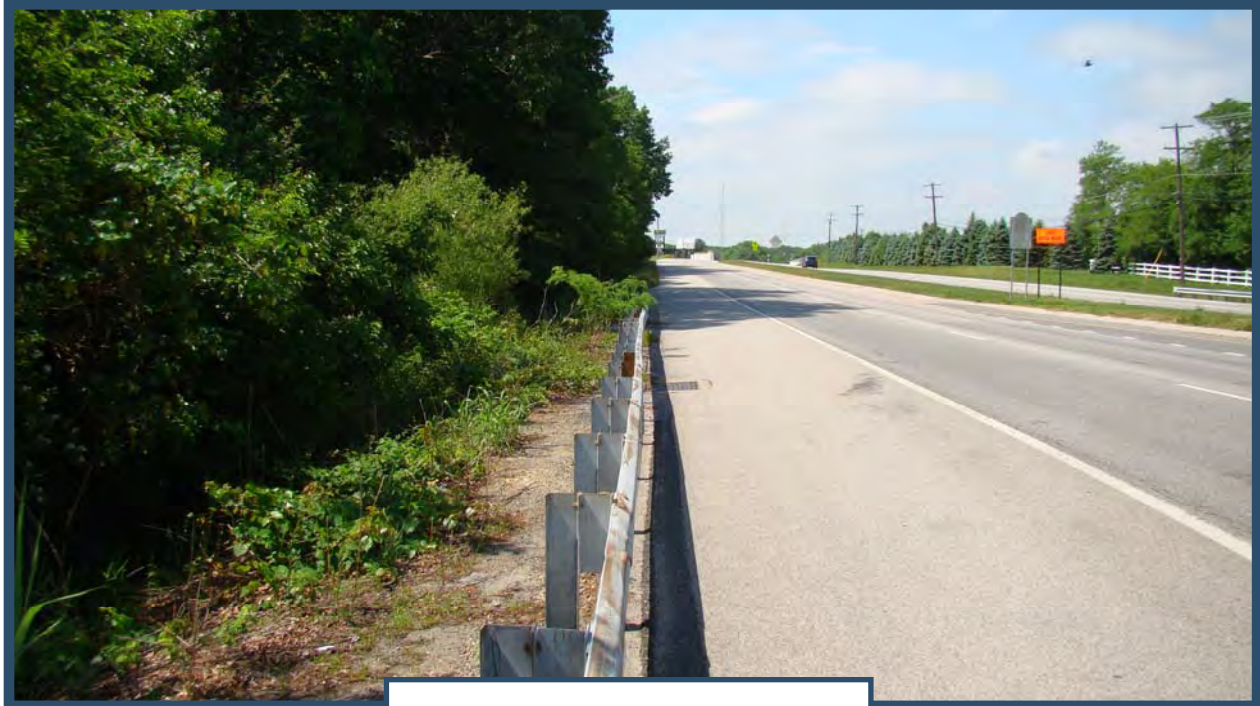
EXISTING CONDITIONS



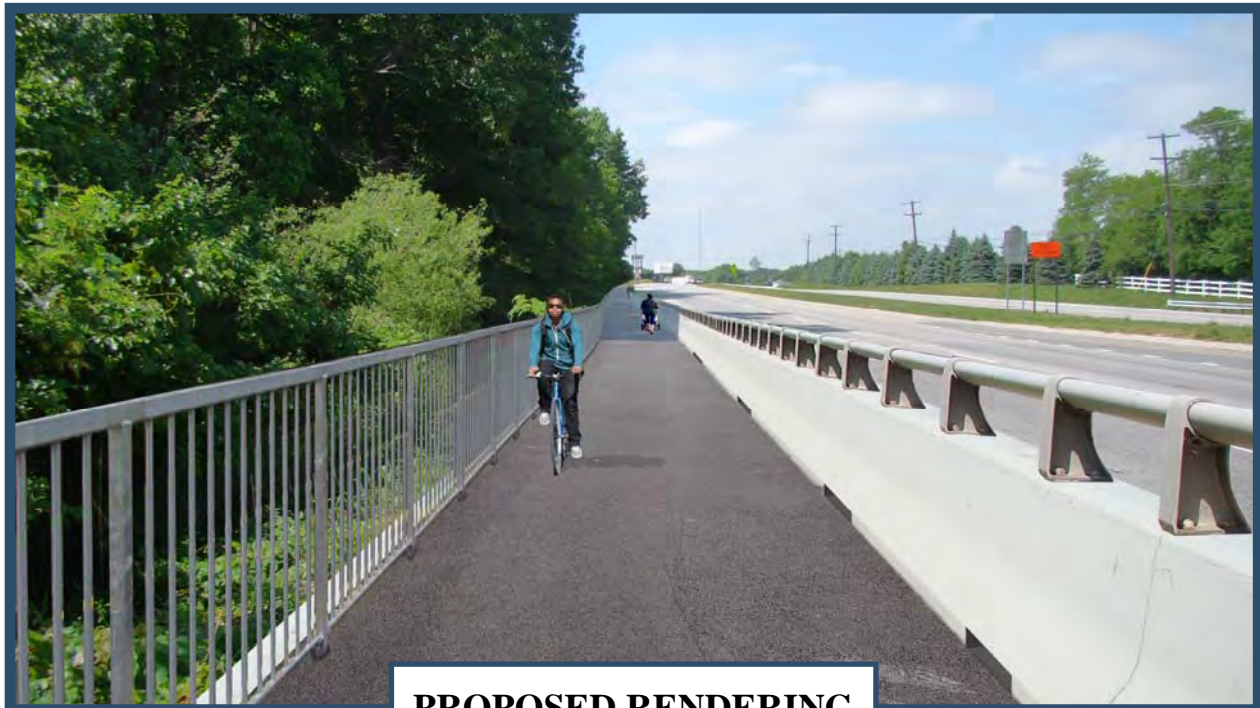
PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

Route 10 at Gateway South Shopping Center



