

Revitalization of Pennsylvania Avenue, SE For the Great Streets Initiative Concept Design – Final Report Executive Summary

The concept design for the Revitalization of Pennsylvania Avenue, SE has been developed as part of the District of Columbia's Great Streets Initiative to improve quality of life in neighborhoods along the corridor, support local demand for goods and services through economic revitalization, expand mobility choices, improve safety and efficiency of all modes of transportation and attract private investment through the demonstration of public commitment to Great Street communities. The Anacostia Waterfront Initiative Architectural Design Standards and the Great Streets Framework will be incorporated into the design. The project will also utilize context sensitive solutions/design to incorporate safety and access improvements while preserving the historical integrity of the project area.

The project area encompasses Pennsylvania Avenue, SE from the foot of the Sousa Bridge to Southern Avenue, SE and is concentrated on improvements to the public right of way and infrastructure.

The goal of this project, the first of the Great Streets corridors to be implemented, is to revitalize Pennsylvania Avenue, SE by improving safety and mobility for vehicular, bicyclist and pedestrian traffic; streetscaping and urban design; and encouraging economic development. This concept design will provide a framework to remake Pennsylvania Avenue SE, a "Signature" Boulevard, that offers spectacular views, and will provide its community with pedestrian-oriented nodes that offer diverse and high quality retail services. Anchored by three significant activity nodes – at L'Enfant Square, Branch Avenue, and Alabama Avenue-which alternate with residential areas, the Corridor's street edge will be unified by the sidewalk material, large tree cover, landscaping and street lights. This well articulated street edge will emphasize views toward the U.S. Capitol. Pocket parks will be easily accessible, with enhanced crosswalks, higher illumination levels, and public art. While new sidewalks, bicycle paths, lighting, enhanced crosswalks, and signage make the City's Parks and Trails along the Corridor easily accessible. The Corridor will thus reinforce the Vision Statement and become an important amenity and focal area for the neighborhoods, and the District at large.

In the past, numerous studies and planning have been performed on Pennsylvania Avenue, SE and the surrounding community. This concept design takes into account these efforts and the efforts of the local community in developing the concepts being presented. The following studies and reports have been used as a basis for this concept Design:

- Pennsylvania Avenue Task Force Vision Plan
- Pennsylvania Avenue, SE Transportation Study
- Middle Anacostia River Crossing Transportation Study
- Bolan Smart Market Study for L'Enfant Square
- DC Bicycle Master Plan
- Pennsylvania Avenue, SE - Great Streets Framework Plan

In addition to these studies and plans, as part of the development of this concept design, numerous community meetings and charrettes were held:

- Multiple Pennsylvania Avenue Task Force meetings
- Kick-Off Public Meeting – June 30, 2006



- Design Charrette – July 26 thru 29, 2006
- DDOT/OP Community Meeting – September 25, 2006
- Hillcrest Civic Association Meeting – October 7, 2006
- OP Steering Committee Meeting – October 23, 2006
- DDOT/OP Community Meeting – November 9, 2006

The effort of this project was to develop a comprehensive plan based on community input and sound engineering study that would satisfy the principles of the District's Great Streets Initiative, local stakeholders and the community at large. The four day design charrette held in late July, 2006 provided a wealth of input from the community and other stakeholders on their vision for the corridor. Out of that charrette, numerous viable and non-viable alternatives were developed. These alternatives were initially evaluated and condensed down to three viable options for the corridor and three for the Pennsylvania Avenue/Minnesota Avenue (L'Enfant Square) intersection. The alternatives for the corridor are as follows:

- Four Lane with Landscaped Median
- Four Lane with On-Street Bicycle Lanes
- Five Lane – Reversible Lane

As a sub-option to Alternatives 1 and 3, the outer lane in the rush hour period would be designated for Transit/HOV/Right Turn vehicles only.

Another sub-option top Alternatives 1 and 3 provides for an off road (behind the curb) bicycle path.

The alternatives for the L'Enfant Square area are as follows:

- Square with Pennsylvania Avenue Bisecting (Modified Square)
- Circle within the Square with Pennsylvania Avenue Bisecting (Ellipse)
- Conventional Intersection of Pennsylvania Avenue and Minnesota Avenue (Conventional)

Detailed evaluation criteria was developed which was based on the principles of the Great Streets Framework Plan and on input derived from the design charrette. These alternatives were fully developed to a concept level, traffic analysis performed and urban design concepts developed prior to detailed evaluation of these criteria. The evaluation led to the selection of the four lane median alternative with the off street bicycle path for the corridor and the square with Pennsylvania Avenue bisecting for the L'Enfant Square intersection. The square was modified to reduce the impact to residential properties along Minnesota Avenue and 25th Street. In addition to these typical corridor configurations, at the retail nodes of L'Enfant, Penn-Branch and Alabama Avenue, additional modifications are proposed to provide on-street parking and additional amenity zones for outdoor café or market space. These preferred

alternatives and the other studied alternatives, as well as the evaluations and analyses are discussed more thoroughly in this report.

Table of Contents

Executive Summary 1

Great Streets Program – Principles and Program Goals..... 5

Program Goals..... 5

Funding and Budget 5

Guiding Principles..... 5

Existing Conditions..... 7

Existing Roadway Network..... 7

Traffic Operations (include counts, accident data, LOS, etc in the appendix) 7

Pedestrian and Bicycle Network..... 7

Safety Deficiencies 7

Parks and Green Space 9

Public Transportation 10

Streetscaping Elements..... 15

Retail Environment..... 16

Environmental Features 16

Public Participation 16

Design Alternatives Developed as a Result of Charrette..... 17

Alternatives Evaluation 17

Final Preferred Alternative..... 19

Traffic Operations..... 20

Pedestrian and Bicycle Network..... 20

Safety 22

Public Transportation.....22

Overall Streetscape.....27

Urban design and Open Spaces.....28

Streetscape at retail nodes.....29

Low-Impact Design Principles31

Urban Design Plan.....32

Plan Sheets.....33

Appendix..... 47

Great Streets Program – Principles and Program Goals¹

Great Streets are vital to great cities. A Great Street promotes both community and commerce. It is an inviting place where people want to visit, shop, walk, and enjoy the surrounding street environment. A Great Street supports and strengthens existing local businesses while attracting improved and expanded retail services. A Great Street is unique and memorable – it tells a story about its adjacent communities. A Great Street is safe and comfortable to walk along and provides many different ways of movement and accessibility - by foot, bike, bus, streetcar, subway or car.

Program Goals

- Improve the quality of life in neighborhoods along the corridors, including public safety, physical appearance, and personal opportunity;
- Support local demand for goods and services through economic development;
- Expand mobility choices and improve safety, and efficiency of all modes of travel; and
- Attract private investment through the demonstration of a public commitment to Great Streets communities.

Funding and Budget

DDOT, (District Department of Transportation) has secured over \$100 million to invest in the first phase of Great Streets improvements over the next 4 years. The DDOT "Great Streets Framework Plan" establishes a strategy for public investments across all six corridors. Great Street funds are coming from a new source – the revenue from the city's bus shelter contract. Funding the program from new local sources provides a guaranteed funding stream, does not compete with or deplete any other program, and provides for more flexible uses than federal transportation funding typically allows. In addition to DDOT resources, the Office of the Deputy Mayor for Planning and Economic Development has appropriated more than \$16 million in FY 2006 to support local business development, land use planning, and development assistance on the corridors.

Guiding Principles

1. ENERGIZE

Strengthen businesses and other local institutions and services

Challenge:

¹ Source: District Department of Transportation Great Streets Framework Plan

Change the public and market perceptions of the corridors through streetscape and transportation improvements, and reposition them as one of the best places to live and work, consequently expanding the city's tax base.

Actions:

- Invest in areas where mixed-use and mixed income developments could flourish, especially around transit nodes and major crossings
- Create an attractive public environment along the existing retail areas, open spaces and institutions

2. REFRESH

Integrate and conserve natural resources, and create valuable open spaces

Challenge:

Transform roadways and intersections into environmentally friendly and usable community open spaces.

Actions:

- Employ low impact development (LID) techniques to improve the quality and reduce the quantity of storm water run-off into our rivers and streams
- Develop defined and shaded rights of way, with street trees and other plantings, without inhibiting visibility of businesses • Install adequate trash receptacles, especially in neighborhood commercial areas
- Reduce the Urban " Heat Island Effect", with "greened" streetways
- Support the establishment of programs for schools and the general public aimed at promoting an understanding of clean, green, safe streets

3. MOVE

Create a sustainable transportation network, with many travel options

Challenge:

Change the existing "corridors" function from major vehicular arterials into streets that sustain healthy pedestrian and transit based activities, and consequently support the city's air quality and transportation agendas.

Actions:

- Balance the right-of-way, (ROW) allocation such that people on foot, bicycle, transit and automobiles can safely coexist
- Prioritize pedestrians and their needs and aggressively promote a shift to walking, cycling, and use of public transit
- Minimize curb cuts and vehicle oriented intersections, and promote continuous access for walkers and cyclists
- Deploy and enhance transit systems in order to attract new developments
- Install street lights to enhance pedestrian movements while providing required roadway illumination
- Transform dangerous intersections into pedestrian-friendly crossings

4. DISTINGUISH**Create streets with vibrant places that reflect local character****Challenge:**

Transform each corridor into a place that is memorable, compelling, and desirable to visit again and again.

Actions:

- Enhance view sheds and ease of access to landmarks, parks, and waterfronts
- Reclaim sidewalks at vital street nodes and segments to create space for activities other than walking
- Reconfigure important intersections to create nodes of retail clusters, corner parks and/or transit hubs
- Design streetscape elements and public art programs unique to each corridor's cultural and historic context

5. CARE**Increase community ownership and stewardship****Challenge:**

Reposition the street as a vital neighborhood asset, and thus increase the community's stake in its design, upkeep, and stewardship.

Actions:

- Involve communities in the design development process
- Establish a Construction Coordination Committee represented by residents and local businesses
- Help establish local group (s) for regular maintenance, promotion of businesses, and coordination of events



Existing Conditions

The existing conditions of Pennsylvania Avenue, SE were analyzed thoroughly as part of the initial study of the corridor. Field reconnaissance, aerial mapping, topographic survey, traffic counts and information collected from stakeholders and the community. Additionally, DDOT has provided information, which includes previously completed studies, which include the Pennsylvania Avenue, SE Transportation Study. This data was consolidated and analyzed and the following section represents the results of this effort.

Existing Roadway Network

The project area encompasses Pennsylvania Avenue, SE from the foot of the Sousa Bridge to Southern Avenue, SE. At the west end of the project, modifications to the Anacostia Freeway (I-295) interchange are being developed as a separate effort by the Anacostia Waterfront Initiative. This design did not consider these modifications, and only attempted to match the existing roadway network at the interface of these two projects. Several major roadways intersect the corridor and have been studied as part of this effort. These roadways include Minnesota Avenue, Branch Avenue, Alabama Avenue and Southern Avenue.

Pennsylvania Avenue, SE within the project area is approximately 1.8 miles long and is classified as a principal arterial. The roadway is used as a major commuter route into Downtown Washington, DC and as an access route for local residents to access neighborhoods on the north and south side of the corridor. Additionally there are three commercial nodes along the corridor at L'Enfant Square, Branch Avenue and Alabama Avenue.

The posted speed on Pennsylvania Avenue, SE is 30 mph. Along the corridor, the roadway ranges from a four-lane section between Southern Avenue and Carpenter Street. Between Carpenter Street and 27th Street, the roadway section has five lanes, the center lane operating as a reversible lane during peak periods. Between 27th Street and the Anacostia Freeway, the roadway widens to a width of eight lanes with turning lanes at the Fairlawn and Minnesota Avenue intersections.

Traffic Operations (include counts, accident data, LOS, etc in the appendix)

Extensive data on existing traffic operations were collected as part of this study. Data includes traffic counts, crash summary reports, and level-of-service (LOS) for signalized intersections. This supporting data can be found in Appendix A.

Traffic operations along Pennsylvania Avenue, SE can be characterized by congested conditions during peak periods and free flow conditions during off-peak periods. In the morning peak period, heavy flows are directed to the east towards Downtown Washington. In the evening, heavy flows are directed to the west towards Prince George's County, MD. Congested conditions are more severe during the morning peak period than in the evening

peak period. During off-peak periods, vehicles can generally travel under free flow conditions. Vehicle speeds frequently exceed the posted speed limit at these times.

During congested conditions along Pennsylvania Avenue, SE vehicles will commonly experience low speeds, frequent queuing, and spillbacks at numerous intersections. Travel speeds along the corridor were observed to be as low as 5 miles per hour (mph) in the morning peak period for vehicles traveling west into Downtown Washington, DC. During the evening peak period, speeds were observed to be as low as 17 mph for vehicles traveling east towards Prince George's County, MD. It is not uncommon for congested conditions to extend from L'Enfant Square in the west to Texas Avenue in the east for vehicles traveling west in the morning peak period. During the evening peak period, congested conditions were observed to extend from the Sousa Bridge in the west to Branch Avenue in the east.

