



Application for URBAN DESIGN COMMITTEE Review

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219
(804) 646-6335

<http://www.richmondgov.com/CommitteeUrbanDesign>

Application Type

- Addition/Alteration to Existing Structure
- New Construction
- Streetscape
- Site Amenity

- Encroachment
- Master Plan
- Sign
- Other

Review Type

- Conceptual
- Final

Project Name: Lee Circle Safety Modifications Project (Monument Avenue and North Allen Avenue Roundabout)

Project Address: Intersection of Monument Avenue and North Allen Avenue

Brief Project Description (this is not a replacement for the required detailed narrative) : _____

Intersection infrastructure improvements including median and corner island extensions, curbing, sidewalk, curb ramps, crosswalks, signing, pavement markings, and landscaping to improve safety for pedestrians, bicyclists, and drivers.

This project improves intersection safety while balancing the importance of historic preservation.

Applicant Information

(on all applications other than encroachments, a City agency representative must be the applicant)

Name: Thomas E. Flynn, P.E., P.T.O.E. Email: Thomas.Flynn@richmondgov.com

City Agency: City of Richmond, Department of Public Works Phone: 804-646-3435

Address: 900 E. Broad Street, Room 707 Richmond, VA 23219

Main Contact (if different from Applicant): _____

Company: _____ Phone: _____

Email: _____

Submittal Deadlines

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. **Late or incomplete submissions will be deferred to the next meeting.**

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. **It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.**

UDC Background

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06 and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

Lee Circle Safety Modifications Project (Monument Ave. and North Allen Ave. Roundabout)

Project Narrative for Richmond UDC Final Review – October 9, 2014

Project Purpose

The purpose of this project is to implement infrastructure modifications at the intersection of Monument Avenue and North Allen Avenue to improve safety for all modes of transportation (including pedestrians, bicyclists, and drivers). This is accomplished by designing a safe location where a pedestrian can cross the intersection and reducing the crossing distance, slowing vehicle speeds at the roundabout entry and exit points as well as within the roundabout, and reducing driver confusion in terms of navigating the roundabout and staying in the correct travel lane. The intent of this project is to implement these safety modifications while preserving the historically significant nature of the roundabout itself.

The types of intersection modifications include: median and corner island extensions, curbing around the medians and corner islands, concrete sidewalks, ADA-compliant curb ramps with detectable warning surface, crosswalks, signing, pavement markings including lane edge lines, crosswalk edge lines, and lane directional arrows in the roundabout, and landscaping on the extended medians and corner islands.

No geometric modifications are recommended to the inner circle itself where the Robert E. Lee Statue is located. The design also recognizes the significance of the existing curb and gutter around the four medians and minimizes disruption to the maximum extent possible. In earlier stages of this project, application of a high friction epoxy coating was considered to improve the friction of vehicle tires with the cobblestone block surface. However, due to feedback from several stakeholders, no application of a high friction coating is being considered as part of this project.

Project Background

The project is located at the intersection of Monument Avenue and North Allen Avenue, in the Fan District of the City of Richmond. Project limits include the intersection itself, the existing four medians, and the four existing corners of the intersection. The project limits extend approximately 250 feet in all directions from the center of the Lee Circle.

This is a City of Richmond Department of Public Works project managed by Thomas E. Flynn, P.E., P.T.O.E. (City Transportation Engineer). As part of their on-call engineering services

Lee Circle Safety Modifications Project (Monument Ave. and North Allen Ave. Roundabout)

contract, RK&K was hired in February 2014 by the City to provide engineering design services. The City conducted several meetings with stakeholders as listed below:

- 2012-2013: Several informal meetings and discussions with West Grace Street Association and Friends of Allen Avenue Median regarding the medians north and south of the intersection.
- May 7, 2014: City of Richmond / RK&K held a meeting with Monument Avenue Preservation Society (MAPS) to discuss project concepts.
- May 13, 2014: City of Richmond / RK&K held a citizen information meeting at Orchard House School to discuss project goals and conceptual plan. Meeting was attended by the Honorable Charles R. Samuels, Richmond City Council, 2nd District, the Orchard House School, MAPS, and neighbors.
- May 16, 2014: City of Richmond held an informal meeting with MAPS and neighborhood representatives to further discuss the project and design alternatives.
- June 2, 2014: City of Richmond / RK&K presented project goals and conceptual plan to Fan District Association Board Meeting.
- June 16, 2014: City of Richmond / RK&K presented project goals and conceptual plan to West Grace Street Association.
- August 28, 2014: City of Richmond / RK&K held a field meeting at project site with neighborhood focus group to discuss project final plan.

As of September 17, 2014, City of Richmond has project support from MAPS, City Councilman Charles Samuels, Fan District Association, West Grace Street Association, and a majority of families immediately adjacent to the intersection.

Project Budget / Funding Sources

The engineering cost estimate is \$330,000. Funding sources include:

- \$200,000 (Capital Improvements Project (CIP) funding FY 2014 – Approved)
- \$600,000 (\$300,000 CIP funding, \$300,000 Revenue Sharing – Available December 2014, Pending Approval)

Description of Construction / Proposed Modifications

Proposed modifications for the project include the following (see the final plan rendering and engineering plans for additional details):

Lee Circle Safety Modifications Project (Monument Ave. and North Allen Ave. Roundabout)

- Extend the four intersection medians. The north and south medians are extended 15 feet from their existing nose. The east and west medians are extended 35 feet from their existing nose. The four extended medians will have a concrete curb that will blend into the existing median concrete curb. Within the extended area, the existing curb and gutter pan on the medians will be retained in place. The existing top of curb will remain exposed and the existing gutter pan will be covered with soil. The extended medians will be planted with grass and the surface of the extended area will be level with the top of the existing curb and existing grass surface. A 7" wide trench frame with solid black cover will be installed in the extended portion of the median to properly drain the intersection.
- The existing intersection has two entry lanes and two exit lanes for both directions along Monument Avenue, and one entry lane and one exit lane for both directions along Allen Avenue. This traffic arrangement will remain unchanged. However, the existing intersection also has two travel lanes striped within the intersection itself by all four medians. This will be modified to a single travel lane at the east and west medians. The north and south medians will remain unchanged with two travel lanes.
- Eight corner islands will be installed in the existing parking lane (Two islands installed at each of the four corners). The impact to on-street parking is a loss of 15 parking spaces. All corner islands will have a concrete curb perimeter, similar to the medians. The corners islands will be landscaped with lirioppe (Big Blue variety) in a 2" mulch bed. The corner islands will be separated from the existing corner curb line by 18" to maintain existing water drainage along the gutter pan. Pedestrian access from the existing curb to the corner island will be flush at-grade via a solid black cover plate over the 18" gutter pan.
- All existing cobblestone block in the street surface impacted by the construction work at the median and corner island extensions will be salvaged and stored for future use.
- Eight designated crosswalk locations will be installed. At each crosswalk, an ADA-compliant curb ramp with detectable warning surface will be installed. The proposed color of the detectable warning surface is Colonial Red (maroon) which matches existing ramp colors.
- Due to construction, existing curb ramps will be demolished and those areas will be replaced with new sidewalk and curb.
- 4" deep standard concrete sidewalk will be installed on the four medians and eight corner islands from curb ramp to curb ramp and will connect to the existing curb and sidewalk.
- Project includes extension of the median irrigation lines and heads located on the north, west, and east medians. A new irrigation line and head will also be installed on the south median to allow for future expansion of the irrigation line to the south.
- Signing proposed at the intersection includes: yield signs, pedestrian crossing signs, one way right signs, and keep right chevrons. Other existing signs will be removed as designated by the City Project Manager, both at the intersection and along all four of the approach legs.

Richmond UDC Final Review – Project Narrative

Lee Circle Safety Modifications Project (Monument Ave. and North Allen Ave. Roundabout)

- Pavement markings proposed at the intersection includes: eradication of existing markings, new yellow and white lane edge lines, new white crosswalk lines, new white dashed yield lines, new white dashed lane lines in the circulatory portion of the roundabout, and new pavement lane designation arrows.
- No new lighting is proposed as part of this project.

Project Schedule

- | | |
|--|----------------|
| • Project Kick Off | March 2014 |
| • Preliminary Design | July 2014 |
| • Final Design | September 2014 |
| • UDC and PC Final Approval | October 2014 |
| • \$600,000 (\$300K CIP, \$300K Revenue Sharing Available) | December 2014 |
| • Bid Advertisement | December 2014 |
| • Award Contract | January 2015 |
| • Start of Project Construction | February 2015 |
| • Completion of Project Construction | April 2015 |

Project Landscaping Plan

- In four median extensions, install topsoil to 1” below top of concrete curb. Grade and plant grass seed. Lime and fertilize seeded areas. Area to be landscaped with grass in medians is 1,050 square yards.
- In eight corner islands, install topsoil to 1” below top of concrete curb. Grade and plant lirioppe (Big Blue variety) with 2” depth of mulch. Lirioppe to be planted as 2” plugs (as weather permits). Lirioppe plugs to be planted 18” apart per row with rows 18” apart and plant plugs staggered per row. Number of lirioppe plugs is 1,650.
- No existing trees are to be removed as part of this project.