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

Route 10 at Liberto Plaza



EXISTING CONDITIONS



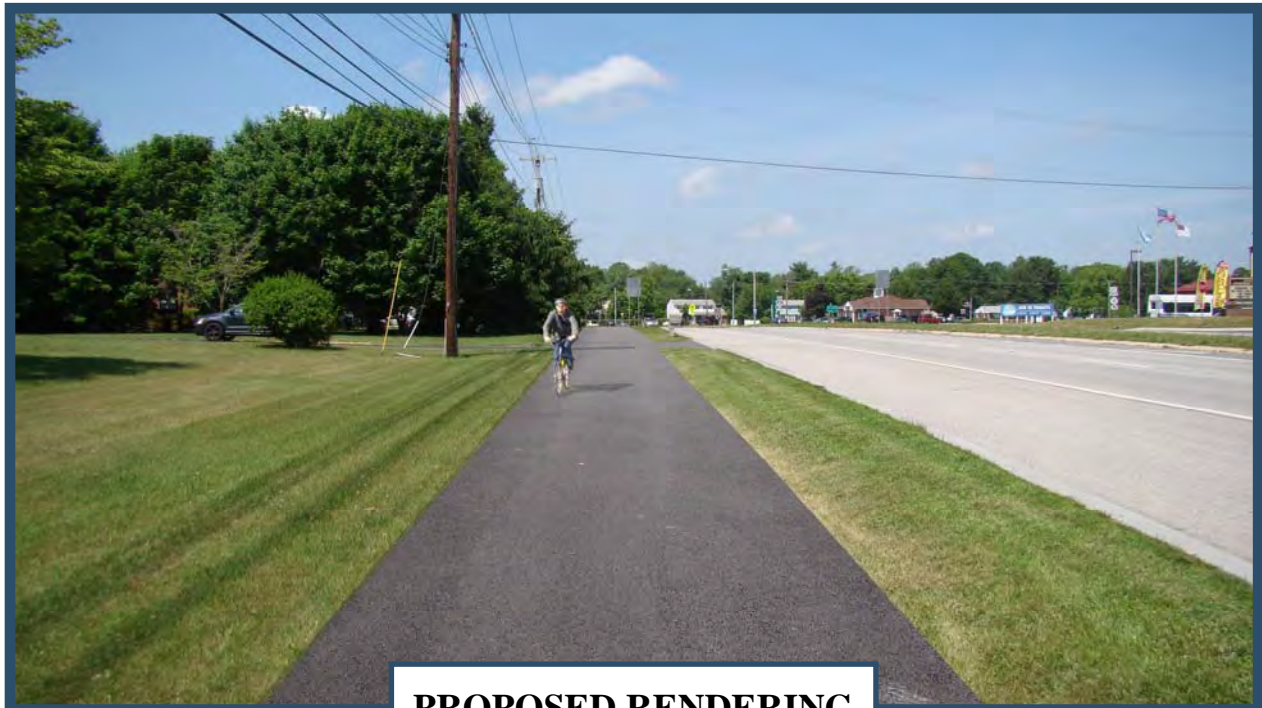
PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