Pedestrian and Bicycle Network

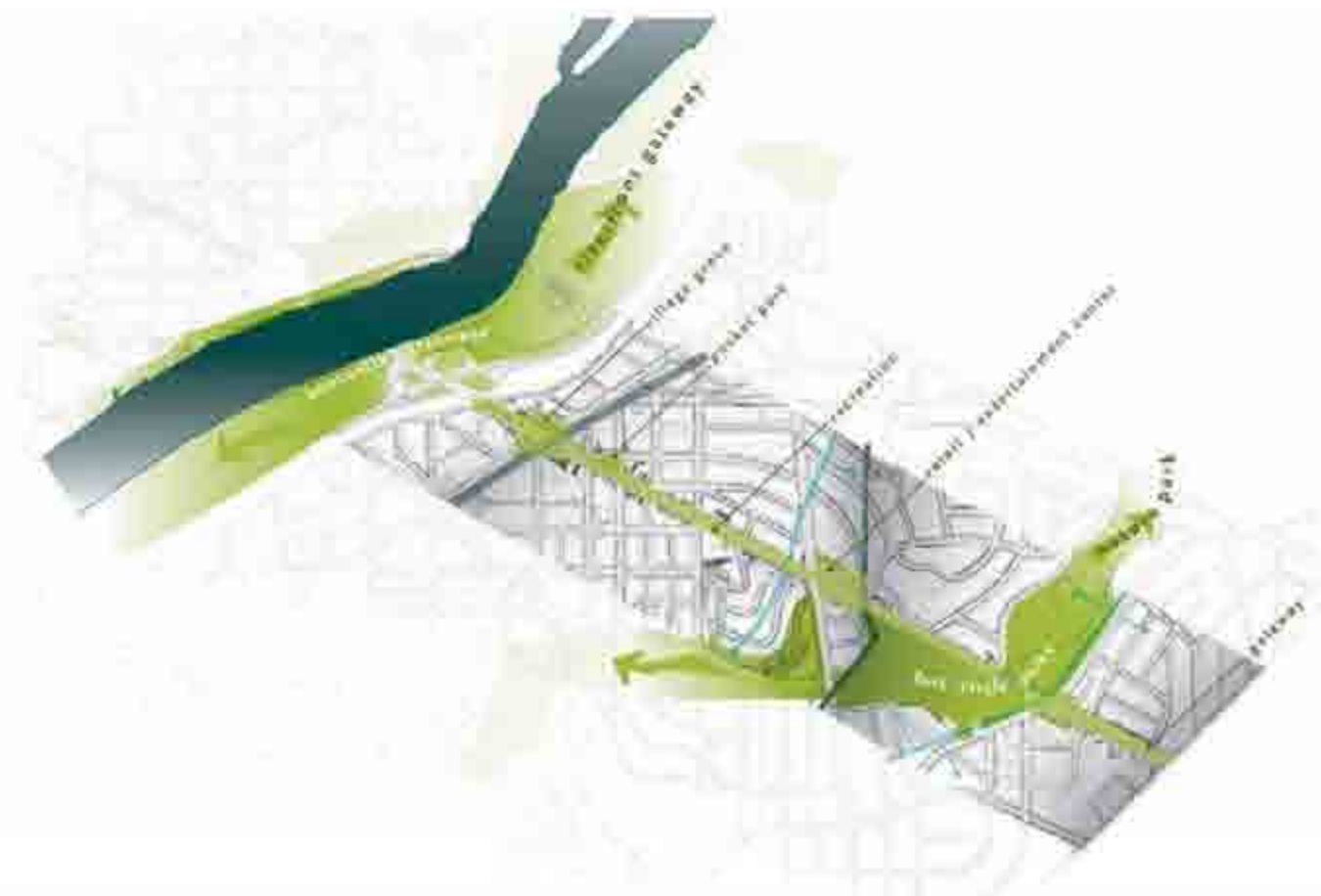
The pedestrian and bicycle network along Pennsylvania Avenue, SE is currently uneven and discontinuous. The sidewalk network consists primarily of 6 foot wide P.C.C. sidewalks along both sides of the roadway. The sidewalk is discontinuous along the south side between Branch Avenue and to a point approximately 280' east of 31st Street. This section of the corridor has a retaining wall supporting a cut slope that is located six feet from the face of curb. Also, along the south side, the sidewalk is discontinuous from 33rd Street to 38th Street abutting the Fort Circle Park. In addition to these deficiencies, many of the pedestrian cross walks and handicap ramps are unsafe or non-existent and do not meet the requirements of the Americans with Disabilities Act. Access to the walkways on the Sousa Bridge requires pedestrians to cross on- and off-ramps to the Anacostia Freeway at unsafe locations.

According to the District of Columbia Bicycle Master Plan, published April, 2005, Pennsylvania Avenue, SE is proposed to have a multi-use trail from the Sousa Bridge/Anacostia Park to Southern Avenue. Currently there are no provisions for bicyclists along the corridor except for the unsafe connections to the multi-use paths on the bridge and connections to the park. The closest existing bicycle paths are along the parallel Massachusetts Avenue and along Alabama Avenue, north of Pennsylvania Avenue, which have on-street bicycle lanes. Also, as part of the bicycle master plan, Branch Avenue is proposed to have on-street bicycle lanes both north and south of Pennsylvania Avenue.

Safety Deficiencies

Crash data collected between 2000 and 2005 indicate that side swipes and rear-ends are the prevalent accident types along Pennsylvania Avenue, SE. Data further indicates that almost a majority of the reported side swipes and rear-ends occurred at L'Enfant Square where Pennsylvania Avenue and Minnesota Avenue intersect. Accident summary reports obtained from DDOT's databases can be found in the Pennsylvania Avenue, SE Transportation Study Report prepared in 2003.

Existing intersection geometries and signal phasing are factors contributing to crash occurrences along the corridor. Congested conditions during peak periods and excessively high vehicle speeds during off-peak periods are also contributing factors. The absence of left turn bays and protected left turn phases at several intersections along Pennsylvania Avenue, SE is likely to be a factor contributing to the occurrence of rear-end crashes. It is not uncommon for vehicles to unexpectedly stop in the left lane (the lane where vehicles are accustomed to traveling at higher speeds) and wait for a considerable time to make left turns. The existing 5-lane cross section along a majority of Pennsylvania Avenue, SE is likely to be a factor contributing to the occurrence of sideswipe crashes. A five lane cross sections promotes excessively high speeds and high speeds are known to be a probable cause for sideswipes.



Pennsylvania Avenue SE Open Space Character Zones

Parks and Green Space

Pennsylvania Avenue boasts a network of parks and open spaces that represents a tremendous unrealized potential. Framed by two natural gateways—a double row of mature oaks at Southern Avenue and the regional-scale Anacostia Park at its northwest extent—Pennsylvania Avenue SE supports a great diversity of green spaces which can provide a range of activities.

- The historic Fort Circle Parks system, originally part of the city's ring of Civil War defenses, crosses the corridor between Southern Avenue and 33rd Street SE. However, discontinuous sidewalk access alongside the parkland prevents easy access by residents to the park's network of trails and historic Fort structures.
- Anacostia Park, a regional-scale attraction offering active recreational and riverfront use, is currently difficult to reach by residents of the corridor and drivers alike.
- Twining Square, a small pocket park occurring at the triangular intersection of Pennsylvania Avenue, O Street, and 28th Street SE, is charming but under-maintained, and residents note that its lack of supervision creates an environment for undesirable activities.
- Situated at the intersection of Pennsylvania and Minnesota Avenues SE, L'Enfant Square presents the greatest potential as a "village green." Currently the square is fragmented by turn lanes and overburdened bus stops. Green space occurs piecemeal between busy lanes of traffic, rendering pedestrian circulation and use both difficult and dangerous.



d.
District Department of Transportation



HNTB

**HARGREAVES
ASSOCIATES**

Public Transportation

Pennsylvania Avenue, SE is served by several Metrobus routes. The maps below illustrate the existing bus routes serving the corridor. A fold-out a map depicting bus stop catchment areas and potential service demand is included in the Appendix.

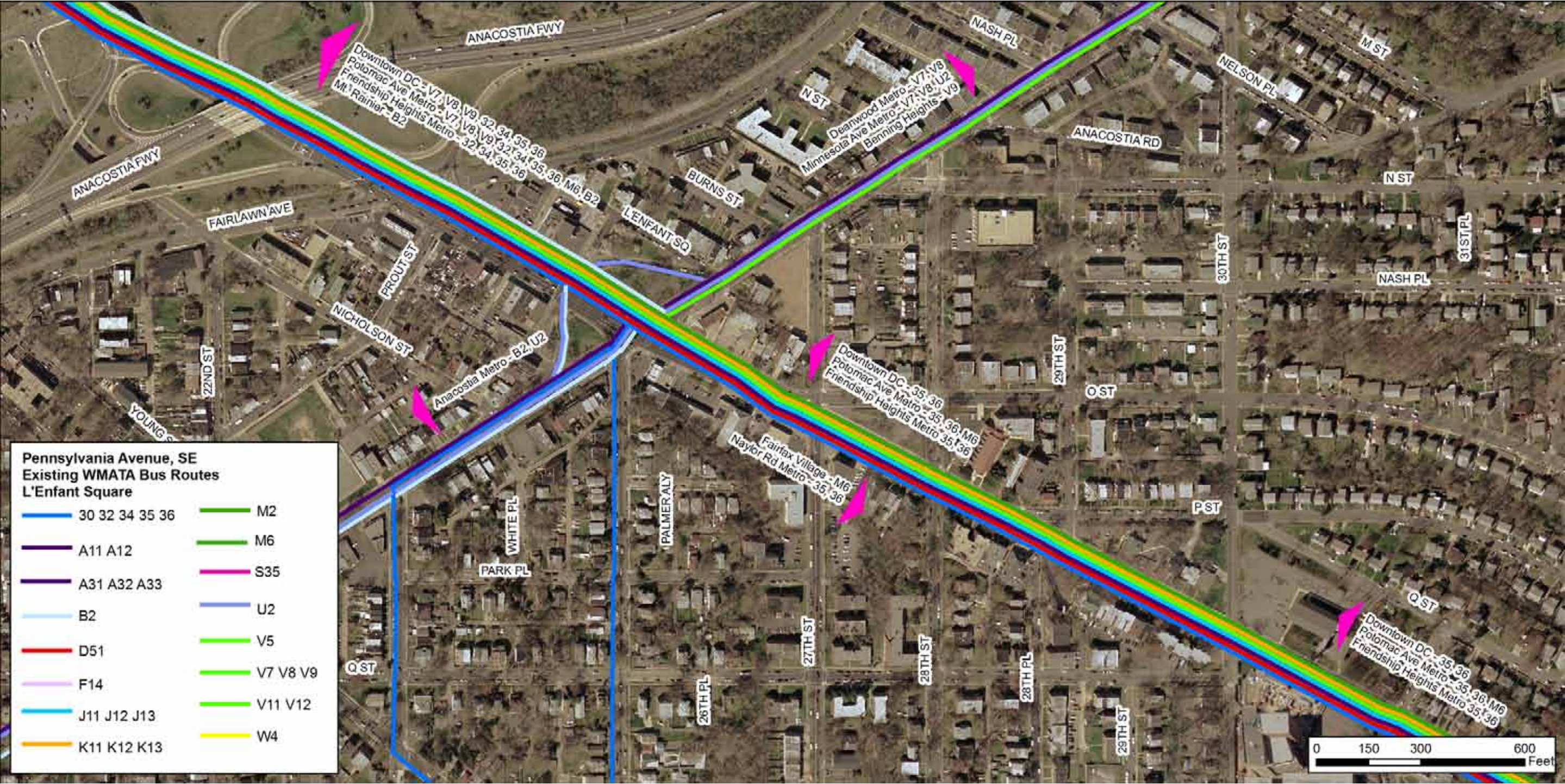
The daily duration of transit service along the corridor is generally acceptable, with buses operating late into the night. The frequency of services, however, drops precipitously east of Minnesota Avenue from 30 buses an hour in the peak direction to eight buses an hour in the peak direction. Midday service drops from 15 buses an hour to four buses an hour. Frequencies drop even further east of Branch Avenue. East of Alabama Avenue bus service mainly takes passengers to and from Metro stations in Maryland. The Appendix includes a summary of bus frequency between key nodes along the corridor.

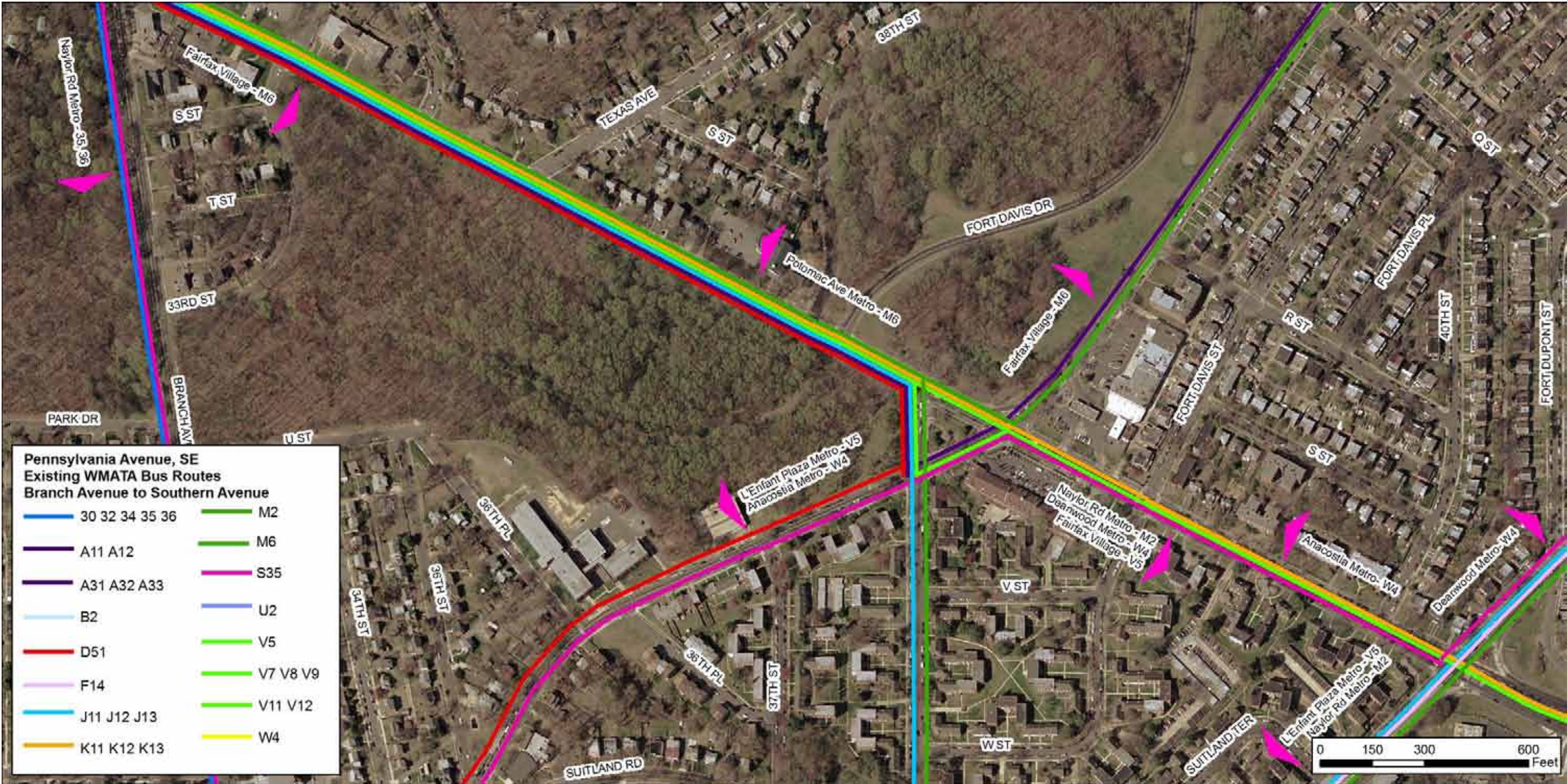
The bus stop catchment map indicates that most neighborhoods adjacent to Pennsylvania Avenue, SE have adequate access to bus service along the corridor. The Westover neighborhood, however has limited access to transit. The street geometry and topography in this area make connectivity to Pennsylvania Avenue difficult and consequently access to bus stops is difficult.