Application Attachments

Monument Avenue and Allen Avenue Roundabout Improvements Project – Citizen Information Meetings June 2014 (Presentation Slides)

Lee Circle Safety Modifications Project – Existing Conditions Rendering, dated May 2014

Richmond UDC Final Review – Project Narrative

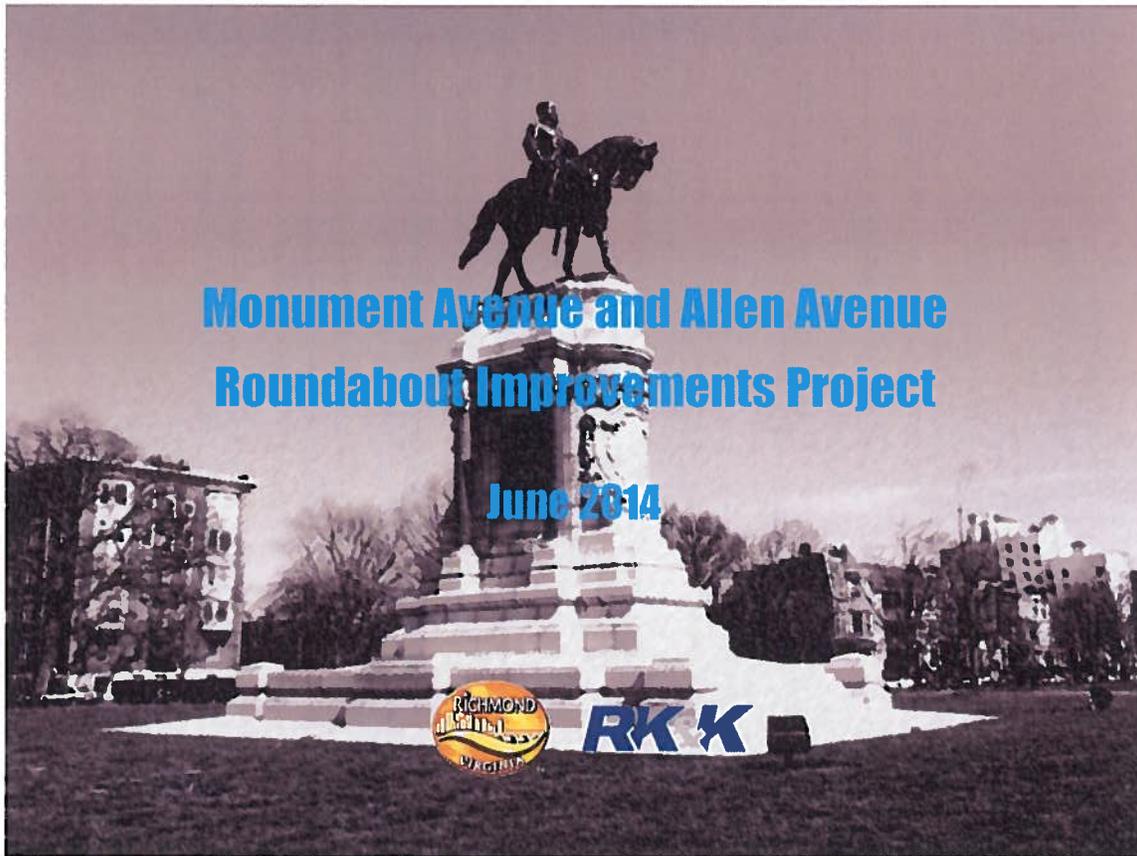
Lee Circle Safety Modifications Project (Monument Ave. and North Allen Ave. Roundabout)

Lee Circle Safety Modifications Project – Final Plan Rendering, dated September 2014

Monument Avenue and North Allen Avenue Roundabout Improvements – Engineering Plans, dated September 2014

Project Support Documentation – Via Emails and Letters

Product Specification Sheet – 7” Wide Neenah Type M Trench Frame (R-4995 B2)



Presentation Topics



- **Project Goals**
- **Existing Conditions**
- **Proposed Improvements / Conceptual Plan**
- **Open Discussion**

Project Goals



- **Preserve History of Roundabout**
 - No Improvements Change Size or Use of Inner Circle
 - Preserve Curb Line of Existing Medians
- **Improve Safety for Pedestrians, Bicyclists and Drivers**
 - Reduce Crossing Distances for Pedestrians in Roadway
 - Lower Vehicle Speeds
 - Entry and Exit Points
 - Within the Roundabout
- **Minimize Driver Confusion**
 - Enhance Pavement Markings
- **Improve Pavement Surface Friction**
 - Reduce Potential for Vehicle Collisions in Wet Weather

Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Existing Conditions



- **Vehicle Traffic Counts**
 - Monument Avenue – 17,000 VPD (Year 2012)
 - Allen Avenue – Under 1,000 VPD (Year 2012)
 - AM Peak Hour
 - Eastbound – 1,100 VPH
 - Westbound – 250 VPH
 - PM Peak Hour
 - Eastbound – 600 VPH
 - Westbound – 600 VPH
- **Vehicle Traffic Movements**
 - Heavy Movement – Monument Avenue East and West
 - Minimal Traffic To/From Allen Avenue

Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Existing Conditions



- **Crash Statistics (2011-2013): 33 Crashes In 3 Years**
 - **Crashes By Year**
 - 2011 – 6 Crashes
 - 2012 – 14 Crashes
 - 2013 – 13 Crashes
 - **Crashes By Type**
 - 36% Angle
 - 27% Rear End
 - 21% Fixed Object
 - 6% Sideswipe-Same Direction
 - 3% Bicycle
 - 3% Pedestrian
 - 3% Other
 - **Crashes By Weather**
 - 67% Wet Pavement
 - 33% Dry Pavement

Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Existing Conditions



- **Existing Lane Configurations / Layout**



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Proposed Improvements



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014

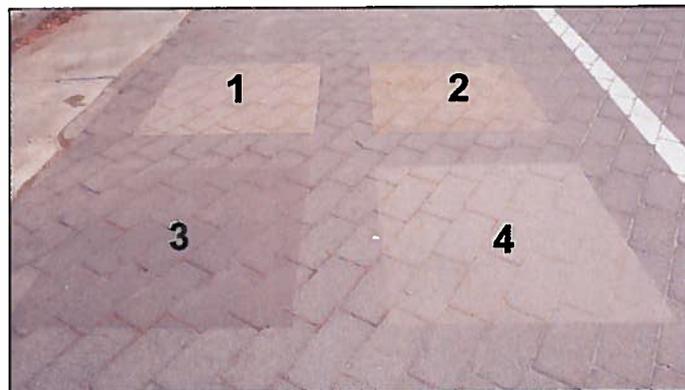


Proposed Improvements



o High Friction Epoxy Treatment

- 67% of Crashes in Last 3 Years Occurred With Wet Pavement
- Improves Cobblestone Surface Friction, Reduces Tire Slippage
- Testing Four Color Samples – Northeast Corner



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Proposed Improvements



- Examples of Roundabout Landscaping



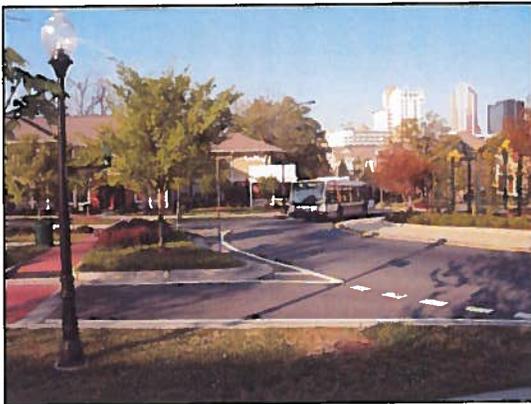
Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Proposed Improvements



- Examples of Roundabout Landscaping



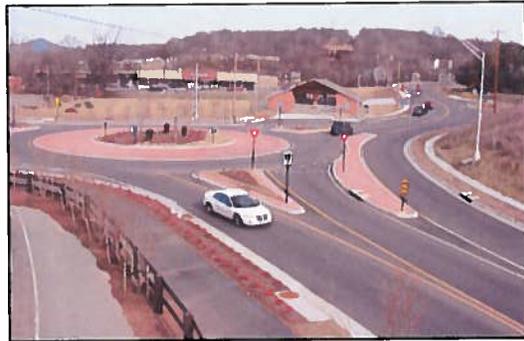
Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