Route 10 East of State Street



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

Route 10 between State Street and Old Mill Road



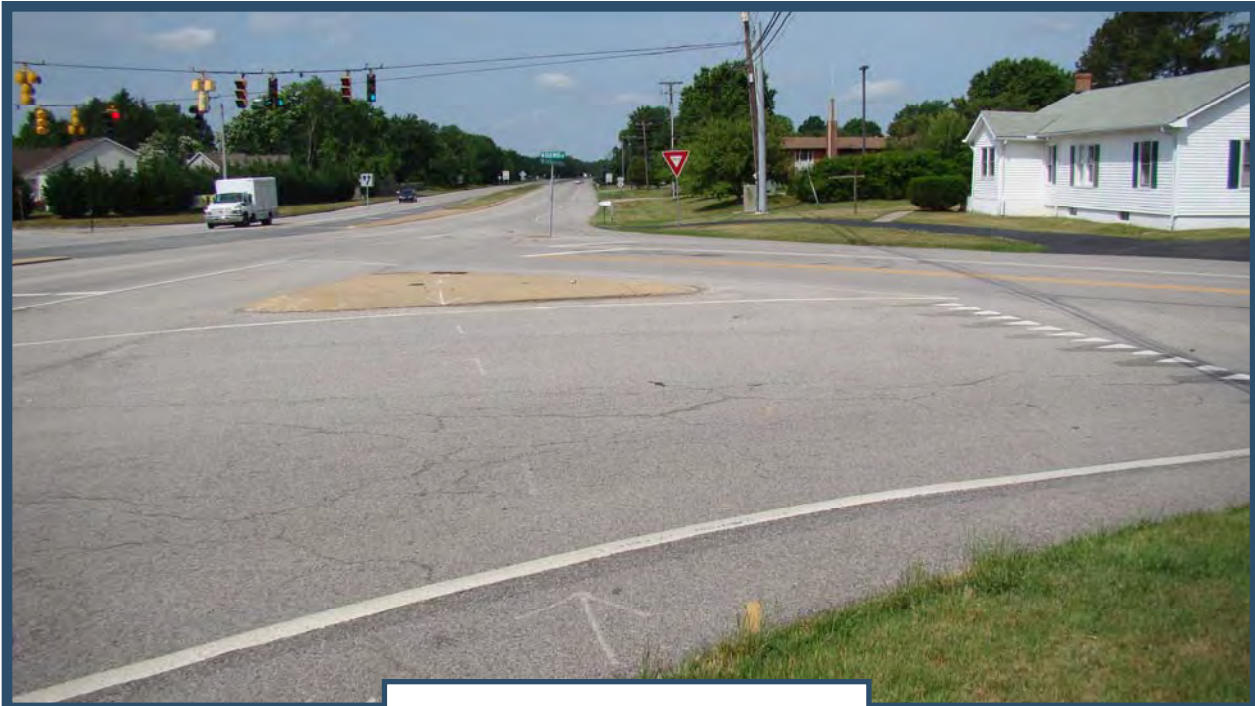
EXISTING CONDITIONS



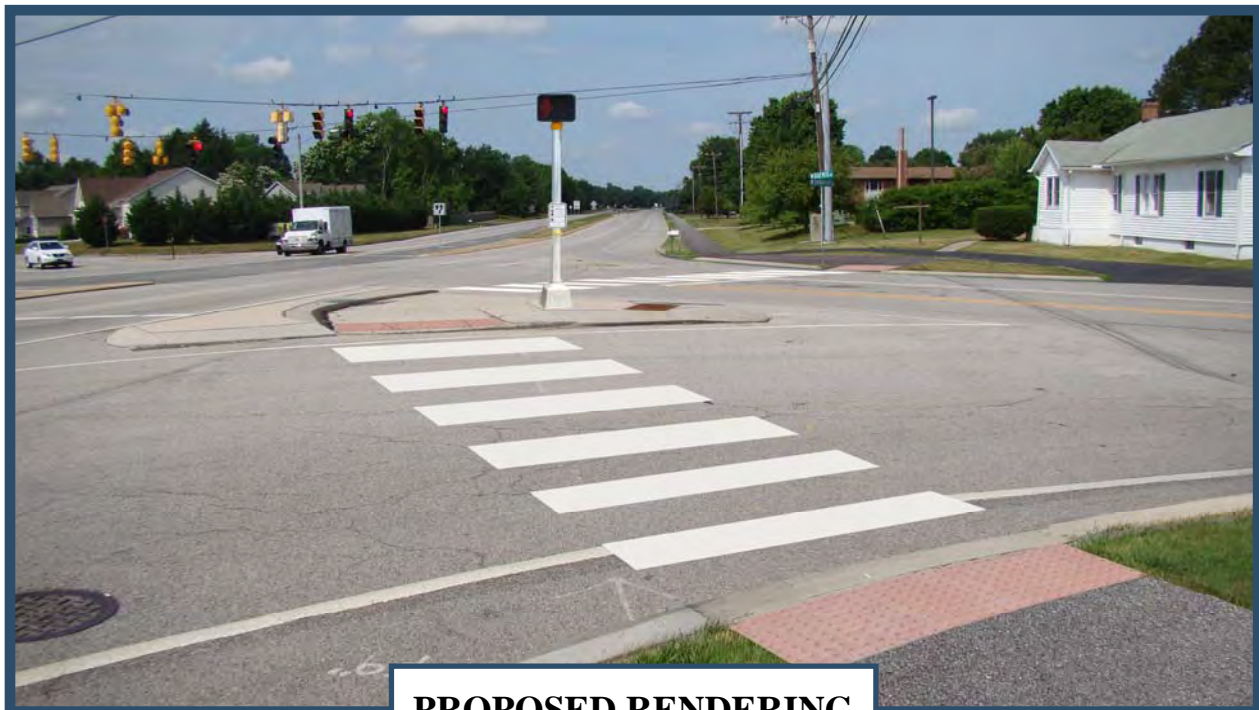
PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

Route 10 at Old Mill Road



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

Route 10 at Marantha Church



EXISTING CONDITIONS



PROPOSED RENDERING

Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old North Road (facing west) from US13



Old North Road (facing east) toward US13



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old North Road (facing east)



Old North Road (facing east)



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road (facing south) at Old North Road intersection



Old Camden Road (facing south). Existing sidewalk along CRHS



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road. Potential connection to CRHS



Old Camden Road (facing south). Potential fence to be relocated along CRHS



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road between Chapel Drive and CRHS



Old Camden Road at Chapel Drive



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Private resident on Old Camden Road immediately north of Chapel Drive



Existing sidewalk in front of Bright Futures Pediatrics on Old Camden Road



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 1

Old Camden Road (facing south)



Existing berm along Brecknock Park on Old Camden Road



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

SR 10 at Wawa Intersection (facing east)



SR 10 at Wawa Intersection (facing east)



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

SR 10 sidewalk removal/relocation (facing west)



SR 10 proposed location of protection pathway (facing east)