Although the existing route map shown previously would seem to indicate a high amount of transit service along Pennsylvania Avenue, SE, there are some deficiencies. Principally, there is a lack of continuous routes through the corridor. This leads to high transfer activity that may not be needed if more continuous routes are provided. More transfers leads to undue delay for transit users. Lack of continuous transit service through corridor also diminishes the attractiveness of transit as a commuting mode along the corridor. The presence of more continuous routes along Pennsylvania Avenue, SE may attract more commuters who would otherwise drive along Pennsylvania Avenue to reach Downtown Washington.

The amount of transfers at L'Enfant Square illustrates the need for more continuous transit service. Currently, the U2 route provides north-south service through L'Enfant Square. This service however operates at a low frequency. Transit users can effectively make the same trips as the U2 by transferring to and from the B2 route and the V7, V8, V9 route. Service is more frequent on these routes than the U2 so transit riders are more attracted to transferring than using the U2. It was noted in field observations frequent transfers between the B2 route and V7, V8, V9 route. Bus stops for these routes are located on opposite sides of Pennsylvania Avenue. Frequent crossings of Pennsylvania Avenue - many times outside of a protected pedestrian walking phase - were observed. Increased frequency on the continuous north-south route - U2 - would lessen the amount of potentially hazardous pedestrian crossings of Pennsylvania Avenue and would likely decrease transit user travel times through L'Enfant Square.

Figure 1: Existing Bus Routes





High commuting vehicular volumes into and out of Downtown Washington also illustrate the need for continuous transit service along the Pennsylvania Avenue corridor. Currently, there is no continuous bus route from Prince George's County along Pennsylvania Avenue, SE into Downtown Washington. The existing M6 route provides the longest continuous coverage of Pennsylvania Avenue with service spanning from the Potomac Avenue Metro to Alabama Avenue at Fairfax Village. The potential exists to intercept commuting traffic and preserve Pennsylvania Avenue for local traffic if continuous service along the entire length of Pennsylvania Avenue, SE from Southern Avenue to Downtown is implemented.

Existing plans for rapid bus transit along Pennsylvania Avenue can help address the current deficiencies in continuous bus service. Current plans recommend service between the Naylor Road Metro and Archives – Navy Memorial Metro via Pennsylvania Avenue. The service would incorporate some high quality transit features such as:

- shelters in both directions at L'Enfant Square and at westbound stops along Pennsylvania Avenue
- special vehicle branding
- and ITS equipment once ridership is established.

The proposed routing as it stands, however, may not prove to be attractive enough to intercept automobile commuters traveling along Pennsylvania Avenue from Maryland. The proposed routing does not include stops along Pennsylvania Avenue east of Southern Avenue into Maryland. Alternate routings for proposed rapid bus in this corridor and other revisions to the current rapid bus plan may be warranted.



Existing Conditions: Urban Character and Streetscape

Southeast of the Anacostia River, the rolling hills that originally served to shelter the Capitol City now lend Pennsylvania Avenue SE the character of a folding landscape marked by ridges and valleys. Although nearly on axis with the Capitol building across the river, the street achieves through its topography a feeling of quietness and seclusion enjoyed by its residents. Meanwhile, the highest points along the corridor offer moments of panoramic view to the Capitol Dome and the surrounding landscape.

Urban Character

Pennsylvania Avenue SE is marked by a very clear differentiation in land use between residential and commercial areas. Each of its major Avenue crossings—Minnesota, Branch and Fairfax—supports a block or series of blocks of commercial development. Residential areas in between the commercial nodes are leafy and quiet, with houses and apartment buildings set back and often raised several feet above the level of the roadway. The corridor's three commercial zones function as nodes of concentrated activity, each with a distinct character and pattern of use. This combination of distinctive land use and folding topography yield distinct character zones along the length of the corridor.

Streetscape

Serving primarily as a commuter route, Pennsylvania Avenue SE suffers from an inhospitable environment for pedestrians, bicyclists and local vehicular traffic. Residents have noted the difficulty in crossing the street due to poorly marked intersections and crosswalk signal times that are too short to cross the roadway. In residential areas, narrow, uneven sidewalks flank a tree zone whose oaks and sycamores have overgrown the curb and upset the sidewalk surface. Retaining walls to front yards are in many cases in disrepair, leaning towards the pedestrian zone and further decreasing its useable width. Meanwhile, pedestrian space in commercial areas feels unprotected from roadway traffic. The Avenue makes no provisions for bicycles.

A mature tree canopy lends character to residential areas in particular, but utility poles and overhead lines introduce visual clutter and compromise the health of many of Pennsylvania Avenue's oldest trees. Pruning around wires leaves trees misshapen and prone to disease, and many trees along the avenue visibly evidence blight. Notably, this segment of Pennsylvania Avenue is the only portion of Pennsylvania Avenue in the District with overhead utility lines.



Pennsylvania Avenue SE Character Zones

Retail Environment

Pennsylvania Avenue SE has three retail focus areas, L'Enfant Square, Penn Branch Shopping Area, and the Alabama Avenue Retail Node.

The L'Enfant Square retail area starts at Fairlawn Avenue and ends at 28th Street. This area has predominantly commercial zoning with some residential zoning, along with a public and institutional presence. It has large building setbacks and wide sidewalks at points, and has an automobile oriented strip development that caters to convenience retail, mostly oriented towards commuters. Gas stations are prominent features at the entry points, and there are underutilized vacant properties. This retail area has no continuous building line and a diminished pedestrian experience, with significant but disconnected open space areas in the L'Enfant Square intersection.

The Penn Branch Shopping Area has significant commercial land uses from Branch Avenue to O Street. The remaining areas are comprised of residential, institutional, open space and government properties. The Penn Branch shopping center is a commercial node that has a defining entry feature and large surface parking lots in front of and behind the commercial building. There is an abandoned commercial building on a large lot at the intersection of Pennsylvania Avenue and O St. The commercial land use on the southwest portion is a gas station at a prominent corner location, with parking in front and large building setbacks. There is significant open space in this area but the sidewalk network, on the south side in particular is not complete.

The Alabama Avenue Retail Node is from Alabama Avenue to Fort Davis Street. It has commercial zoning at the intersection of Pennsylvania Avenue and Alabama Avenue where the Fairfax Village shopping center is located, and the rest of the area remains residential. It has an automobile oriented strip development at the southwest side with surface parking lots in front of the commercial building, where there is a post office located among numerous retail stores. There is also a gas station in the northwest portion with parking spaces and a retail building.

Environmental Issues - NEPA / Section 4(f) / Section 106 Review

To be completed following final consultation with NPS & DCSHPO

Public Participation

All effort has been made to keep the public involved in order to help the DDOT and the Stake Holders with the determination of the final preferred concept alternative. There were a total of nine public meetings, which were advertised by several local media. Eight of the meetings were for the general public, and one special meeting was held with the Hillcrest Civic Association. Out of these meetings, including the Design Charrette held July 26 – 29, 2006, several alternatives for the corridor and the L'Enfant Square area were developed. Other communications with the public came in the form of e-mail for those who opted in, a website at www.ddot.dc.gov, and a bi-monthly newsletter. Of the goals outlined by the draft statement, the attendance met expectations of fifty people per meeting and the process and content evaluations by the public were all at least satisfactory, which exceeded the goal of at least 50%. The public input was essential in this phase in order to finalize the configuration.



Design Alternatives Developed as a Result of Charrette

Discussion of the 3 primary alternatives for corridor

Discussion of the 3 L'Enfant/Twining Square alternatives

Alternatives Evaluation

A preferred alternative was selected by evaluating the performance of each alternative in advancing the goals and objectives of the Great Streets Program. Evaluation criteria were established for each of the five guiding principles of the Great Streets Program:

- Energize
- Refresh
- Move
- Distinguish
- Care

In addition, a sixth principle – “build” – was conceived. Criteria under this principle would evaluate the feasibility and constructability of an alternative. The alternatives were scored on how well they advanced each criterion. Ultimately, an overall “Great Streets Score” was produced. The higher the score for an alternative meant the greater the ability of the alternative to advance the goals and objectives of the Great Streets Program.

A summary of the results of the evaluation process is illustrated on the [following page](#). Listed next to each guiding principle are the evaluation criteria used for scoring that principle. The overall score for each guiding principle is illustrated using colored circles. The “Overall Great Streets Ranking” illustrates graphically how the alternative performs with respect to all of the guiding principles. A more detailed numerical comparison on a weighted scale of one to five is shown in the Appendix.

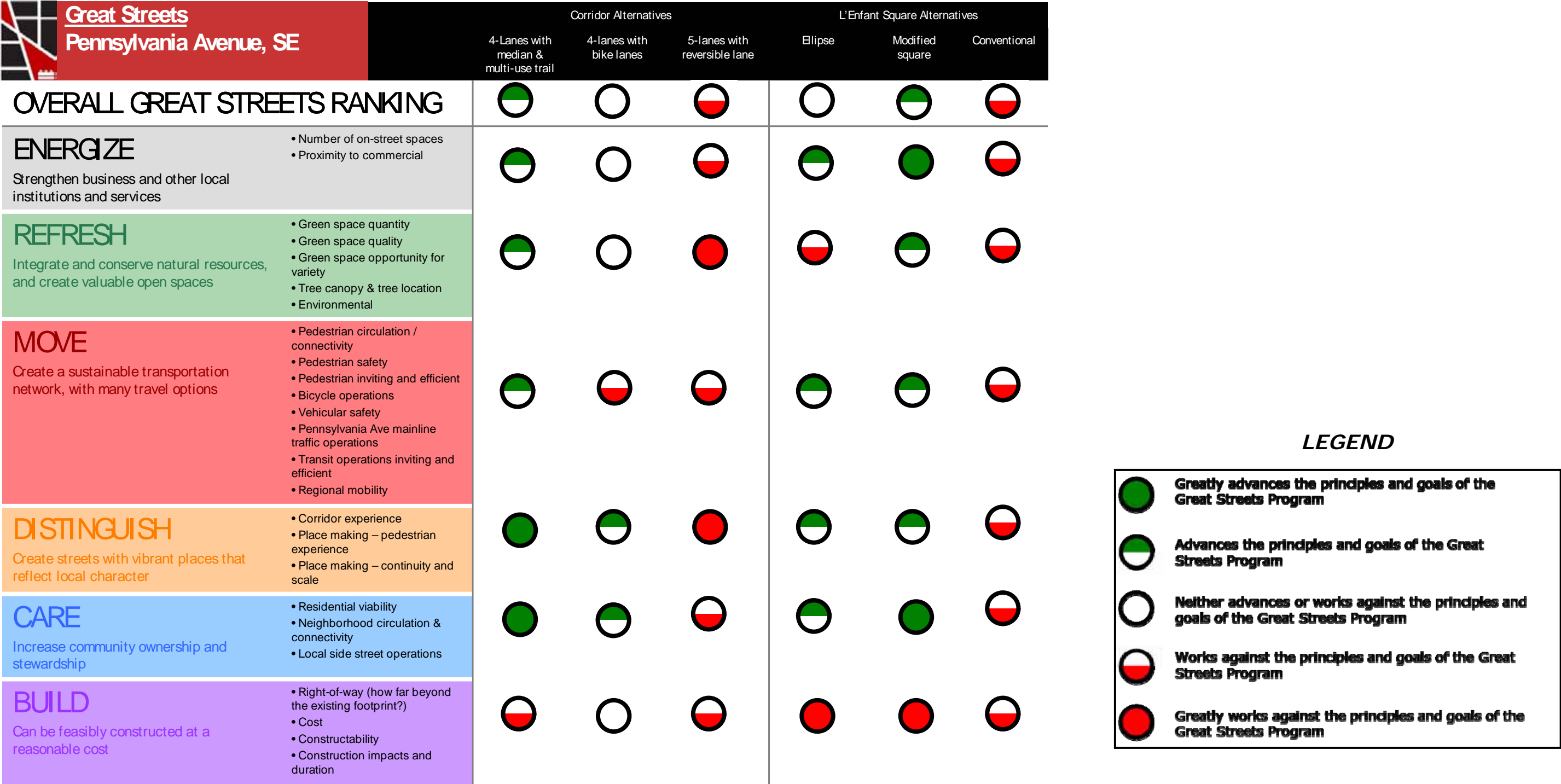
Among the corridor alternatives, the evaluation indicates that the four-lanes with median alternative does the best in supporting the goals and objectives of the Great Streets Program. The four-lanes with median alternative scored high in terms of distinguishing the corridor from other places in the District and in terms of fostering community ownership and stewardship.