Proposed Improvements



- Examples of Roundabouts



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014

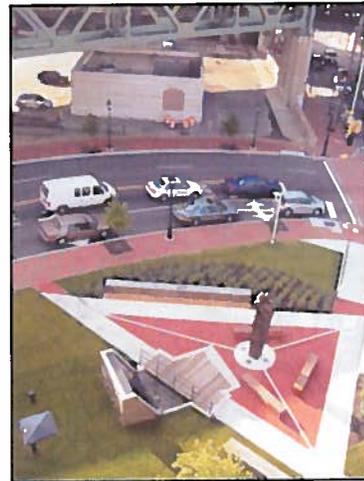


RK&K

Proposed Improvements



- Other Landscaping/Aesthetics Examples



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014

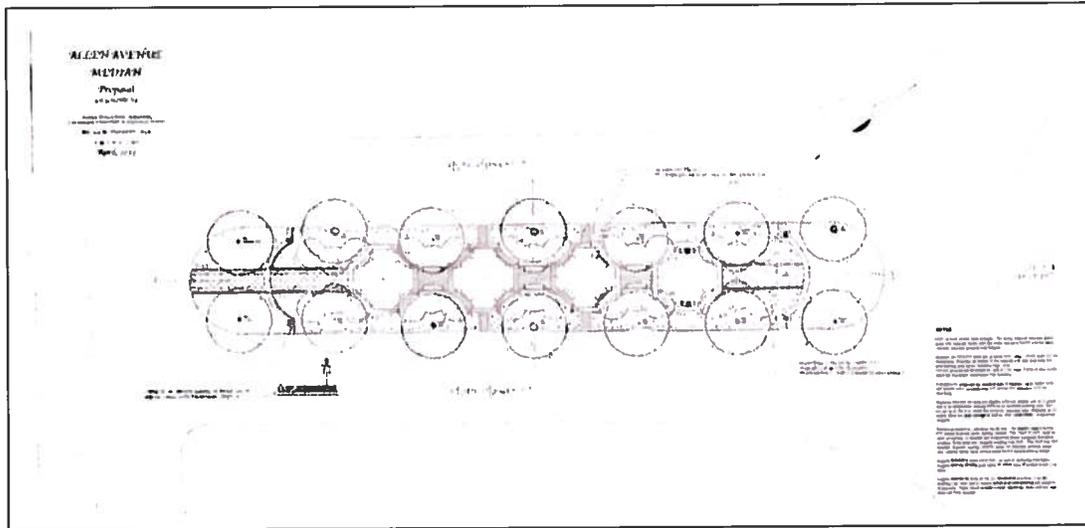


RK&K

Proposed Improvements



- Allen Avenue Median Landscaping Plan



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



RK&K

Questions And Answers



Monument Avenue and Allen Avenue Roundabout Improvements
June 2014



RK&K

1

Xu, Jian - DPW

From: Flynn, Thomas E. - DPW
Sent: Monday, August 11, 2014 10:36 AM
To: Samuels, Charles R. - Council Member; Pitts, Marianne G. - Council Chief of Staff Office; 'alicesmassie@gmail.com'; 'bill.gallasch@joynerfineproperties.com'
Cc: Jackson, James A. - DPW; Khara, M S. - DPW; Olinger, Mark A. - PDR; Xu, Jian - DPW; Horak, Kenneth D. - DPW; 'Brian Revels'; Owen Peery; Robinson, Torrence S. - DPW; Bridewell, Travis A. - DPW
Subject: Proposed Design Guidelines For Monument/Allen Roundabout Safety Project
Attachments: Monument and Allen.pdf

We believe City staff, in concert with MAPS and neighborhood representatives, have developed a consensus plan for safety enhancements to the Lee Circle roundabout, which meets both geometric/operational objectives to enhance pedestrian safety and also provide acceptable changes to this historic street. The City's steps to proceed with this project are outlined below. The cooperation of everyone involved in this effort is much appreciated, and we trust you will not hesitate to contact us with any questions or comments. Finally, please forward this to anyone you think should read it.

A neighborhood meeting was held July 30th consisting essentially of 16 families (several participated in abstention), the vast majority of whom are both members of Monument Avenue Preservation Society (MAPS) and live within several houses of the Lee Circle. Purpose of the meeting was to review the latest roundabout enhancement plan (attached) and offer direction to the City in terms of design elements a consensus of the group would support. Key conclusions are:

1. In keeping with Monument Avenue's historic condition, the theme of the design can be characterized as, "simple and green";
2. The geometric plan, essentially as presented in the attached drawing, is supported;
3. The new sidewalks through the splitters (median extension) should be as symmetrical as possible;
3. The crosswalks, both within the street and splitters, ideally would be granite, but recognizing cost constraints, a cobblestone like material perhaps somewhat smooth to accommodate wheelchairs and strollers, would be acceptable. The crosswalks through the splitters should be at grade;
4. The splitters should be comprised of grass, consistent with the current Monument median;
5. The existing sprinkler systems found in the median should be extended to cover the new splitters;
6. The eight chokers, at each of the pedestrian crosswalks, should be similar in length. The angled choker at the Lee Medical Building entrance, should be "squared off" to be symmetrical with the other 7. These chokers should be landscaped with shrubs - not nandinas, and not too tall. A flower, perhaps a daffodil, should be considered as an edging;
7. The existing curb and cutter (with the 4-foot wide gutter pan) on the curved median and along the sidewalk edge (location of the chokers in the curb parking area) will be maintained to the extent possible. The new curb and cutter for the extended splitters (location of the pedestrian cross walks) can be standard curb and gutter (i.e., 18" cutter pan, or just a curb));
8. There was a clear consensus for the items essentially as summarized above. Fourteen families supported these recommendations and 2 apposed (again, 6 voted, but in abstention); and
9. There was unanimous opposition to the high friction pavement treatment;

Based on the above, the City will proceed as follows:

1. We will proceed to final design based on the base plan attached, and revised/embellished as stated above;
2. The plan will be reviewed by the Department of Historic Resources (currently awaiting a return call);
3. The plan will be updated, and suggestions made for the landscaping of the chokers;
4. The geometric plan, as presented (and attached), will provide positive control of the higher vehicle speeds. For this reason, coupled with the unanimous opposition, the initial plan for implementation will not include the high friction pavement treatment. This issue will be revisited at some point in the future after the crash reduction impact of the geometric improvements has been evaluated;
5. We will have the final design plan reviewed by involved residents, and we also will proceed with arranging the UDC/CPC to review the plans in September ; and
6. A more easy to understand color schematic of the recommendations (vs. the attached engineering drawing) will be prepared shortly and distributed.

Please feel free to contact us with any questions or comments as we proceed with this important safety project.

Tom

Thomas E. Flynn, P.E., PTOE

2

Xu, Jian - DPW

From: Flynn, Thomas E. - DPW
Sent: Friday, August 29, 2014 4:59 PM
To: Xu, Jian - DPW
Subject: FW: Lee Monument traffic calming

MAPS letter of support (keep this with the FDA letter just sent).
Tom

Thomas E. Flynn, P.E., PTOE
City Transportation Engineer
Department of Public Works
900 E. Broad Street, Room 707
Richmond, VA 23219
Phone: (804) 646-3435
Fax: (804) 646-7807

From: Samuels, Charles R. - Council Member
Sent: Thursday, August 07, 2014 6:46 AM
To: Ceci and Bill
Cc: Flynn, Thomas E. - DPW; Pitts, Marianne G. - Council Chief of Staff Office; Matthew Stanley
Subject: Re: Lee Monument traffic calming

3

Great news! Thanks Bill.

Charles R. Samuels
Councilman, 2nd District
900 E. Broad Street, 2nd Floor
Richmond, VA 23219
Charles.Samuels@Richmondgov.com
www.charlesrsamuels.com
804-690-0898 (cell)

On Aug 6, 2014, at 9:53 PM, "Ceci and Bill" <cecibill@comcast.net> wrote:

Charles, the board of MAPS has reconsidered the extensions (wings) to help slow down the traffic and we will endorse the plan proposed by traffic engineering. We still feel the speed is the problem, but feel the people are at risk and the proposals will help those on foot.

Since the engineers are sure that there proposal is the best and statically correct thing to do, the need to coat the circle would only allow the traffic to go at a faster speed.

Therefore we are STRONGLY opposed to spending the money to apply the grip coating.

We do appreciate the effort, time and money being expended for this improvement and we duly thank all involved.

Bill Gallasch,

President

MAPS



4

**The Fan District Association of Richmond, Virginia
208 Strawberry Street, Richmond, Virginia 23220**

August 7, 2014

The Honorable Charles Samuels
2nd District
Richmond City Council
Via email: Charles.samuels@richmondgov.com

Thomas E. Flynn
City Transportation Engineer
Department of Public Works, City of Richmond
Via email: thomas.flynn@richmondgov.com

Councilman Samuels and Mr. Flynn:

I am writing on behalf of the Fan District Association (FDA) to express our support for the proposed improvements to the Lee Circle on Monument Avenue at Allen Avenue. Our Board of Directors unanimously approved this position at our August 4, 2014 meeting.

However, there are two considerations that we would like to raise. In regards to the proposed epoxy coating that is to be applied to the surface of the circle, we question its necessity, given that the remaining infrastructure improvements should calm and slow traffic. Further, we have received comments from a number of individuals that there should be some form of pedestrian access to the center of the circle. The center of this circle is accessed by pedestrians on a regular basis and will continue to be after these improvements are made. Not providing for a safer means of pedestrian access to the center of the circle is negligent of pedestrian habits and their safety. We strongly request modifications to the proposal to accommodate such access.

Personally, I also hope that any improvements to the Allen Avenue median on the north side of the circle will be coordinated with the West Grace Street Association and the Friends of Allen Avenue Median to ensure that the improvements they have made to that median park will be protected from any damage.

Should you have any questions, please do not hesitate to contact me at (804) 332-1794 or president@fandistrict.org.

Sincerely,

Matthew P. Stanley
President

cc: FDA Board of Directors
Bill Gallasch, Monument Avenue Preservation Society
Alyse Marshall-Auernheimer, West Grace Street Association

5

Flynn, Thomas E. - DPW

From: Bill Gallasch [bill.gallasch@joynerfineproperties.com]
Sent: Friday, September 05, 2014 12:50 PM
To: Flynn, Thomas E. - DPW
Subject: RE: Monument-Allen Roundabout Final Rendering

Thanks Tom, I will pass it on to everybody.
 Bill

From: Flynn, Thomas E. - DPW [mailto:Thomas.Flynn@richmondgov.com]
Sent: Friday, September 05, 2014 9:45 AM
To: Samuels, Charles R. - Council Member; Pitts, Marianne G. - Council Chief of Staff Office; alicemmassie@gmail.com; Joe at Joseph F Yates Architects; bill.gallasch@joynerfineproperties.com
Cc: Jackson, James A. - DPW; Khara, M S. - DPW; Xu, Jian - DPW; Olinger, Mark A. - PDR; Hill, James C. - PDR; Brian Revels; Owen Peery
Subject: FW: Monument-Allen Roundabout Final Rendering

We are pleased to submit for your information the Monument/Allen intersection concept for traffic safety improvements to enhance traffic and pedestrian safety. The plan essentially provides more positive geometric control of traffic flow to reduce the higher speeds and, more importantly, provide better defined and safer pedestrian crossings. You may recall the genesis for this project was a pedestrian accident involving an Orchard House School student and her father walking home from school.