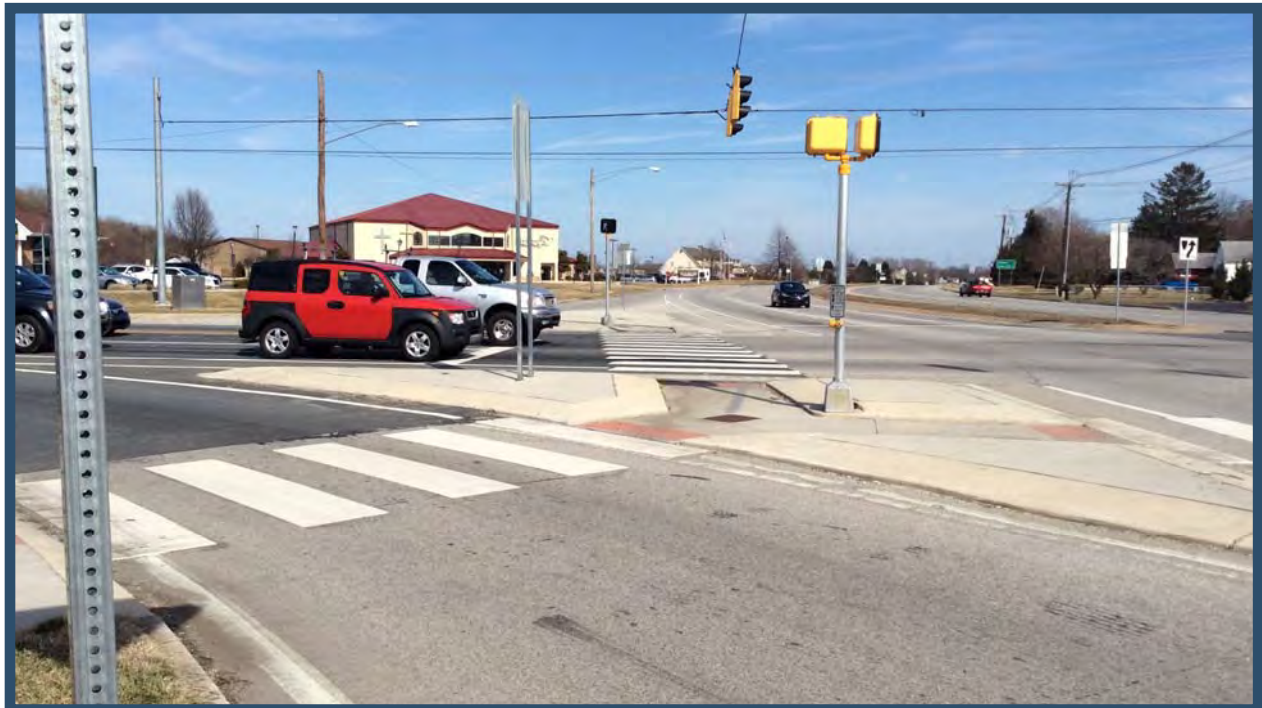


Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 2

Pedestrian Crossing at South State Street Intersection (facing south)



Pedestrian Crossing at South State Street Intersection (facing east)



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

DART Bus Stop and USPS Drop-off Box location (facing east)



SR 10 approaching North Old Mill Road Intersection (facing west)



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

Proposed Pedestrian Crossing at N. Old Mill Road Intersection (facing east)



Potential Driveway Reconfiguration at N. Old Mill Road (facing west)



Route 10 Pathway, Brecknock Park to Gateway South Shopping Center Phase 3

Proposed Camden Square Entrance Location (facing west)



SR 10 approaching US 13 Intersection (facing west)



CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

1. NAME OF PROJECT	<u>Rt 10 Pathway, Old North Road to Old Camden Road - P1</u>	<u>Kent</u>
	Subdivision or Road Name	County

2. LIMITS

Street Name or Road Number	From	To	Length
Old North Road	US13 Dupont Hwy	Old Camden Rd (K4)	875'
Old Camden Road (K004)	Old North Road	Brecknock Park Entranc	2150'

3. ESTIMATE REQUESTED BY:	<u>Jeff Niezgoda</u>	for (check one)	<input type="checkbox"/> Project initiation	
	Name		<input checked="" type="checkbox"/> Estimate only	Section or Legis. Dist.

4. DESCRIPTION OF IMPROVEMENT:

Construct a 8' wide multi-use path from US13 Dupont Hwy on Old North Road to Old Camden Road and continue to the Brecknock Park Entrance. NEPA (with 4(f)) coordination will be necessary. No environmental permits are anticipated.