Among the L'Enfant Square alternatives, the modified square alternative scored the highest. This alternative most notably scored high in its potential to energize the local community and strengthen local business. This alternative also scored high in terms of fostering community ownership.

The scoring process indicated that the four-lanes with median and modified square alternatives should be advanced as the preferred alternative. The following section describes

in further detail the improvements and recommendations associated with the preferred alternative for Pennsylvania Avenue, SE.

Figure 2: Alternatives Evaluation



Among the corridor alternatives, the evaluation indicates that the four-lanes with median alternative does the best in supporting the goals and objectives of the Great Streets Program. The four-lanes with median alternative scored high in terms of distinguishing the corridor from other places in the District and in terms of fostering community ownership and stewardship.

Among the L'Enfant Square alternatives, the modified square alternative scored the highest. This alternative most notably scored high in its potential to energize the local community and strengthen local business. This alternative also scored high in terms of fostering community ownership.

The scoring process indicated that the four-lanes with median and modified square alternatives should be advanced as the preferred alternative. The following section describes in further detail the improvements and recommendations associated with the preferred alternative for Pennsylvania Avenue, SE.

Final Preferred Alternative

The preferred alternates for the Revitalization of Pennsylvania Avenue, SE, are the Four Lane with a Landscaped Median option (27th Street to Southern Avenue) and the Modified Square with Pennsylvania bisecting (intersection of Minnesota Avenue and Pennsylvania Avenue). Both of these alternates identify with the goals of the Great Street Initiative.

The first alternate mentioned above stretches the length of the project along Pennsylvania Avenue from 27th Street to Southern Avenue. This alternate allows for a safer access to commercial and residential outlets. This is facilitated by better lighting, continuous sidewalks, bicycle lanes, and on street parking. The design promotes shopping by providing an environment people can come and benefit from what the surroundings have to offer.

The Modified Square option at the intersection of Minnesota Avenue and Pennsylvania Avenue stresses the importance of safety and awareness and allows vehicles to navigate through the intersection. This design would allow Pennsylvania Avenue to bisect through the center of the square as well as a way that encompasses the perimeter of the design. This perimeter route acts to calm the traffic, similar to how a traffic circle works by allowing vehicles to enter and exit the square at locations identified by the intersecting streets. It would also reduce vehicular speeds by providing short straight distances between tight radius turns, at the presumed four corners of the square. Pennsylvania Avenue also bisects through the center of square design. The bisecting route is designed with the tourist in mind and creates a place of distinction and reduces pedestrian and vehicular interaction. Another benefit of this design is that traffic signal configuration is simpler and the left-turning conflict is removed.

Traffic Operations

Traffic operations under the preferred alternative would be impacted by several factors. The preferred corridor alternative would reduce the number of lanes between 27th Street and Branch from two lanes in each direction plus with one reversible lane to four lanes with a landscaped median. L'Enfant Square would operate as a signalized traffic circle with Pennsylvania Avenue bisecting. Left turn bays would be added at most intersections along the corridor. Signals timings and phasing would also be reconfigured throughout the corridor.

Traffic operations under several different scenarios were analyzed in order to evaluate performance of the preferred alternative relative to existing traffic operations. Several scenarios were developed:

- Existing (2006) traffic volumes on the existing network
- Existing (2006) traffic volumes on the preferred alternative
- Future (2025) traffic volumes on the existing network
- Future (2025) traffic volumes on the preferred alternative.

Existing traffic volumes reflect traffic volumes from numerous traffic counts conducted between 2003 and 2006. Forecasts of future traffic volumes were based on forecasts developed in the previous *Pennsylvania Avenue, SE Transportation Study*. The existing network represents a "no build" condition where no changes in geometry or signal operation are made. The scenarios allow for comparisons of traffic conditions between build and no build conditions and between existing and future traffic. *Highway Capacity Manual* (HCM) level of service (LOS) reports for all signalized intersections along the corridor can be found in the Appendix.

Overall, traffic operations deteriorate modestly when comparing the preferred alternative with the no build condition. Reductions in LOS occur at the intersections between L'Enfant Square and Branch Avenue. Generally, Pennsylvania Avenue, SE under the preferred alternative would operate at the same LOS as the existing (no-build) network from the Branch Avenue intersection to the Southern Avenue intersection.

For the more severe peak traffic period (mornings), LOS under the preferred alternative with 2006 traffic volumes would drop at three of the 14 intersections along Pennsylvania Avenue, SE. For the AM peak period with 2025 traffic volumes, LOS under the preferred alternative would drop at five of the 14 intersections and improve at two. During both the morning and evening peak periods with 2025 traffic volumes, L'Enfant Square under the preferred alternative would operate at the same LOS as L'Enfant Square under its current configuration.

While the traffic forecasts used in this analysis show increases in traffic volumes between 2006 and 2025, improvements to the regional highway network over the same time frame

may in fact keep traffic volumes along Pennsylvania Avenue relatively constant. If projects such as the 11th Street Bridges, South Capitol Street Bridge, and the Pennsylvania Avenue – I-295 Interchange are completed, then commuting traffic currently using Pennsylvania Avenue may be shifted to other routes. Nevertheless, the modest deterioration in traffic operations under the preferred alternative is acceptable when considering the overall benefits of a more walkable and pedestrian friendly environment that the preferred alternative provides. The traffic operations analysis as it stands, shows that the preferred alternative can work to accomplish several principles of the Great Street Program without dramatic deteriorations in traffic conditions.

Pedestrian and Bicycle Network

Under the preferred alternative, numerous improvements to the pedestrian and bicycle network are proposed. These improvements would provide a continuous and inviting pedestrian-bicycle network along the entire length of Pennsylvania Avenue, SE. The principal improvement advanced in the preferred alternative is a ten-foot wide multi-use trail parallel to Pennsylvania Avenue from Southern Avenue to Fairlawn Avenue. Other improvements include:

- A reconfigured L'Enfant Square with several pedestrian accommodations
- An exclusive pedestrian crossing signal phase at Twining Square (28th Street)
- A landscaped median along the entire corridor and other landscaping improvements
- New sidewalks along the entire corridor
- Special pavement and sidewalk treatments throughout the corridor

Many of these other improvements are discussed in greater detail later in the streetscaping/urban design section of this report.

The proposed ten-foot wide multi-use trail is consistent with the District's *Bicycle Master Plan*. The trail would extend eastward an existing multi-use trail that currently terminates at the eastern end of the Sousa Bridge.

Between 28th Street and Southern Avenue, the multi-use trail would parallel the eastbound travel lanes on Pennsylvania Avenue. The trail in this location would be buffered by a six-

foot to ten-foot amenity zone except between Carpenter Street and Fort Davis Drive. At this location, no buffer can be provided between the travel way and trail because of topography and limited right-of-way. At 28th Street the trail would cross Pennsylvania Avenue and parallel the westbound travel lanes. To facilitate crossings, a diagonal crosswalk is proposed at the Pennsylvania Avenue / 28th Street intersection. The crosswalk would connect the southeastern corner of the intersection with the northwestern corner. An exclusive pedestrian crossing phase would be included in the traffic signal at that intersection. Between 28th Street and Fairlawn Avenue, the trail would continue to parallel the westbound travel lanes buffered by an amenity zone most of the way. At Fairlawn Avenue, the trail would cross Pennsylvania Avenue again and then connect with an existing multi-use trail that crosses the Sousa Bridge.

Figure 3: Proposed Multi-use Trail

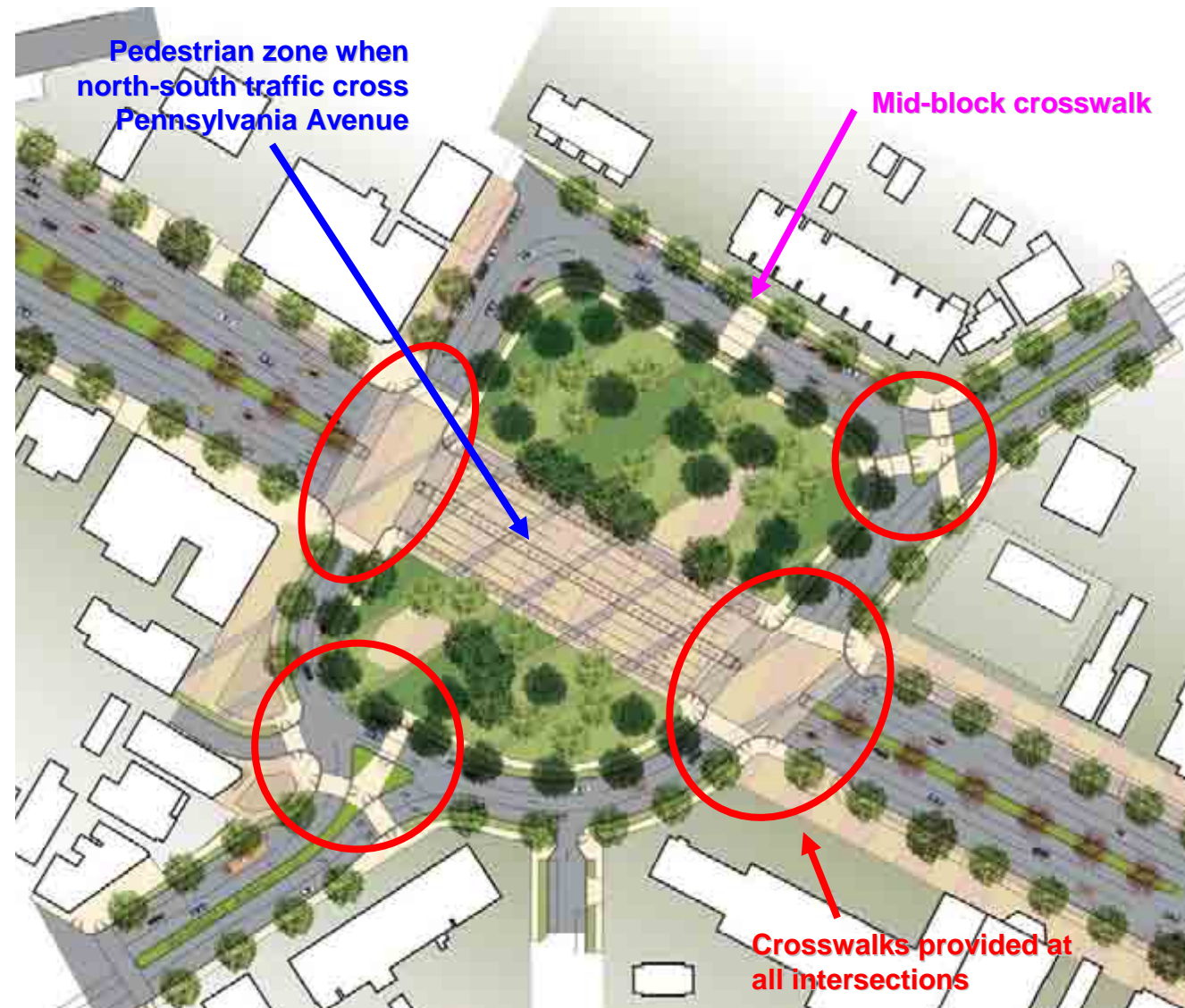


Figure 4: Diagonal Crosswalk by Twining Square



As part of a reconfigured L'Enfant Square, numerous enhancements to the pedestrian experience would be made. Crosswalks would be added at all intersections. Signal timings and phasing at the two L'Enfant Square intersections would be configured such that the section of Pennsylvania Avenue inside the square would be free of vehicles when cross street traffic travels around the square. During this time, pedestrians could freely cross Pennsylvania Avenue anywhere inside L'Enfant Square. This accommodation would greatly increase the pedestrian connectivity of the L'Enfant Square neighborhood.

Figure 5: Pedestrian Accommodations at L'Enfant Square

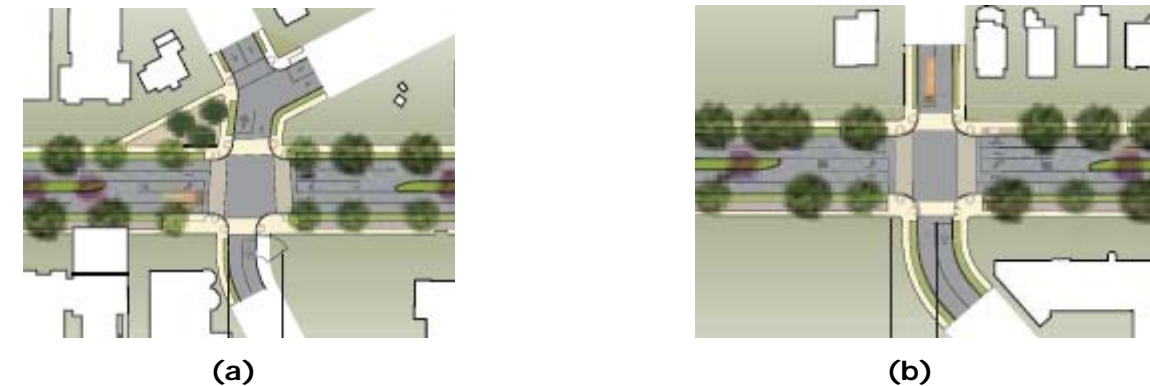


Safety

Numerous changes in intersection geometries and signal timings under the preferred alternative would make Pennsylvania Avenue, SE safer for both vehicular traffic and pedestrians. The reconfigured L'Enfant Square eliminates left turns. Signals at L'Enfant Square would be timed so that Pennsylvania Avenue inside L'Enfant Square is cleared of vehicles and open for pedestrians to freely cross while cross street traffic circles the square. The intersections at 29th Street and 31st Street would be reconfigured to simplify traffic

operations. Throughout the corridor left turn bays and protected left turn phasings would be provided.

Figure 6: Reconfigured Intersections at 29th St (a) and 31st St (b)



A matrix showing the potential benefits realized with improvements at each intersection or corridor segment is included in the appendix. The matrix uses a weighting scheme to identify those improvements that have the potential to correct for the highest-occurring collision types (i.e. angle collision versus rear-end collision).