We have spent considerable time with school representatives and interested residents and neighborhood organizations, but particularly residents in the immediate vicinity of the intersection and representatives of MAPS. We also are awaiting a call from the Department of Historic Resources (owner of the Lee Circle) for their input. We will be meeting with Planning staff to discuss presenting the project for final design in October at CAR and CPC.

We trust the individuals most involved in this process to date will agree that the concept and eventual design are responsive to the historic requirements of Monument Avenue while still achieving the intended safety improvements. The design will be completed shortly and will clarify all the particulars - landscaping, irrigation, retained vs. new curb, etc. Also, we will not be including the high friction paving surface in the initial plan. The hope is the revisions proposed will negate the need for this additional treatment. We will monitor crash conditions, and reevaluate the high friction treatment issue if crash rates don't achieve an acceptable level.

Please feel free to distribute this to anyone you would like, and we will keep you involved in our next steps.
 Tom

Thomas E. Flynn, P.E., PTOE
 City Transportation Engineer
 Department of Public Works
 900 E. Broad Street, Room 707
 Richmond, VA 23219
 Phone: (804) 646-3435
 Fax: (804) 646-7807

From: Brian Revels [mailto:brevels@rkk.com]
Sent: Wednesday, September 03, 2014 4:47 PM
To: Flynn, Thomas E. - DPW; Xu, Jian - DPW
Cc: Owen Peery
Subject: Monument-Allen Roundabout Final Rendering

Tom,

9/17/2014

| FHWA REGION | STATE | FEDERAL PROJECT NUMBER | STATE PROJECT NUMBER |
|-------------|-------|------------------------|----------------------|
| 3 | VA. | | UPC 105653 |

CITY OF RICHMOND, VIRGINIA

DEPARTMENT OF PUBLIC WORKS

TRANSPORTATION ENGINEERING DIVISION



| REVISIONS | | |
|-----------|------|----------|
| NO. | DATE | COMMENTS |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| CITY OF RICHMOND APPROVED FOR CONSTRUCTION | |
|---|--------------------------------|
| DATE | SURVEYS SUPERINTENDENT |
| DATE | PROJECT MANAGER |
| DATE | MAINTENANCE ENGINEER |
| DATE | CITY TRANSPORTATION ENGINEER |
| DATE | CAPITAL PROJECTS ADMINISTRATOR |
| DATE | CITY ENGINEER |
| DATE | DIRECTOR OF PUBLIC WORKS |

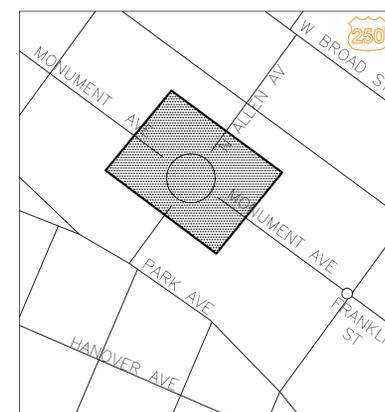
MONUMENT AVENUE & NORTH ALLEN AVENUE ROUNABOUT IMPROVEMENTS

UPC 105653

INDEX OF SHEETS

| <u>SHEET TITLE</u> | <u>SHEET NO.</u> |
|--|------------------|
| TITLE SHEET | 1 |
| QUANTITY SUMMARY SHEET AND PROJECT NOTES | 2 |
| PROJECT DETAILS | 2A(1) |
| VDOT INSERTABLE SHEET | 2A(2) |
| EXISTING CONDITIONS | 3 |
| PROPOSED INTERSECTION IMPROVEMENTS | 4 |
| PROPOSED SIGNING AND PAVEMENT MARKING PLAN | 5 |
| TRAFFIC CONTROL PLAN | 6 |

LOCATION MAP



PROJECT AREA

1" = 200'

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF RICHMOND OR VDOT.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE 2007 VDOT ROAD AND BRIDGE SPECIFICATIONS, 2008 VDOT ROAD AND BRIDGE STANDARDS, 2009 FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL, APPLICABLE CITY OF RICHMOND STANDARDS AND SPECIFICATIONS, AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC VERSION OF THE PLAN ASSEMBLY.

NO ADDITIONAL RIGHT OF WAY REQUIRED FOR THIS PROJECT.

CITY OF RICHMOND
DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA
CIP:
DRAWING NO: 0-XXXX

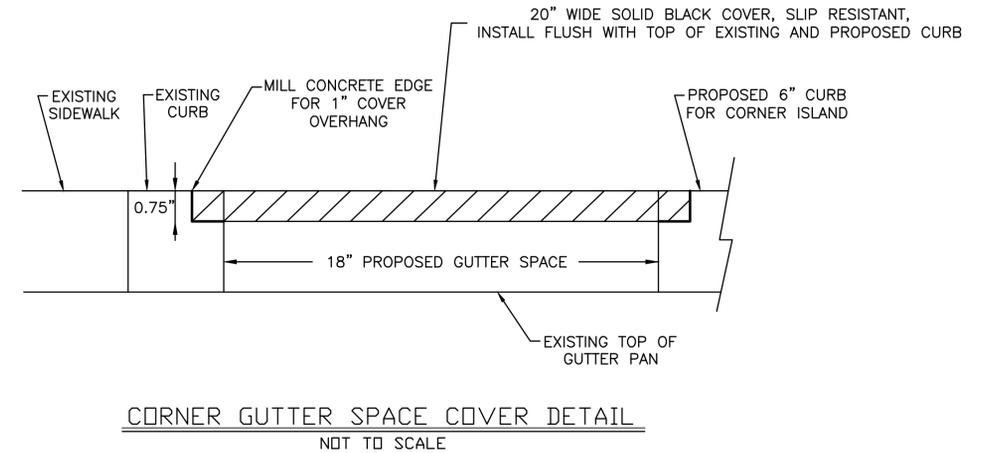
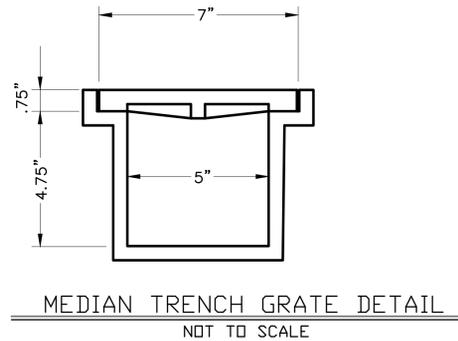
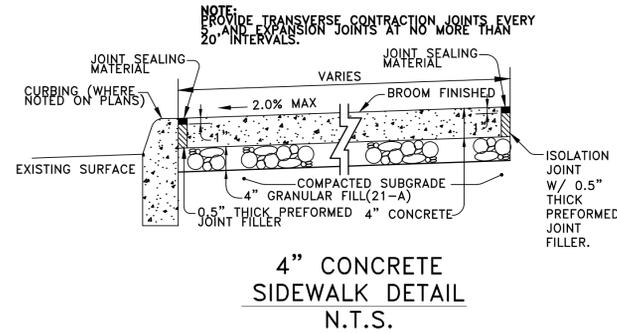
SEPTEMBER 2014



2100 EAST CARY STREET, SUITE 309
RICHMOND, VIRGINIA 23223
(P) 804 782-1903 (F) 804 782-2142

RUMMEL, KLEPPER & KAHL, LLP

*TRENCH TROUGH SPECIFICATIONS:
 NEENAH TYPE M TRENCH FRAME
 SPEC NO. R-4995-B2 LIGHT DUTY
 TYPE D (SOLID) COVER, BLACK COVER, SLIP RESISTANT
 *INFO TAKEN FROM NEENAH FOUNDRY CO.
 CATALOG, 15th EDITION



NOTES

- Lot dimensions in parentheses are from deed.
- Property owners correct as of _____, 20__
- Ordinance Number _____
- Adopted _____
- Accepted _____

REVISIONS

| LEGEND | |
|---|---|
| Existing Curb | Existing Curb Out Ramp |
| • Curb & Gutter | • Coping |
| • Sidewalk | • Alley Crossing/Driveway |
| • Basin | • Fire Hydrant |
| • Storm Sewer | • Edge of Pavement |
| • Sewer Manhole | • Fence |
| • Sanitary Sewer (new) | • Cornerstone |
| • Sanitary Sewer (new Man) | • Property Pin |
| • Gas Line | • Electric Line |
| • Electric Line | • Telephone/Telegraph |
| • Telephone/Telegraph | • TV Cable |
| • TV Cable | • Water Line |
| • Water Line | • Tree / Excl. Tree To Be Removed / Stamp |
| • Tree / Excl. Tree To Be Removed / Stamp | • Property Line |
| • Property Line | |



| Technical | Administrative |
|------------------------|-------------------------------|
| Surveys Superintendent | |
| Project Manager | Capital Project Administrator |
| Maintenance Engineer | City Engineer |
| City Traffic Engineer | Director of Public Works |