4. PROJECT IN C.I.P. Yes ☐ No ☒ If "Yes", indicate year F.Y. _____

5. TYPICAL SECTION

6" Concrete Sidewalk + 6" GABC Type B + 8" Borrow Type F

6. STATE MAINTAINED ☒ CITY MAINTAINED ☐ PRIVATE ☐ OTHER ☐ (specify) _____

7. COST ESTIMATE:	from C.I.P. estimate form	Estimate prepared by:	Date:
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a. Location and Environmental Studies	\$0	Part I	Century Engineering,	06/03/15
(Part I to be included only for class "I" and "III" projects)				

b. Preliminary Engineering	\$165,000	Part II	Century Engineering, Inc.	06/03/15
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c. Real Estate	\$20,000	Part III	Century Engineering, I	06/03/15
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d. Construction *	\$1,212,545	Part IV	Century Engineering, I	06/03/15
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e. TOTAL ESTIMATED PROJECT COST	\$1,397,545
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* Includes Utilities, Traffic, and C.E.

APPROVED

Valid thru	_____	_____	_____
	Date	Assistant Director, M&O/Transportation Solutions/Planning	Date

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part I of V

Contract No. _____

Project Title: Rt 10 Pathway, Old North Rd to Old Camden Road - P1

PART I - LOCATION & ENVIRONMENTAL STUDIES (N/A)

(Part I to be included only for class "I" & "III" projects)

A. ENGINEERING

(Includes NEPA)

B. ARCHAEOLOGY

1. Phase I (study)

2. Phase 2 (study)

3. Phase 3 (mitigation)

C. WETLANDS

1. Delineation (study)

2. Permit preparation

3. Mitigation (design)

D. HAZARDOUS MATERIAL

1. Phase 1 (study)

2. Phase 2 (study)

3. Phase 3 (remediation)

E. HISTORIC

1. Phase 1 (study)

2. Phase 2 (study)

3. Mitigation (by loc./env.)

4. Mitigation (by design)

F. NOISE

1. Studies

2. Mitigation (by design)

G. OTHER

1. _____

2. _____

TOTAL COSTS FOR PART I (A thru G) ROUNDED

CONTINGENCY COSTS

(normally 5% for large projects and 10% for small projects - to be approved by section head)

TOTAL LOCATION AND ENVIRONMENTAL STUDIES COSTS

(also total for Construction Project Estimate form line 7a)

Estimator: Century Engineering, Inc. (LCH)

Date: 06/03/15

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part II of V

Contract No. _____

Project Title: Rt 10 Pathway, Old North Rd to Old Camden Road - P1

PART II - PRELIMINARY ENGINEERING

A. SURVEYS

\$20,000

1. Inhouse

\$20,000

2. Consultant

B. DESIGN ENGINEERING

\$143,000

1. Design

\$137,000

a. Inhouse

b. Consultant

\$137,000

2. Traffic

\$1,000

a. Inhouse

\$1,000

b. Consultant

3. Real Estate Plan Preparation

\$0

a. Inhouse

b. Consultant

4. Utilities

\$5,000

a. Inhouse

b. Consultant

c. Test Holes

\$5,000

d. Utility Company

5. Materials & Research

6. Borings

7. Pile Load Tests

8. Subdivision

\$0

a. Inhouse

b. Consultant

c. Railroad P.E.

9. Other (specify)

\$0

a. _____

b. _____

C. ENVIRON. ASSESSMENT

\$1,500

(use for class "II" projects only)

1. Wetlands

\$0

2. Hazardous Materials

3. Noise

4. Historic

5. Archaeology

6. Other

a. CEE with 4(f)

\$1,500

b. Env. Permits

Loc/Environ

Estimator: _____ Date: _____

D. CONTRACT ADMINISTRATION

Cont/Admin

Estimator: _____ Date: _____

TOTAL COSTS FOR PART II (A thru D) ROUNDED

\$165,000

CONTINGENCY COSTS

(normally 5% for large projects and 10% for small projects - to be approved by section head)

_____ (% used)

\$0

TOTAL PRELIMINARY ENGINEERING

(also total for Construction Project Estimate form line 7b)

\$165,000

Estimator: Century Engineering, Inc. (LCH)

Date: 06/03/15