Public Transportation

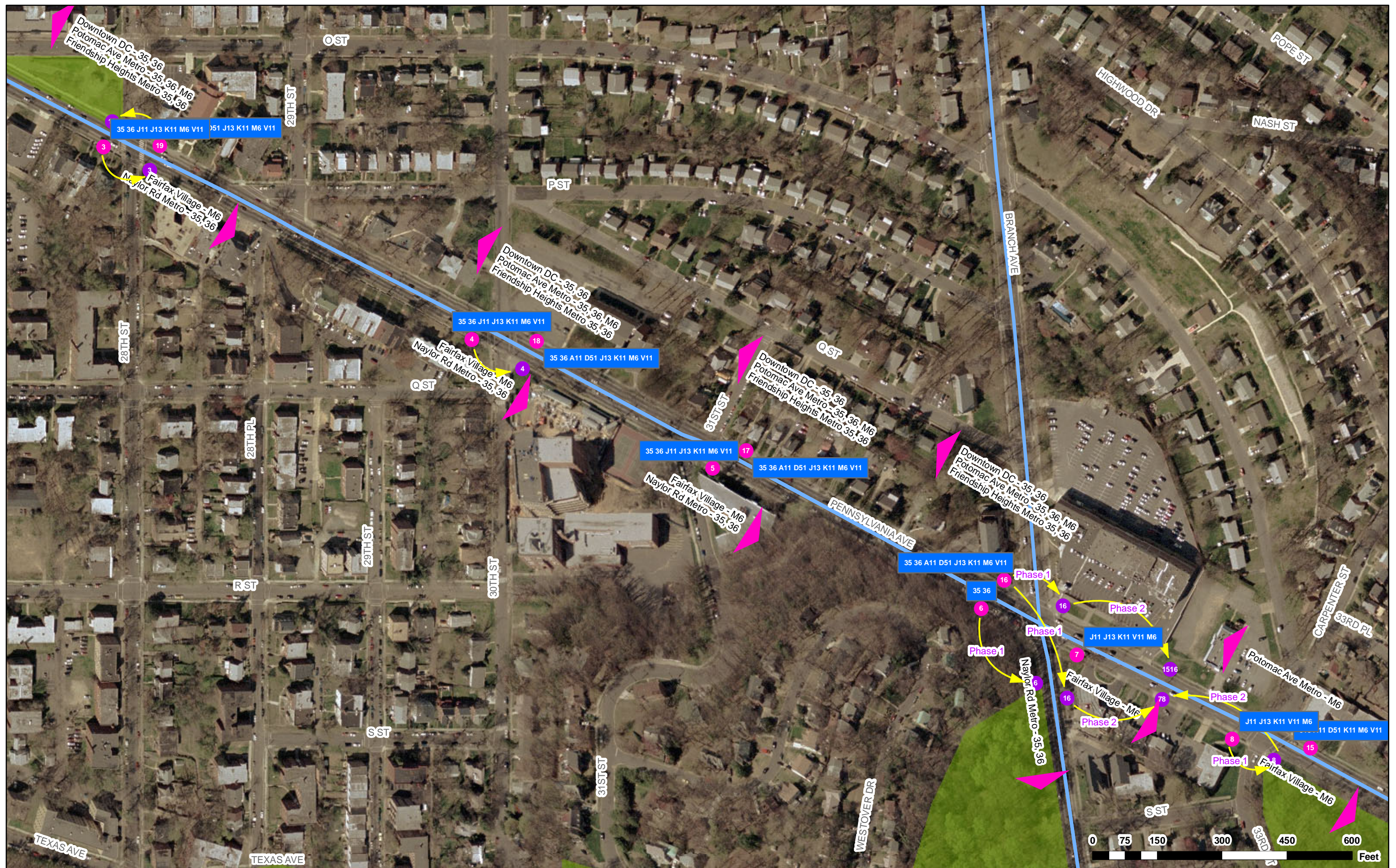
The preferred alternative includes several improvements to public transportation. Improvements include:

- relocation of bus stops at L'Enfant Square
- relocation of bus stops along Pennsylvania Avenue from 27th Street to Southern Avenue
- rerouting of the M6 at Fairfax Village.

The figure below illustrates the location of bus stops and bus routings through the reconfigured L'Enfant Square. Several alternatives for bus stop locations and bus routings were considered. Among others, options included allowing buses to make lefts onto Pennsylvania Avenue from L'Enfant Square and consolidating bus operations to two stops located on opposite sides of Pennsylvania Avenue inside L'Enfant Square. Ultimately, the locations chosen balance the need for safe and efficient bus operations through the square with pedestrian safety and convenience, especially for those pedestrians transferring between bus routes. Bus stops are generally located along the eastern edge of the square where road geometries provide enough space for buses to stop and for buses to exit and reenter the flow of traffic. Clustering most stops along the eastern edge also helps to minimize walking times and street crossings for those pedestrians transferring between routes.



For the remainder of Pennsylvania Avenue from 27th Street to Southern Avenue, bus stops were relocated so that, in most cases, bus stops were positioned at the far side of an intersection. Far side locations are generally safer for both pedestrians and vehicular traffic. Stops were also relocated to coincide with proposed retail nodes along the corridor. For a proposed retail node between Branch Avenue and 33rd Street, mid-block bus stops are proposed with mid-block crosswalks. Mid-block bus stops are also proposed at the Fairfax Village retail node between Alabama Avenue and Fort Davis Street.





To address issues of bus service continuity along Pennsylvania Avenue, a rerouting of the M6 line through Fairfax Village is proposed. The M6 currently does not provide service along Pennsylvania Avenue between Southern Avenue and Alabama Avenue. The M6 instead makes a loop formed by Southern Avenue in the east, Alabama Avenue and 38th Street in the west, Massachusetts Avenue to the north, and Suitland Avenue to the south. The proposed rerouting would extend service along Pennsylvania Avenue between Southern Avenue and Alabama Avenue. The M6 would essentially make a figure eight through the area. The rerouting is illustrated in the figure below.



The proposed rerouting would extend continuous bus service along Pennsylvania Avenue from the Potomac Avenue Metro to Southern Avenue. In addition the rerouting would provide better service to the Fairfax Village shopping center – a retail node that is to be targeted for high quality redevelopment under this plan. These benefits would be accomplished with minimal changes in travel time for transit users on the M6.

Along with these proposed improvements, plans for rapid bus along Pennsylvania Avenue, SE should be implemented. Rapid bus would greatly advance the transition of this corridor from a major vehicular arterial to a street able to sustain high levels of pedestrian and transit based activities. This transition is one of the principal challenges of the Great Streets Program.

The plan recommended in the *Pennsylvania Avenue, SE Corridor Rapid Bus Service Plan* should be revised, however, to reconcile different recommendations proposed under the *DC Transit Alternatives Assessment (the AA)*. In the AA, the proposed alignment for rapid bus follows Pennsylvania Avenue from Downtown Washington past the District boundary and into Maryland where Pennsylvania Avenue becomes Maryland Route 4. The *Rapid Bus Service Plan*, however, recommends routing rapid bus along Pennsylvania Avenue from Downtown Washington to only the District boundary at Southern Avenue. At that point, rapid bus would continue down Southern Avenue and eventually to the Naylor Road Metro. As stated previously in the existing conditions section, the Naylor Road Metro alignment advanced in the *Rapid Bus Service Plan* would be less effective in intercepting vehicular commuting trips from Maryland Route 4. These vehicular commuting trips are one of the principal causes for congested conditions along Pennsylvania Avenue, SE. The alignment advanced in the AA would be more effective in intercepting commuters who are currently driving along Pennsylvania Avenue from Maryland. A service plan with similar depth and detail as the current *Rapid Bus Service Plan* should be developed using an alignment that resembles the one advanced in the AA.

Several other recommendations made in the current *Rapid Bus Service Plan* should also be considered for revisions. Bus shelters should be considered at all bus stops rather than only those located on westbound Pennsylvania Avenue as recommended in the *Rapid Bus Service Plan*. The stop locations for rapid bus would be at retail nodes and so eastbound boardings should be expected. Also, the inclusion of ITS equipment should not be contingent upon establishing a ridership base. Ridership in this corridor is already high so ITS features should be a part of rapid bus service from the beginning.

The preferred four lane cross section with median does not necessarily preclude the use of the outer curb lanes for exclusive HOV/transit use during peak periods. Restricting the outer lanes for HOV/transit use during peak periods should be considered contingent upon further study. This study would need to examine whether or not the outer lane restriction in conjunction with rapid bus implementation could carry a comparable number of person-trips to what is currently being carried.



Proposed Urban Design, Streetscape and Open Space

Drawing from the principles of the Great Streets Program and from the desires expressed by residents and stakeholders, the Streetscape and Urban Design plan recasts Pennsylvania Avenue SE as a sustainable and vibrant neighborhood street. By privileging the pedestrian experience, facilitating the movement of local traffic, and providing easy and convenient access to sustainable transportation options, the corridor can integrate neighborhood life with commercial centers and a network of parks, all while meeting the needs of a safe and efficient roadway.

Overall Streetscape Elements

Streetscape amenities and finishes on Pennsylvania Avenue SE should match the quality of those along Pennsylvania Avenue north of the Anacostia River, while at the same time expressing and enhancing the unique character of the Southeast neighborhood. The following elements will be inherent to the streetscape improvements along the corridor:

- A consistent language of high-quality materials and street furniture is to unify the corridor and lend it a distinct identity.
- New, widened sidewalks along both sides of Pennsylvania Avenue SE will run continuously along the entire length of the corridor.
- A dedicated bicycle lane will run the full length of the corridor and connect to the regional

bike network.

- The existing tree canopy—an invaluable resource and defining characteristic of the corridor—will be preserved and enhanced with additional tree plantings.
- Utility lines should be placed underground to promote tree health, mitigate negative visual blight and match the quality of the rest of the Pennsylvania Avenue corridor.
- A planted median will reduce the width of the roadway and add to the beauty of the corridor while allowing for left turn lanes.
- Custom colored concrete paving patterns are proposed to emphasize comfortable and safe movement across Pennsylvania Avenue, reconnect neighborhoods across the corridor, and promote walking and biking along the corridor's length. Paving materials will 'stitch' across the roadway at intersections and commercial nodes, signalling pedestrian crossing points to drivers and creating a safe and inviting environment for pedestrians.
- Employment of special streetscape materials will be subdued in residential areas, reinforcing their sense of park-like quiet, and will become more intense around commercial nodes to signify activity.
- New lighting for the corridor will be consistent with the 'Dark Skies' initiative and will be chosen to illuminate the pedestrian and vehicle space while minimizing glare. Lighting will be subdued in residential areas and brighter around commercial nodes.
- The corridor will fulfill ADA accessibility guidelines, rendering it safe and comfortable for all users.
- Irrigation will be provided to maintain the health of plantings along the corridor.



Proposed Section at L'Enfant Square

Streetscape Elements at Retail Nodes

The proposed design at each of the three commercial zones—at Alabama, Branch, and Minnesota Avenues—will enhance amenities and spaces to provide a unique, comfortable and exciting pedestrian experience. Each node has been designed to be distinct from the others so that redevelopment opportunities are maximized. The proposed design is flexible and adaptable to encourage residents and visitors to eat, shop and gather. The following are “baseline” design elements to be employed in all retail nodes:

- The design proposes on-street parallel parking lanes that will be convenient for retail users and provide a buffer for pedestrians from roadway traffic.
- Trees will be chosen to provide shade and to distinguish commercial nodes as special places along the corridor.
- Custom paving patterns will be inviting and memorable. Patterns will be designed to ‘stitch’ across the roadway, alerting drivers to the presence of pedestrians.
- Street amenities and furniture will provide places sit, rest and gather, while contributing to the character and continuity of the pedestrian zone.
- Street lighting will be chosen to illuminate the sidewalk and roadway without producing glare, creating safe and active spaces for pedestrians after dark.

Anacostia Gateway, L’Enfant and Twining Square

As a gateway and town center, L’Enfant Square extends nearly from Fairlawn Avenue to 28th Street SE, encompassing the square proper, the small pocket park and the intervening blocks. This intersection between Pennsylvania and Minnesota Avenues offers a unique potential along the corridor for a significant green urban space. The proposed configuration of the roadway consolidates green space, removes roads and promotes easy walkability. This will allow what is now fragmented and unuseable green space to become a true park, gateway to the neighborhood, and neighborhood destination. In addition to the baseline design elements, the following are the design recommendations for L’Enfant Square and surrounding blocks:

- Two large greens will provide a range of flexible spaces for passive recreation as well as opportunities for art.
- Custom colored concrete paving patterns will ‘stitch’ across Pennsylvania Avenue between the two greens, signalling the square as a pedestrian space to approaching vehicles.
- A tree-lined perimeter walkway with new widened sidewalks will ring the square.



L’Enfant Square – Before and After





Penn Branch

The central open space along the corridor, Penn Branch is poised to operate as a vital and active community center and a successful commercial hub with the character of a neighborhood market. In addition to the baseline design elements, the following are the design recommendations for Penn Branch:

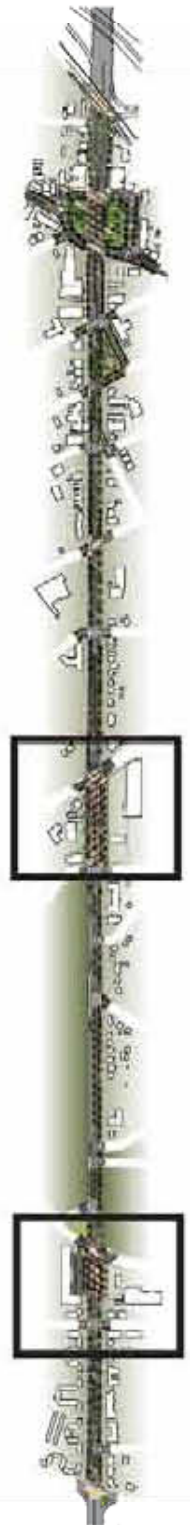
- An expanded pedestrian zone along the north side of the block creates an opportunity for flexible program space, including farmers' markets and festivals.
- A double row of trees along the north side of the street will create a range of environments in which to walk, sit or gather.
- A wide spill zone for restaurants, cafes and shops will enliven the building edge.
- Two pervious amenity zones on the north side and one on the south of Pennsylvania Avenue will allow reabsorption of stormwater, promote tree health and provide a sheltered space for benches, bus stops and other street furnishings.