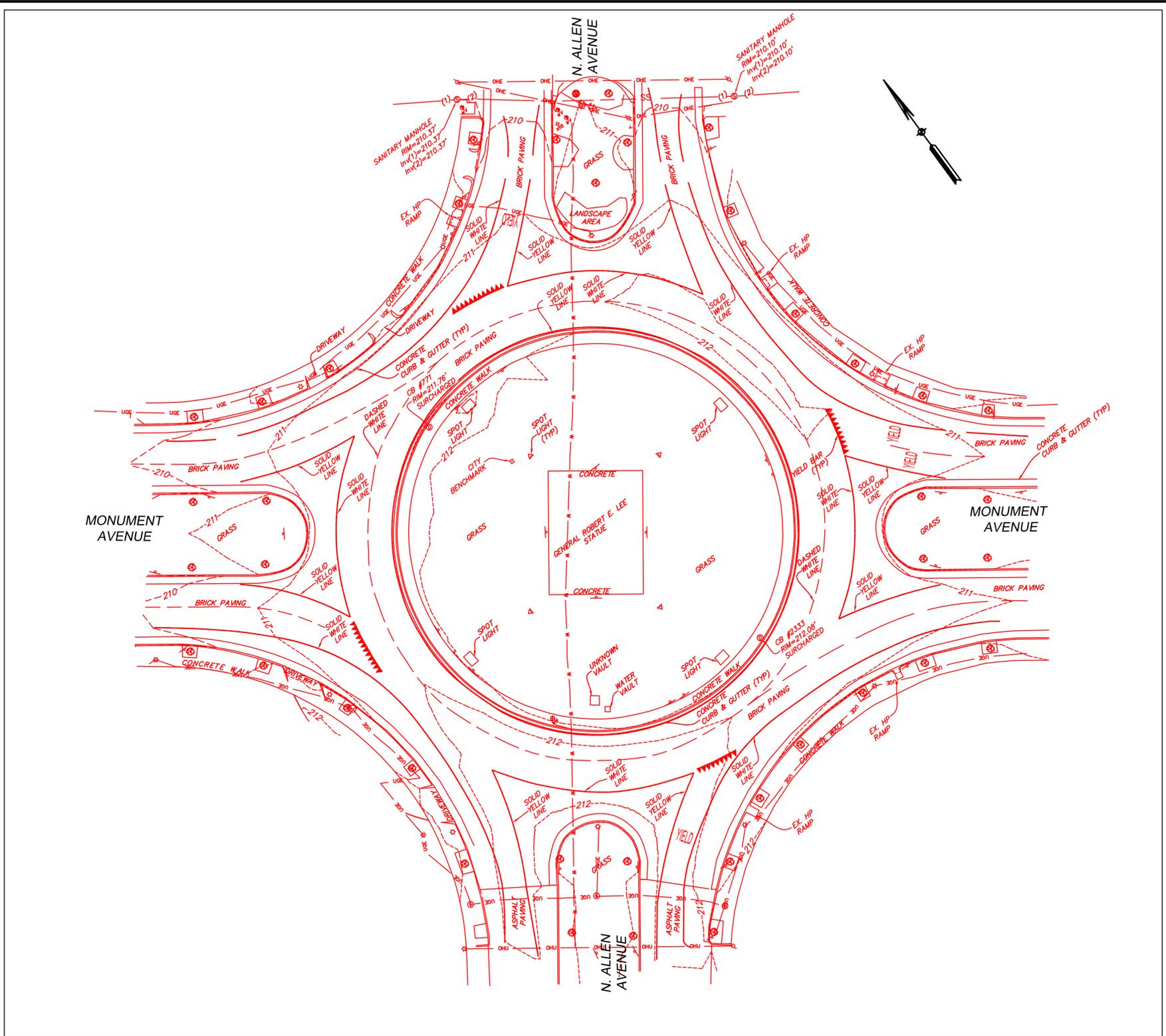
DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

RK&K *MONUMENT AVENUE & NORTH ALLEN AVENUE ROUNDABOUT IMPROVEMENTS PROJECT DETAILS*

Responsive People • Creative Solutions

AUTHORITY: CITY OF RICHMOND, DPW, PROJECT NO.: 0-XXXXX VDOT PROJECT NO.: UPC 105653

| | | | | | | |
|--------------------|--------------|-------------|----------|------------|------------------|-------------|
| DESIGN BY: BBovels | REVIEWED BY: | FIELD NOTES | SCALE | DATE | PROJECT | DRAWING NO. |
| DRAWN BY: AMann | | | NO SCALE | SEPT. 2014 | SHEET 2A(1) OF 6 | # 0-XXXXXX |
| CHECKED BY: OPeery | | | | | | |



NOTES

1. Lot dimensions in parentheses are from deed.
2. Property owners correct as of _____, 20__.
3. Ordinance Number _____.
4. Adopted _____.
5. Accepted _____.

REFERENCES

LEGEND

| | | | |
|---|-------|-------------------------|--|
| Existing Curb & Gutter | ===== | Existing Curb Out Ramp | |
| Sidewalk | ===== | Coping | |
| Basin | | Alley Crossing/Driveway | |
| Storm Sewer | ===== | Fire Hydrant | |
| Sewer Manhole | | Edge of Pavement | |
| Sanitary Sewer (new) | ----- | Fence | |
| Sanitary Sewer (new Man) | ----- | Conerstone | |
| Gas Line | ----- | Property Pin | |
| Electric Line | ----- | Utility Pole | |
| Telephone/Telegraph | ----- | Proposed Sewer Manhole | |
| TV Cable | ----- | Basin | |
| Water Line | ----- | Curb & Gutter | |
| Tree / Dist. Tree To Be Removed / Stump | | Asphalt | |
| Property Line | ----- | | |



| Technical | Administrative |
|------------------------|-------------------------------|
| Surveys Superintendent | |
| Project Manager | Capital Project Administrator |
| Maintenance Engineer | City Engineer |
| City Traffic Engineer | Director of Public Works |

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

RK&K
Responsive People • Creative Solutions

**MONUMENT AVENUE & NORTH ALLEN AVENUE
ROUNDBOUT IMPROVEMENTS
EXISTING CONDITIONS**

AUTHORITY: CITY OF RICHMOND, DPW, PROJECT NO.: 0-XXXXX VDOT PROJECT NO.: UPC 105653

| | | | | | | |
|--------------------|--------------|--------------|-----------------|------------------|-----------------------|-------------------------|
| DESIGN BY: BRevels | REVIEWED BY: | FIELD NOTES: | SCALE: 1" = 30' | DATE: SEPT. 2014 | PROJECT: SHEET 3 OF 6 | DRAWING NO.: # 0-XXXXXX |
| DRAWN BY: Alkann | | | | | | |
| CHECKED BY: OPeery | | | | | | |

| POINT | NORTHING | EASTING | RADIUS (R) |
|-------|------------|-------------|------------|
| N1 | 3727045.42 | 11784520.92 | LINEAR 22' |
| N2 | 3727024.49 | 11784509.01 | |
| N3 | 3727021.10 | 11784507.46 | 340' |
| N4 | 3726952.51 | 11784484.86 | 342' |
| N5 | 3726951.41 | 11784479.49 | 3' |
| N6 | 3726981.01 | 11784451.91 | 142' |
| N7 | 3727001.01 | 11784416.10 | 2' |
| N8 | 3727004.56 | 11784415.77 | 235' |
| N9 | 3727064.70 | 11784480.36 | |

| POINT | NORTHING | EASTING | RADIUS (R) |
|-------|------------|-------------|-------------|
| E1 | 3726738.16 | 11784504.35 | LINEAR 9.5' |
| E2 | 3726742.99 | 11784496.14 | |
| E3 | 3726747.73 | 11784486.44 | LINEAR 16' |
| E4 | 3726753.49 | 11784471.28 | |
| E5 | 3726760.99 | 11784440.15 | 126' |
| E6 | 3726766.40 | 11784438.70 | 3' |
| E7 | 3726792.43 | 11784465.75 | 127' |
| E8 | 3726826.22 | 11784483.35 | 127' |
| E9 | 3726826.48 | 11784487.00 | 2' |
| E10 | 3726770.46 | 11784534.85 | 165' |