Fairfax Village and Southern Avenue Gateway

Furthest east, at Alabama Avenue SE, the design of Fairfax Village will emphasize the quiet, park-like character of this segment of the corridor. In addition to the baseline design elements, the following are the design recommendations for Fairfax Village:

- On the north side of the street, garden and spill-zone spaces will line the building edge, creating a flexible environment in which to sit, eat or shop.
- A double row of street trees will extend the sense of arrival from Southern Avenue. Existing mature oaks will be preserved and new trees planted where there are gaps.
- Pervious amenity zones will allow reabsorption of stormwater, promote tree health and provide a sheltered space for benches, bus stops and other street furnishings.





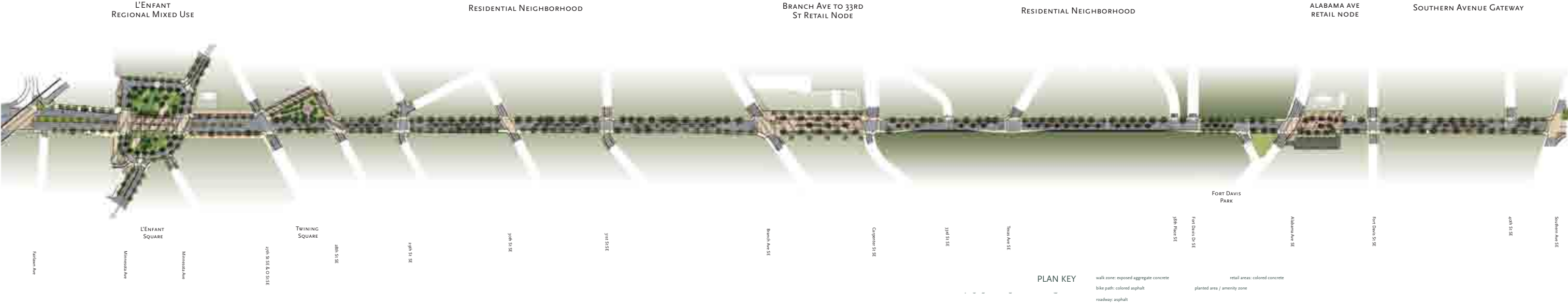
Low-Impact Design Principles

Pennsylvania Avenue SE has the opportunity to create a sustainable and integrated environment. Therefore, the proposed design has included several low-impact design principles:

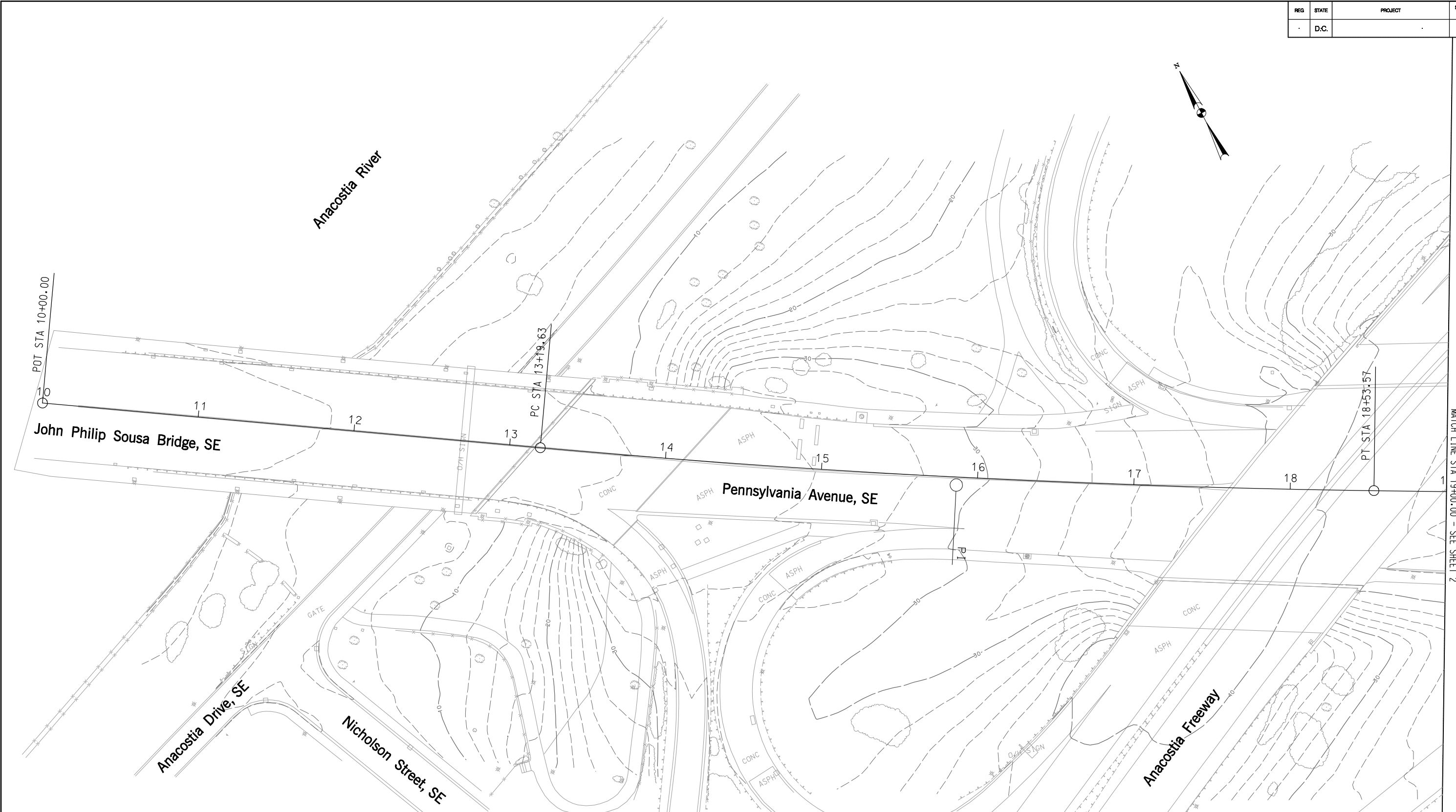
- To reduce the urban heat island effect and associated energy use by maximizing plantings and using light-colored paving surfaces. Wherever possible, colored concrete will be employed in pedestrian areas, including roadway intersections, and light-colored asphalt will mark the bikeway.
- To preserve and enhance the existing tree canopy, maximizing pavement shading. Existing street trees will be preserved and gaps filled, completing the already extensive tree canopy along the corridor.
- To reduce impervious paving area, thereby minimizing stormwater runoff, combined sewer overflows and water pollution. Pervious paving and unit pavers are recommended for use wherever possible, including in pedestrian zones, parking areas, and bikeway. The corridor-long planted median will absorb rainwater and a continuous tree zone will both allow for rainwater absorption and promote tree health.
- To create a sustainable transportation network that will provide many travel options. Intersections are designed to improve pedestrian walkability, a dedicated bicycle lane will run the entire length of the corridor and connect to regional networks, and a new rapid bus line is proposed that should be given lane priority.



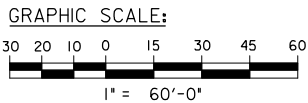
Urban Design Plan



REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			



I:\PALAVE_SE\cut\SH\ALT 1\PHD-PA01-PENN.AVE.dgn \$PLTDIVS\$ \$PENTBLS\$
Friday, December 15, 2006 AT 09:39 AM



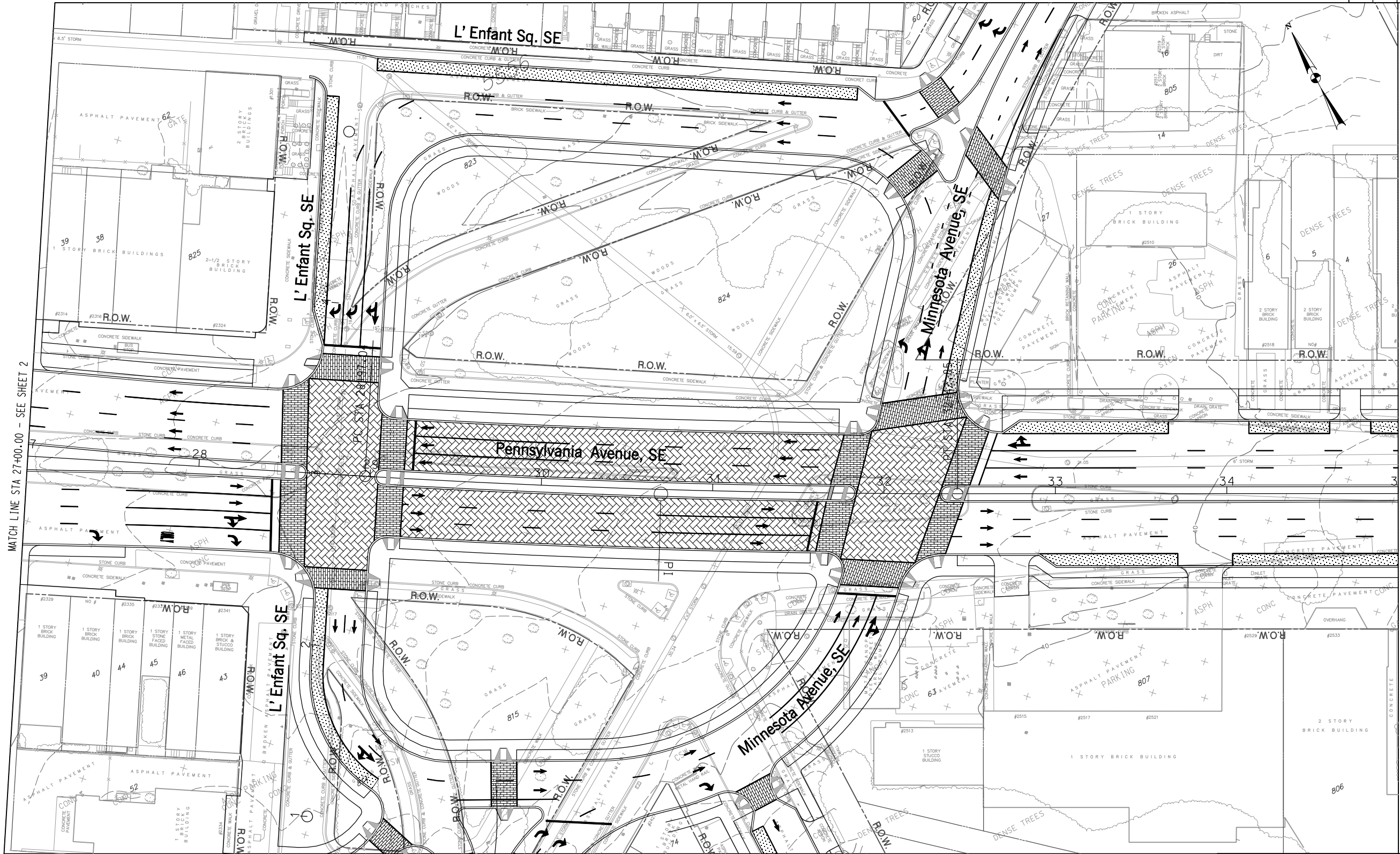
LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
PENNSYLVANIA AVENUE, SE CONCEPT DESIGN FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE	PROJECT ENG. _____ DESIGNED BY _____ CHECKED BY _____ DRAWN BY _____ PROJECT MGR. _____ DIVISION CHIEF _____
ALTERNATIVE NO. 1 SHEET 1 OF 14 STA 10+00.00 TO STA 19+00.00	DATE _____ FILE _____ SHEET _____ OF _____

MATCH LINE STA 19+00.00 - SEE SHEET 2

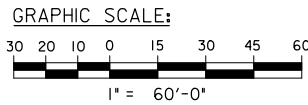
MATCH LINE - SEE SHEET 5



MATCH LINE STA 27+00.00 - SEE SHEET 2

MATCH LINE STA 35+00.00 - SEE SHEET 6

MATCH LINE - SEE SHEET 4



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO.	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 3 OF 14
STA 27+00.00 TO STA 35+00.00

PROJECT ENG. _____
DESIGNED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF _____

DATE _____
FILE _____
SHEET _____ OF _____

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
.	D.C.	.	.	.

MATCH LINE - SEE SHEET 3

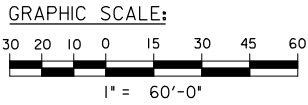


REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			



I:\PALAVE_SE\cut\SH\ALT\1\PHD-PA05 PENN.AVE.dgn
Friday, December 15, 2006 AT 09:59 AM
\$PENTBL\$
\$PLIDRV\$

MATCH LINE - SEE SHEET 3



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO.	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

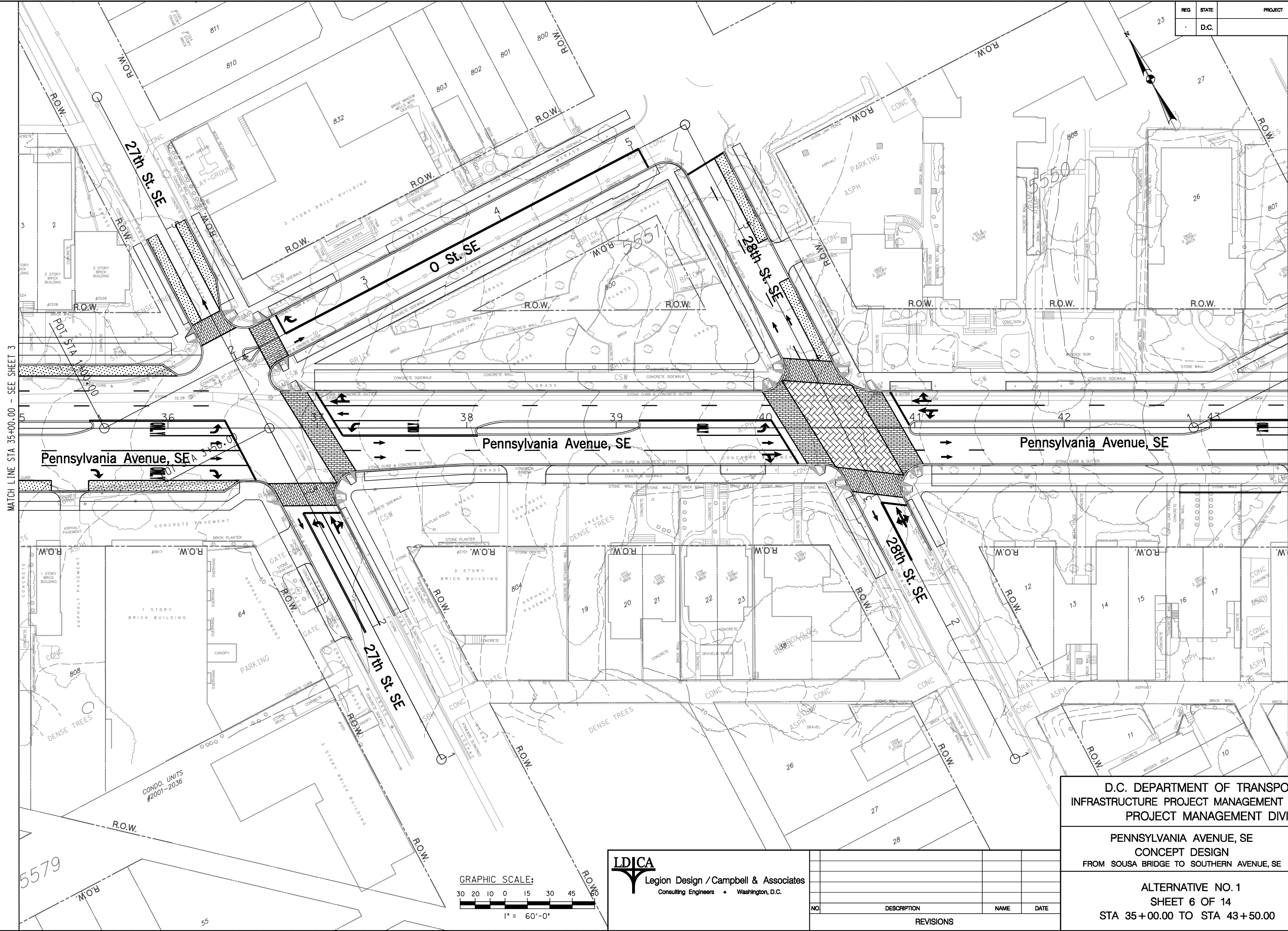
ALTERNATIVE NO. 1
SHEET 5 OF 14

PROJECT ENG. _____
DESIGNED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF _____

DATE _____
FILE _____
SHEET _____ OF _____

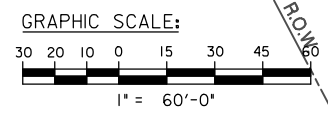
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.		23	27



MATCH LINE STA 35+00.00 - SEE SHEET 3

MATCH LINE STA 43+50.00 - SEE SHEET 7

I:\PALAVE_SE\cut\SH\ALT1\PHD-PA06-PENN.AVE.dgn
Friday, December 15, 2006 AT 10:06 AM
\$PLIDRV\$
\$PENTBL\$



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

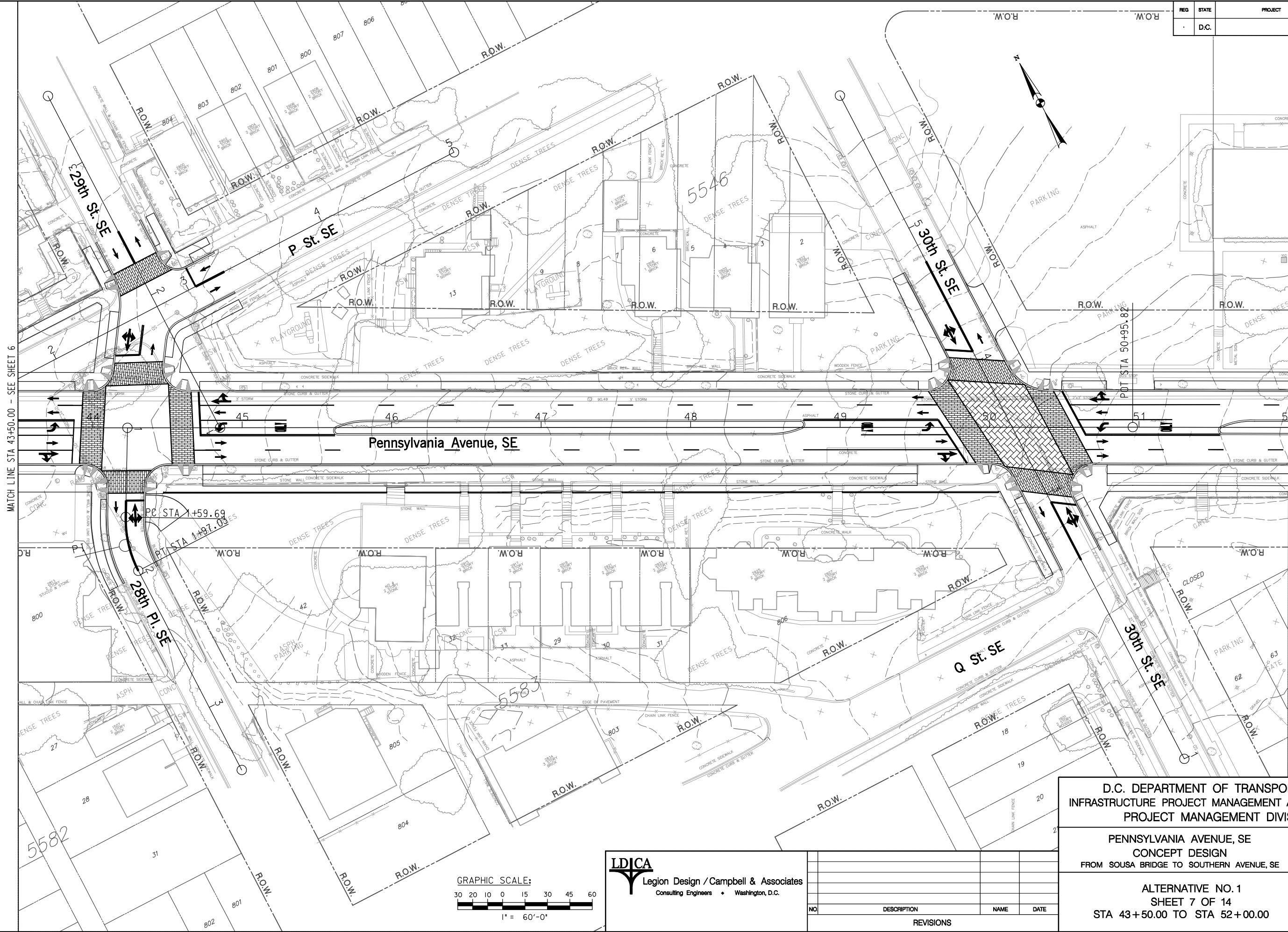
NO	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 6 OF 14
STA 35+00.00 TO STA 43+50.00

PROJECT ENG. _____
DESIGNED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF _____
DATE _____
FILE _____
SHEET _____ OF _____



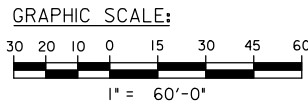
MATCH LINE STA 43+50.00 - SEE SHEET 6

MATCH LINE STA 52+00.00 - SEE SHEET 8

\$PENTBLS\$

\$PLIDRV\$

I:\PALAVE_SE\cut\SH\ALT1\PHD-PA07.PENN.AVE.dgn
Friday, December 15, 2006 AT 10:05 AM



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

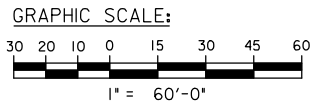
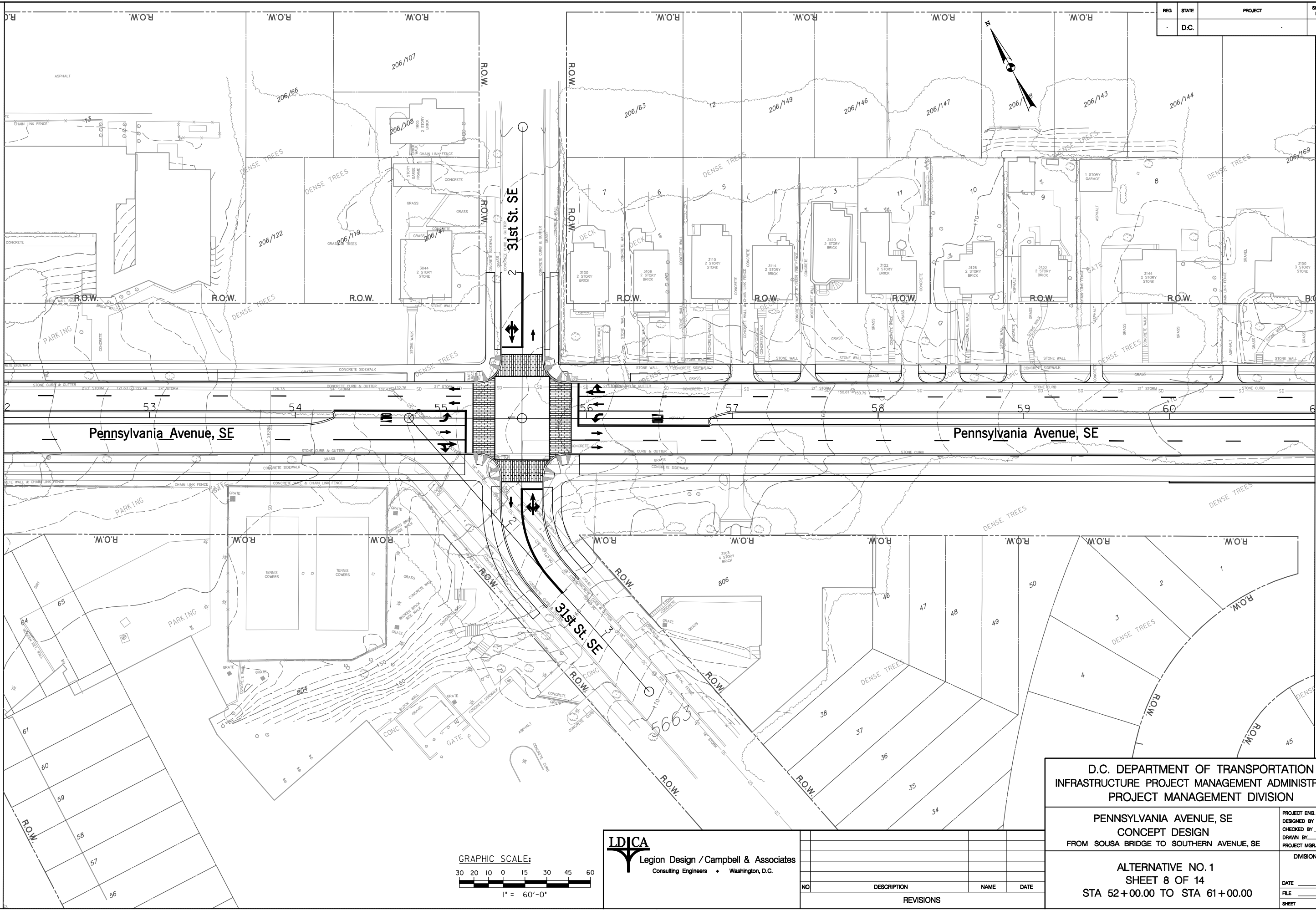
NO.	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
PENNSYLVANIA AVENUE, SE CONCEPT DESIGN FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE	
ALTERNATIVE NO. 1 SHEET 7 OF 14 STA 43+50.00 TO STA 52+00.00	
PROJECT ENG. _____ DESIGNED BY _____ DRAWN BY _____ PROJECT MGR. _____ DIVISION CHIEF _____	DATE _____ FILE _____ SHEET _____ OF _____

I:\PA\AVE_SE\cut\SH\ALT 1\PHD-PA08 PENN.AVE.dgn
Friday, December 15, 2006 AT 10:14 AM
\$PLIDRV\$
\$PENTBL\$

MATCH LINE STA 52+00.00 - SEE SHEET 7

MATCH LINE STA 61+00.00 - SEE SHEET 9



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO.	DESCRIPTION	NAME	DATE
REVISIONS			