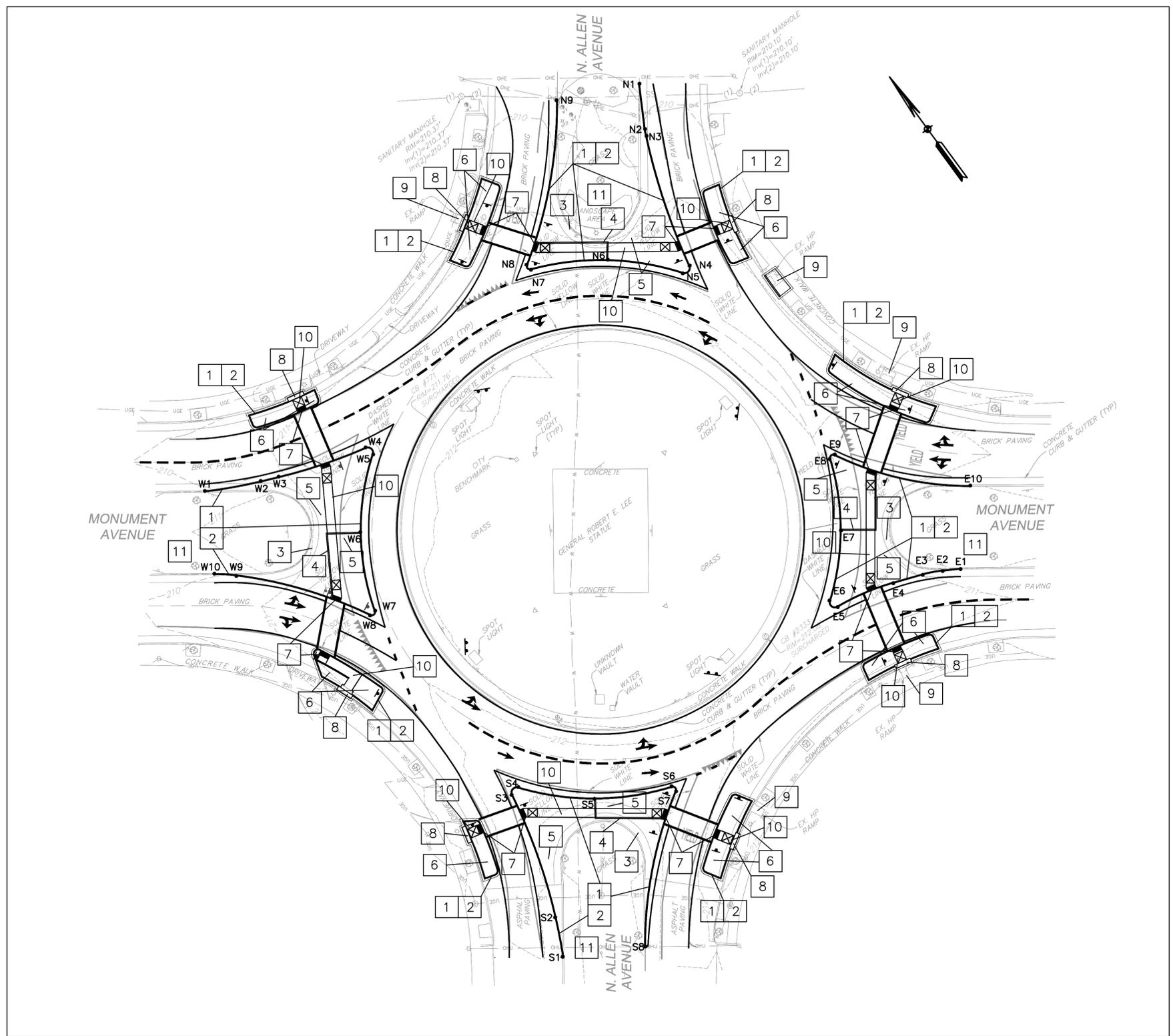
| POINT | NORTHING | EASTING | RADIUS (R) |
|-------|------------|-------------|------------|
| S1 | 3726700.04 | 11784212.88 | 300' |
| S2 | 3726719.06 | 11784222.05 | 300' |
| S3 | 3726784.74 | 11784242.17 | 3' |
| S4 | 3726785.98 | 11784247.52 | |
| S5 | 3726756.82 | 11784276.14 | 141' |
| S6 | 3726737.75 | 11784312.92 | 2' |
| S7 | 3726734.15 | 11784313.27 | 212' |
| S8 | 3726678.50 | 11784251.58 | |

| POINT | NORTHING | EASTING | RADIUS (R) |
|-------|------------|-------------|------------|
| W1 | 3727010.66 | 11784207.61 | 275' |
| W2 | 3726997.19 | 11784234.50 | LINEAR 10' |
| W3 | 3726993.37 | 11784243.45 | |
| W4 | 3726978.19 | 11784289.67 | 282' |
| W5 | 3726972.82 | 11784290.71 | 3' |
| W6 | 3726943.98 | 11784260.68 | 127' |
| W7 | 3726906.01 | 11784242.28 | 2' |
| W8 | 3726905.66 | 11784238.60 | 232' |
| W9 | 3726964.72 | 11784194.22 | |
| W10 | 3726972.08 | 11784185.42 | 80' |

SURVEY SOURCE & DATUM: HORIZONTAL (NAD '83), VERTICAL (NAVD '88).

CONSTRUCTION NOTES

- 1 SAWCUT 6" DEPTH. EXCAVATE AND SALVAGE EXISTING COBBLESTONE BLOCK. CONTRACTOR TO COORDINATE WITH CITY PROJECT MANAGER REGARDING WHERE TO TRANSPORT SALVAGED COBBLESTONE BLOCK MATERIAL.
- 2 INSTALL CONCRETE CURB (CG-2, 6" HEIGHT), COMPLETE IN PLACE. MATCH HEIGHT FOR TOP OF PROPOSED CURB TO ADJACENT EXISTING CURB HEIGHT.
- 3 RETAIN IN PLACE EXISTING CURB AND GUTTER SECTION AROUND EXISTING CENTER MEDIAN. TOPSOIL TO COVER EXISTING GUTTER PAN. EXISTING TOP OF CURB TO REMAIN EXPOSED AND BE AT-GRADE WITH PROPOSED GRASS SURFACE.
- 4 INSTALL MEDIAN TRENCH FRAME WITH BLACK SOLID COVER. BOTH ENDS OF TRENCH ARE OPEN. SEE DETAIL ON SHEET 2A(1).
- 5 INSTALL TOPSOIL TO LESS THAN 1" BELOW TOP OF PROPOSED CURB FOR MEDIAN EXTENSIONS. GRADE AND PLANT GRASS SEED. LIME AND FERTILIZE SEEDED AREAS.
- 6 INSTALL TOPSOIL TO LESS THAN 1" BELOW TOP OF PROPOSED CURB FOR CORNER EXTENSIONS. GRADE AND PLANT LIRIOPE (BIG BLUE) WITH 2" DEPTH OF MULCH.
- 7 INSTALL ADA-COMPLIANT CG-12 CURB RAMP WITH 2' WIDE DETECTABLE WARNING SURFACE. DETECTABLE WARNING STRIP COLOR TO BE COLONIAL RED (FEDERAL COLOR NO. 20109).
- 8 INSTALL 7' LONG TRENCH COVER (BLACK) OVER 18" GUTTER SPACE BETWEEN EXISTING CORNER CURB AND PROPOSED CORNER ISLAND. SEE DETAIL ON SHEET 2A(1).
- 9 DEMOLISH EXISTING CURB RAMP. INSTALL 4" CONCRETE SIDEWALK AND 6" CURB, IN PLACE.
- 10 INSTALL 5' WIDE, 4" CONCRETE SIDEWALK.
- 11 INSTALL IRRIGATION SPRINKLER LINE AND SPRINKLER HEAD. TIE INTO EXISTING SPRINKLER SYSTEM ON MEDIAN, FOR WEST, NORTH, AND EAST MEDIANS. FOR SOUTH MEDIAN, TERMINATE AT PROJECT LIMIT, BUT ALLOW FOR FUTURE EXTENSION OF SPRINKLER SYSTEM TO SOUTH.



| NOTES | REVISIONS |
|---|-----------|
| 1. Lot dimensions in parentheses are from deed. | |
| 2. Property owners correct as of _____, 20__. | |
| 3. Ordinance Number _____ | |
| 4. Adopted _____ | |
| 5. Accepted _____ | |

| Existing Curb | Existing Sidewalk | Existing Storm Sewer | Existing Sanitary Sewer | Existing Gas Line | Existing Electric Line | Existing Telephone/Telegraph | Existing Water Line | Existing Tree / Sign. Tree To Be Removed / Stump | Existing Property Line |
|---------------|-------------------|----------------------|-------------------------|-------------------|------------------------|------------------------------|---------------------|--|------------------------|
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

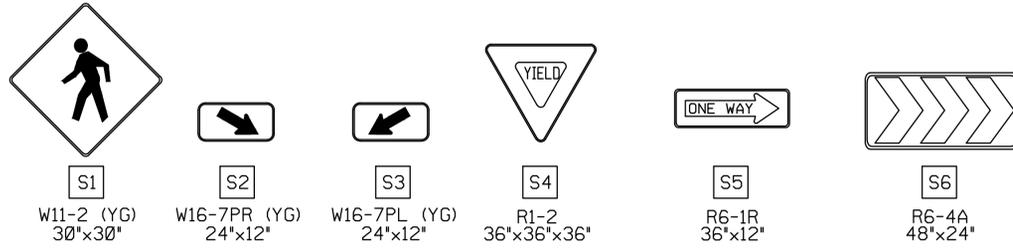


| Technical | Administrative |
|------------------------|-------------------------------|
| Surveys Superintendent | |
| Project Manager | Capital Project Administrator |
| Maintenance Engineer | City Engineer |
| City Traffic Engineer | Director of Public Works |

**MONUMENT AVENUE & NORTH ALLEN AVENUE
ROUNDAABOUT IMPROVEMENTS
PROPOSED INTERSECTION IMPROVEMENTS**

AUTHORITY: CITY OF RICHMOND, DPW, PROJECT NO.: 0-XXXXX VDOT PROJECT NO.: UPC 105653
 DEPARTMENT OF PUBLIC WORKS, RICHMOND, VIRGINIA
 DESIGN BY: [Name] DRAWN BY: [Name] CHECKED BY: [Name] REVIEWED BY: [Name] FIELD NOTES: [Name] SCALE: 1" = 30' DATE: SEPT. 2014 PROJECT: SHEET 4 OF 6 DRAWING NO.: # 0-XXXXX