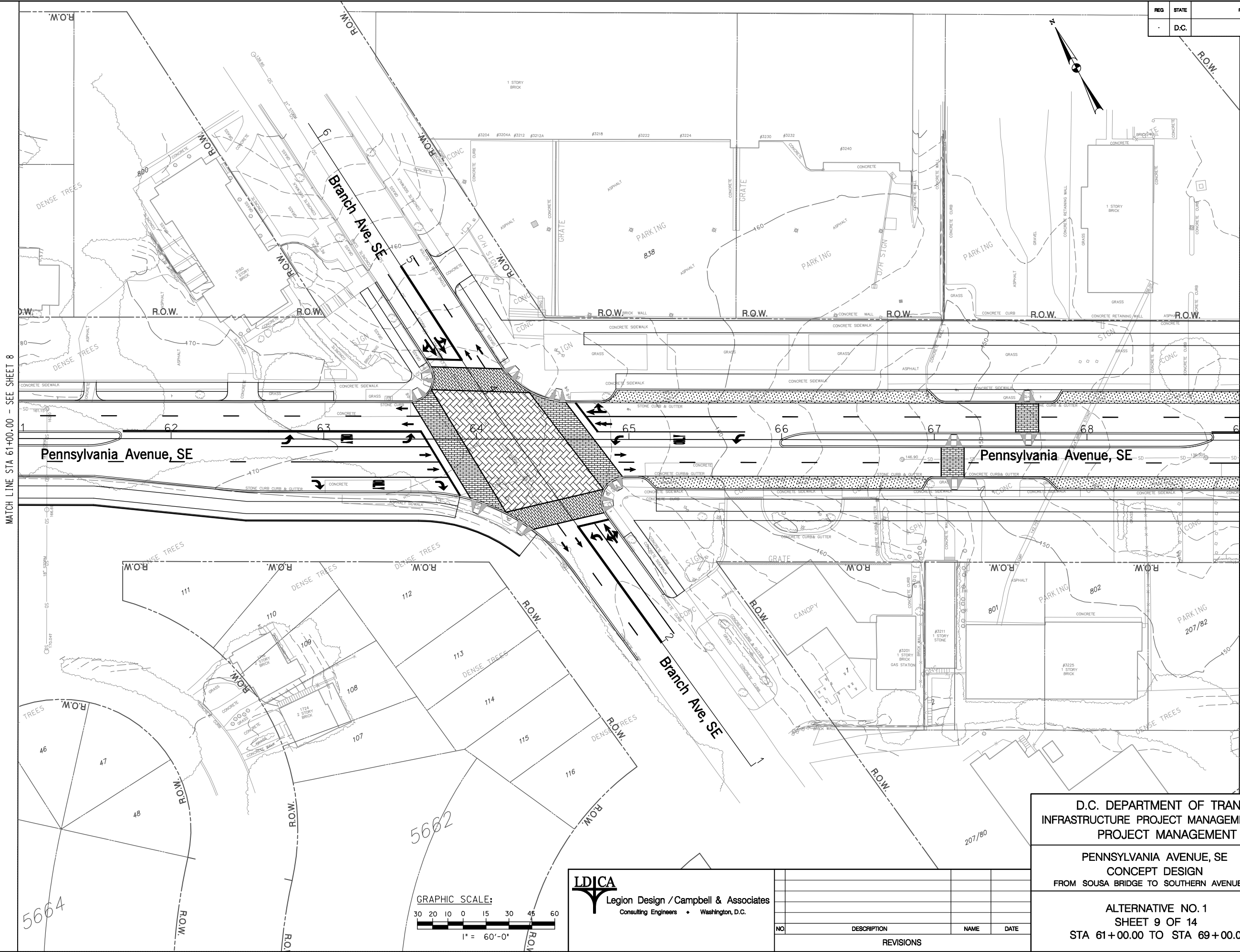
D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 8 OF 14
STA 52+00.00 TO STA 61+00.00

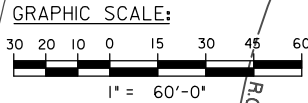
PROJECT ENG. _____
DESIGNED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF _____
DATE _____
FILE _____
SHEET _____ OF _____

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			



MATCH LINE STA 61+00.00 - SEE SHEET 8

MATCH LINE STA 69+00.00 - SEE SHEET 10



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

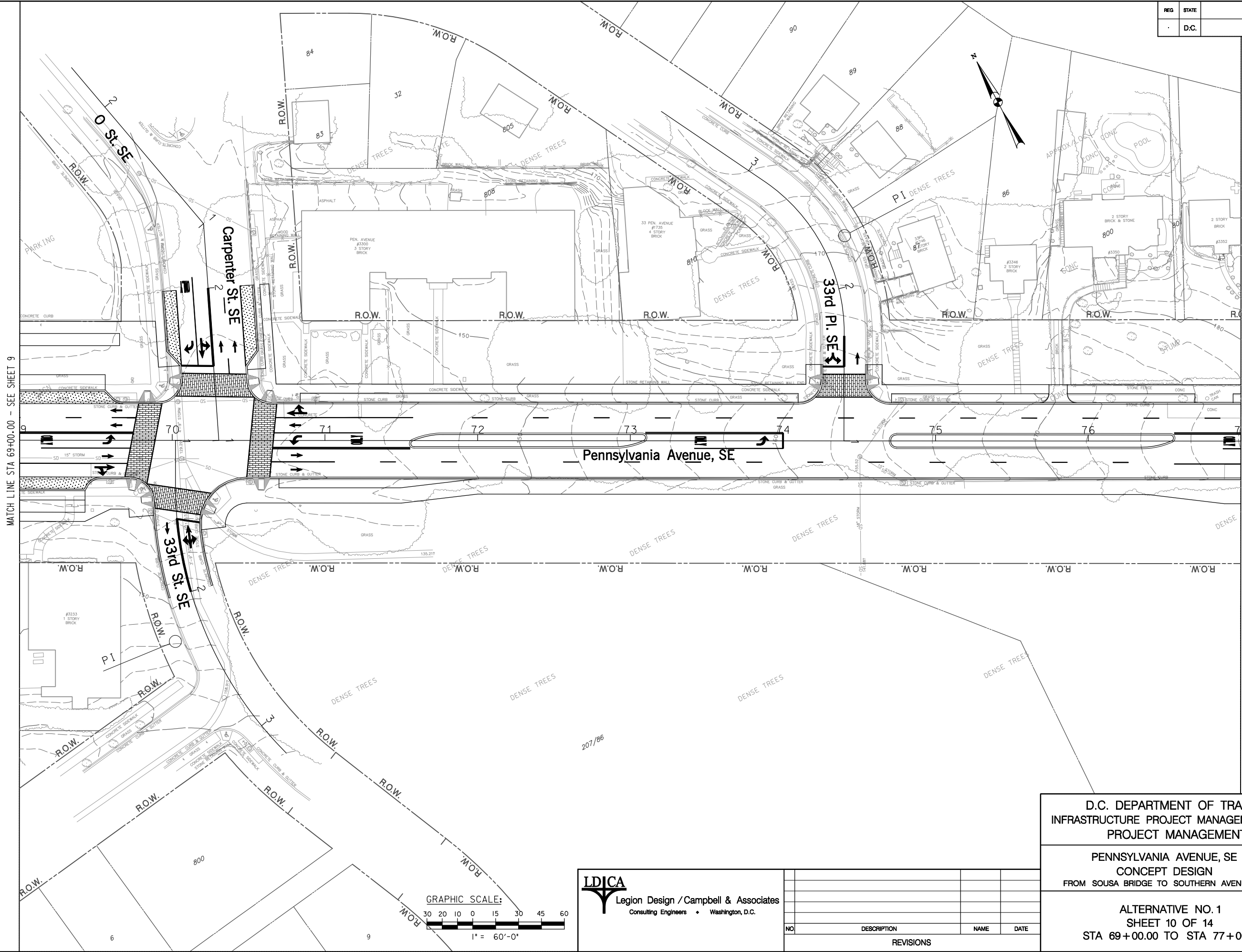
D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 9 OF 14
STA 61+00.00 TO STA 69+00.00

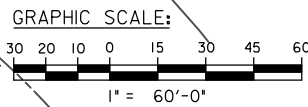
PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF _____
DATE _____
FILE _____
SHEET _____ OF _____

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			



MATCH LINE STA 69+00.00 - SEE SHEET 9

MATCH LINE STA 77+00.00 - SEE SHEET 11



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 10 OF 14
STA 69+00.00 TO STA 77+00.00

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____
DIVISION CHIEF _____
DATE _____
FILE _____
SHEET _____ OF _____

I:\PALAVE_SE\cut\SH\ALT 1\PHD-PA11-PENNL.AVE.dgn
Friday, December 15, 2006 AT 10:16 AM

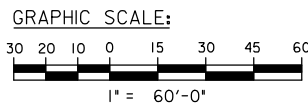
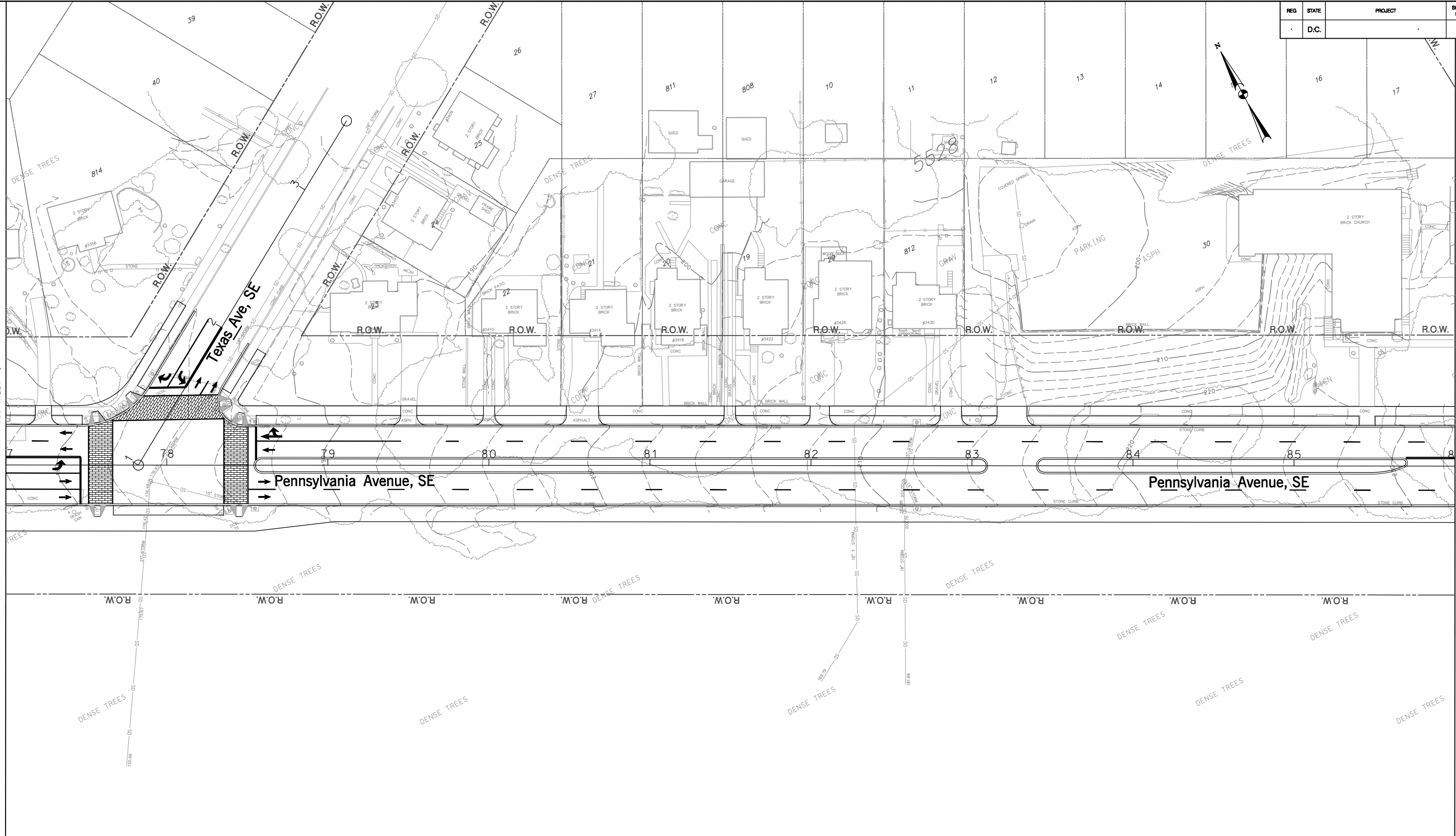
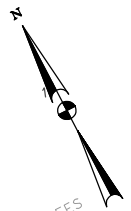
\$PENTBLS\$

\$PLIDRVS\$

MATCH LINE STA 77+00.00 - SEE SHEET 10

MATCH LINE STA 86+00.00 - SEE SHEET 12

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION

PENNSYLVANIA AVENUE, SE
CONCEPT DESIGN
FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE

ALTERNATIVE NO. 1
SHEET 11 OF 14
STA 77+00.00 TO STA 86+00.00

PROJECT ENG. _____
DESIGNED BY _____
CHECKED BY _____
DRAWN BY _____
PROJECT MGR. _____

DIVISION CHIEF _____

DATE _____
FILE _____
SHEET _____ OF _____

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			

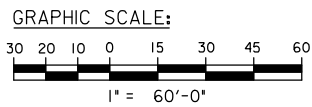
MATCH LINE STA 86+00.00 - SEE SHEET 11

MATCH LINE STA 95+00.00 - SEE SHEET 13

\$PENTBLS\$

\$PLIDRVS\$

I:\PALAVE_SE\cutsh\PAVE\PAVE-PAVE-PAVE.dgn
Friday, December 15, 2006 AT 10:17 AM



LDICA
Legion Design / Campbell & Associates
Consulting Engineers • Washington, D.C.

NO	DESCRIPTION	NAME	DATE
REVISIONS			

D.C. DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION PROJECT MANAGEMENT DIVISION	
PENNSYLVANIA AVENUE, SE CONCEPT DESIGN FROM SOUSA BRIDGE TO SOUTHERN AVENUE, SE	
ALTERNATIVE NO. 1 SHEET 12 OF 14 STA 86+00.00 TO STA 95+00.00	
PROJECT ENG. _____ DESIGNED BY _____ DRAWN BY _____ PROJECT MGR. _____ DIVISION CHIEF _____	DATE _____ FILE _____ SHEET _____ OF _____

I:\PALAVE_SE\cut\SH\ALT 1\PHD-PA13_PENN_AVE.dgn
Friday, December 15, 2006 AT 10:17 AM

\$PENTBLS\$

\$PLIDRV\$

MATCH LINE STA 95+00.00 - SEE SHEET 12

MATCH LINE STA 104+00.00 - SEE SHEET 14

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	D.C.			