PROPOSED SIGNING LEGEND

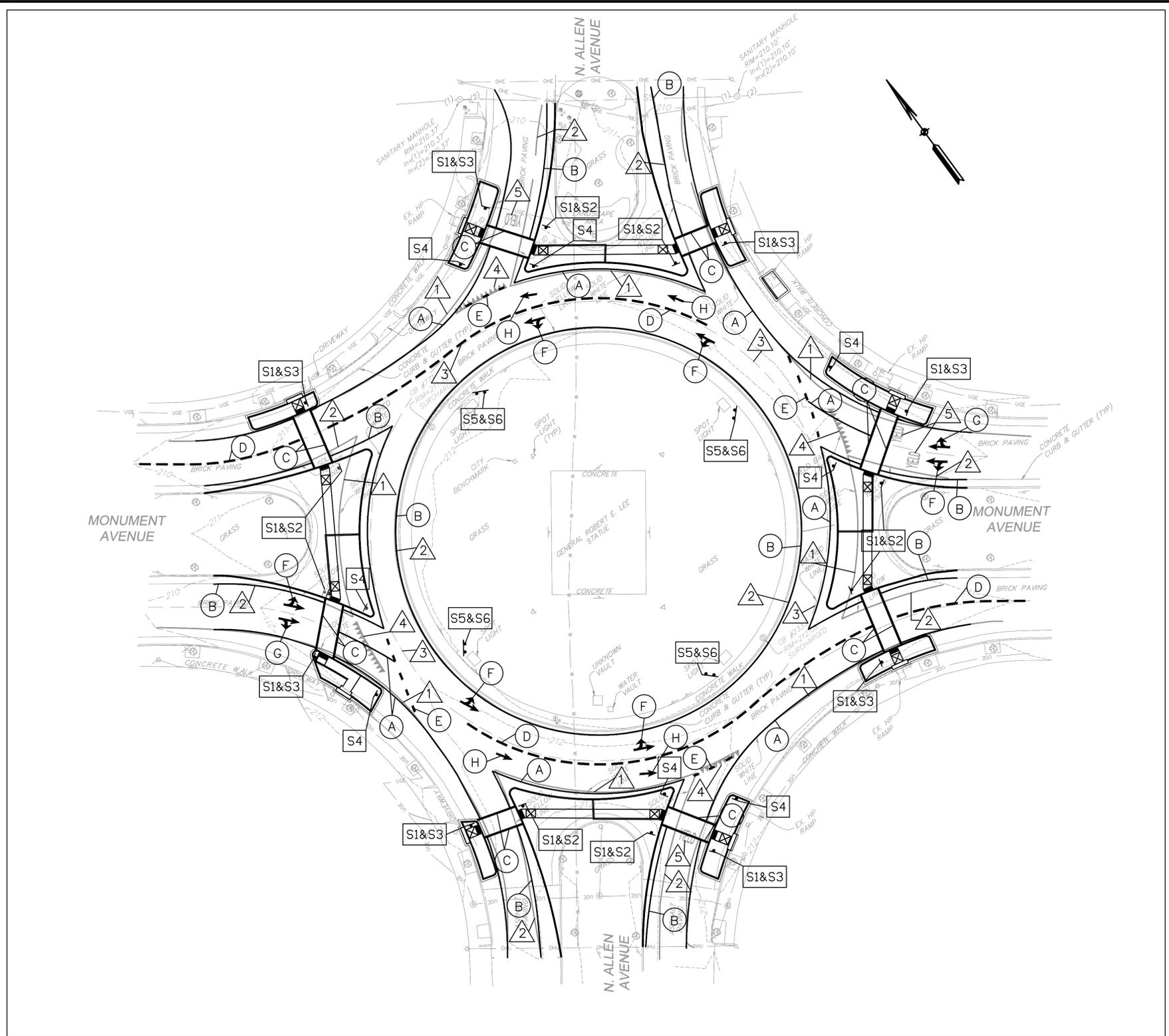


EXISTING PAVEMENT MARKING LEGEND
(ALL EXISTING MARKINGS TO BE FULLY ERADICATED)

- 1 4" SOLID WHITE LINE
- 2 4" SOLID YELLOW LINE
- 3 4" DASHED WHITE LINE
- 4 YIELD BAR "SHARK TEETH" WHITE
- 5 PAVEMENT MESSAGE MARKING WHITE "YIELD" TEXT

PROPOSED PAVEMENT MARKING LEGEND
(ALL VDOT TYPE B, CLASS 1 THERMOPLASTIC)

- A WHITE, 4" WIDTH, LANE EDGE LINE
- B YELLOW, 4" WIDTH, LANE EDGE LINE
- C WHITE, 12" WIDTH, CROSSWALK EDGE LINE
- D WHITE, 12" WIDTH, DASHED LINE [6' LINE WITH 3' SPACE]
- E WHITE, 12" WIDTH, YIELD LINE [3' LINE WITH 6' SPACE]
- F WHITE, PAVEMENT MESSAGE MARKING ELONGATED ARROW-DOUBLE [LEFT AND THROUGH]
- G WHITE, PAVEMENT MESSAGE MARKING ELONGATED ARROW-DOUBLE [THROUGH AND RIGHT]
- H WHITE, PAVEMENT MESSAGE MARKING ELONGATED ARROW-SINGLE [THROUGH]



NOTES

- Lot dimensions in parentheses are from deed.
- Property owners correct as of _____, 20__.
- Ordinance Number _____.
- Adopted _____.
- Accepted _____.

REFERENCES

LEGEND

| | | |
|---|-------------------------|-------------------------|
| Existing Curb & Gutter | Existing Curb Cut Ramp | Proposed Conc. Sidewalk |
| Sidewalk | Coping | Brick Sidewalk |
| Basin | Alley Crossing/Driveway | Castings: Water Valve |
| Storm Sewer | Fire Hydrant | Water Meter |
| Sewer Manhole | Edge of Pavement | Gas Drip |
| Sanitary Sewer (new) | Fence | Gas Valve |
| Sanitary Sewer (new line) | Conerstone | Telephone Manhole |
| Gas Line | Property Pin | Electric Manhole |
| Electric Line | Utility Pole | Proposed Curb Out Ramp |
| Telephone/Telegraph | Manhole | Decorative Light |
| TV Cable | Basin | Conduit |
| Water Line | Curb & Gutter | Conduit (Conc. Encased) |
| Tree / Basal Tree To Be Removed / Stamp | Asphalt | Retaining Wall |



| Technical | Administrative |
|------------------------|-------------------------------|
| Surveys Superintendent | |
| Project Manager | Capital Project Administrator |
| Maintenance Engineer | City Engineer |
| City Traffic Engineer | Director of Public Works |

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

RK&K Responsive People - Creative Solutions

MONUMENT AVENUE & NORTH ALLEN AVENUE ROUNDABOUT IMPROVEMENTS
PROPOSED SIGNING AND PAVEMENT MARKING PLAN

AUTHORITY: CITY OF RICHMOND, DPW, PROJECT NO.: 0-XXXXX VDOT PROJECT NO.: UPC 105653

| | | | | | |
|--------------------|--------------------|-----------------|------------------|-----------------------|-------------------------|
| DESIGN BY: BRevels | REVIEWED BY: ALAnn | SCALE: 1" = 30' | DATE: SEPT. 2014 | PROJECT: SHEET 5 OF 6 | DRAWING NO.: # 0-XXXXXX |
| DRAWN BY: OPeery | CHECKED BY: | | | | |

R-4995 – R-4996

TYPE M TRENCH FRAME WITH SOLID OR GRATED COVER

Cast Iron Trench Assemblies—Light or Heavy Duty—For Use in Sidewalks, Driveways, Garages, Loading Docks, etc.

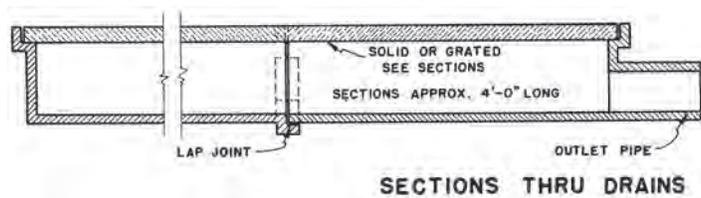
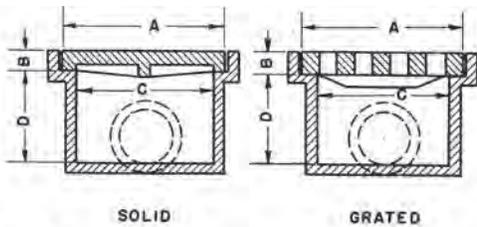
Read Carefully Before Ordering

Specify:

1. Complete catalog number.
2. Light or heavy duty.
3. Overall length of cover required.
4. Lid solid, flat grated, or diagonally barred convex grate.
5. Location of outlet, side, bottom or end (give dimensional location and pipe size).
6. Whether one end or both ends are to be open or closed.



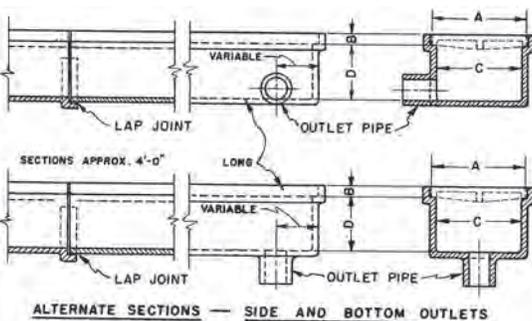
Illustrating Type M frame with grated cover. Standard with 4-inch outside caulk outlet. Can be equipped for inside caulk if specified.



Trench covers are used over areas requiring long drainage assemblies. Can be supplied in a variety of sizes and lengths to meet special needs. For trenches of irregular pattern, product engineering can provide layout drawings.

Standard 4-inch outlet at end of drain. Special size outlets are available. Provided with side and bottom outlets optional and furnished only when specified.

Sections: Thru Drains, Type M



Dimensions in inches

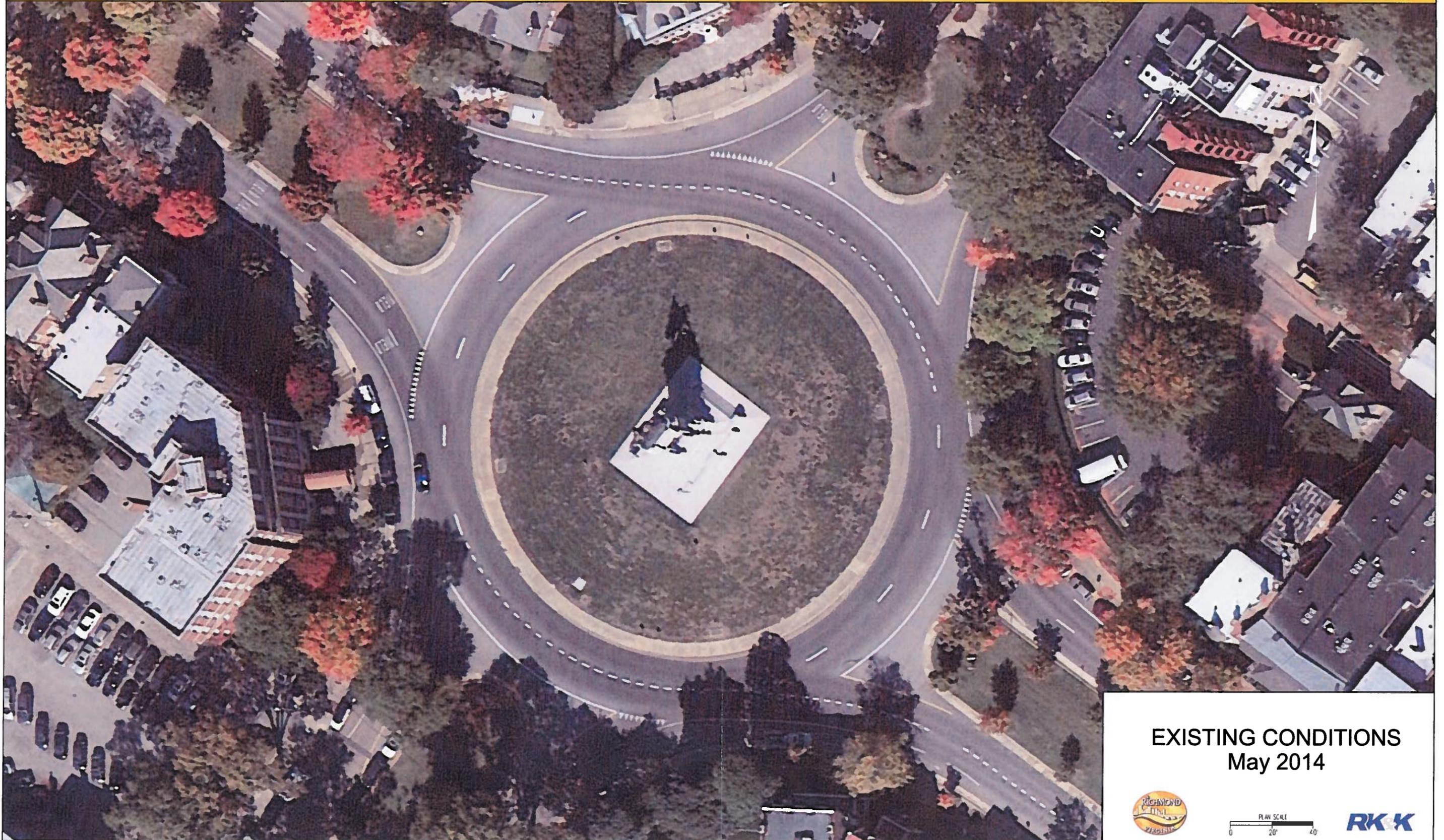
| Catalog No. | Description | A | B | C | D | Length |
|----------------------------------|-------------------|-----|----|----|----|------------|
| Standard Sizes—Light Duty | | | | | | |
| R-4995-A1** | With grated cover | 11½ | ¾ | 10 | 6¾ | As ordered |
| R-4995-A2* | With grated cover | 7 | ¾ | 5 | 4¾ | As ordered |
| R-4995-B1 | With solid cover | 11½ | ¾ | 10 | 6¾ | As ordered |
| R-4995-B2 | With solid cover | 7 | ¾ | 5 | 4¾ | As ordered |
| Standard Sizes—Heavy Duty | | | | | | |
| R-4996-A1** | With grated cover | 11½ | 1½ | 10 | 6 | As ordered |
| R-4996-A2* | With grated cover | 7 | 1¼ | 5 | 4¾ | As ordered |
| R-4996-B1 | With solid cover | 11½ | 1½ | 10 | 6 | As ordered |
| R-4996-B2 | With solid cover | 7 | 1¼ | 5 | 4¾ | As ordered |

Above Standard Frames made in 4 ft. sections, covers in 2 ft. lengths.

*Available with Type B grate only.

**Also available with Type P grate.

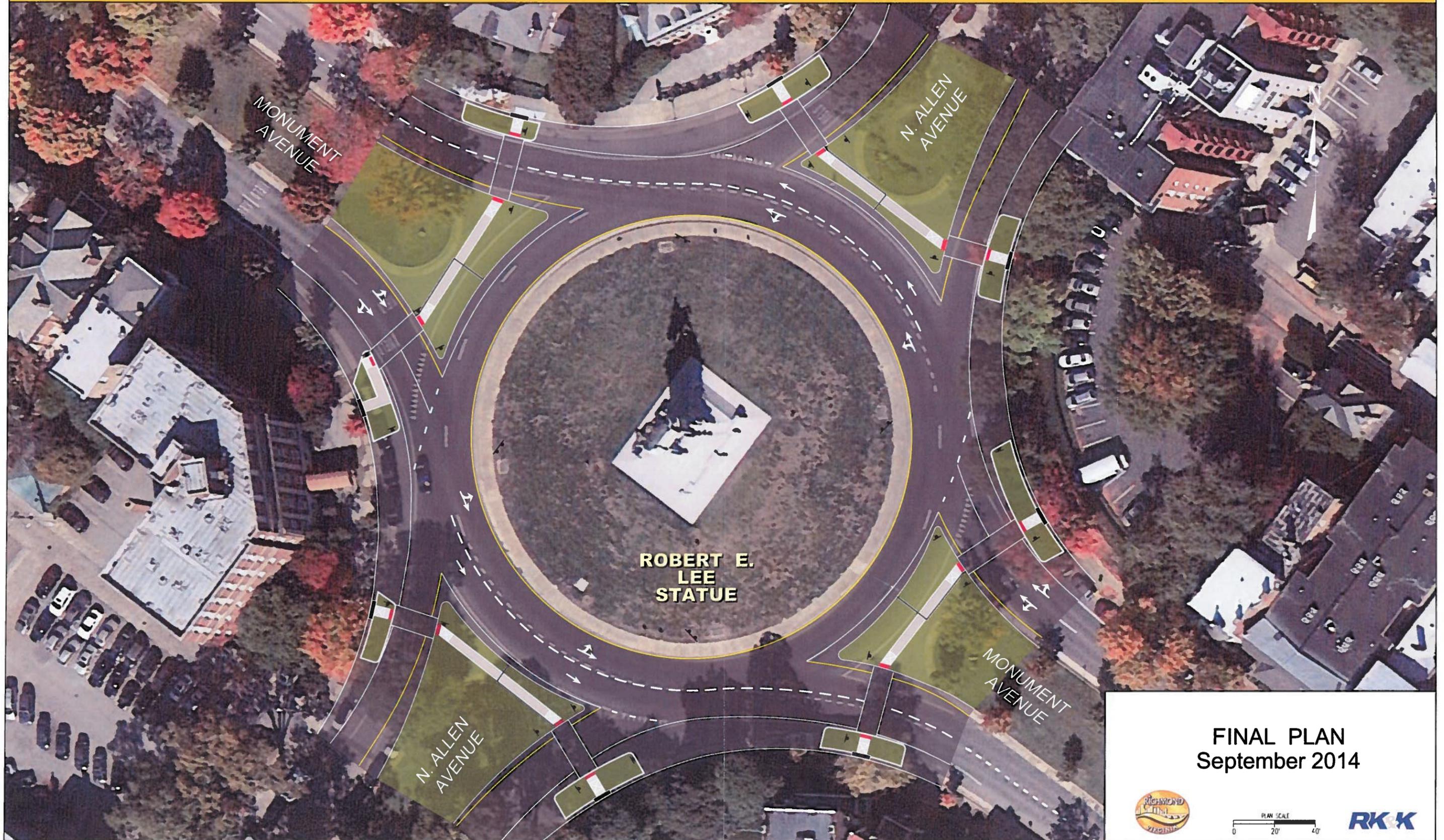
LEE CIRCLE SAFETY MODIFICATIONS PROJECT



EXISTING CONDITIONS
May 2014



LEE CIRCLE SAFETY MODIFICATIONS PROJECT



FINAL PLAN
September 2014

