



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: _____

Project Address: _____

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

Applicant Information

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

Name: _____ Email: _____

City Agency: _____ Phone: _____

Address: _____

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.

IDLEWOOD AVENUE MODERN ROUNDABOUT PROJECT

Project Narrative

The intersection of Idlewood Avenue, Grayland Avenue, and the Downtown Expressway off-ramp (VA-195) is identified for reconstruction as a modern roundabout. Along with the proposed roundabout, Idlewood Avenue is to be converted from one-way to two-way travel between S. Harrison Street and S. Cherry Street. A byproduct of these improvements is a partial removal of Grayland Avenue between S. Harrison Street and the Downtown Expressway off-ramp. This project increases traffic efficiency within the Randolph and Oregon Hill areas by allowing two-way travel between S. Harrison Street and S. Cherry Street along Idlewood Avenue. Furthermore, roadway network connectivity is increased by the addition of a right-turn movement from the Downtown Expressway off-ramp to Idlewood Avenue west bound which provides a shorter travel distance to S. Harrison Street in comparison to existing conditions. This project will also improve safety and reduce travel speeds. The project is designed to enable pedestrians to safely walk along from S. Cherry Street to S. Harrison Street by connecting existing sidewalks and adding cross walks where feasible.

The current engineer's opinion of probable construction cost is \$600,000. The project is funded by multiple sources. Virginia Commonwealth University will provide \$250,000, FY2014 Revenue Sharing – a 50-50 split between the Commonwealth of Virginia and the City of Richmond – will provide \$200,000, and finally Traffic Calming CIP2014 will provide \$200,000.

In vicinity of the study area is Virginia Commonwealth University (VCU) – Monroe Park Campus, located to the north of the Downtown Expressway and accessible via S. Harrison Street and S. Cherry Street. In addition, the VCU Cary Street Sports Field and adjacent gymnasium and tennis courts and the Altria Theater attract residents and visitors to the area. Located to the south of Idlewood Avenue are historic Hollywood Cemetery, Clark Springs Elementary School, and Open High School.

Urban Design Committee recommends:

UDC No. 2014-30

(1) That the applicant investigates all traffic calming options, including textured pavement and directional deflections, in order to reduce the speed of vehicles in the roundabout.

Prior to presenting the design to the Urban Design Committee (UDC) for preliminary location, character and extent review, Kimley-Horn and the City developed multiple concepts of the roundabout that introduced necessary traffic calming options and directional deflections in order to reduce the speed of vehicles entering the roundabout from each leg. The design geometry of the roundabout presented at the preliminary review and the one submitted for the final review are essentially the same, since the necessary tweaks and changes were incorporated prior to preliminary submission. Further, the geometry has been modeled both in traffic simulation software and mathematical models simulating the fastest vehicle paths to verify that speeds on each leg and within the roundabout are consistent and within Federal Highway Administration requirements.

Kimley-Horn revised the design of the central island truck apron to include a three inch (3") curb to reduce smaller vehicles (i.e. passenger vehicles) from utilizing the truck apron for roundabout operations.

(2) That the applicant narrows the apron and asphalt travel way around the central island to the smallest possible dimensions.

Prior to presenting the design to the Urban Design Committee (UDC) for preliminary location, character and extent review, Kimley-Horn and the City developed multiple concepts of the roundabout that minimized the apron, central island and circulatory roadway to that required and allowed by the Federal Highway Administration Roundabout Design Guide. The widths of the apron and circulatory roadway are essentially the same as the other modern urban roundabouts in the City such as at 25th & M, Admiral and Lombardy, and Highland Park. The widths of the apron and circulatory roadway were not changed from the preliminary submittal.

(3) That the applicant considers providing cobblestones in the apron instead of the proposed concrete.

The City does not have a sufficient supply of cobblestone available for installation on the truck apron, and still meet other anticipated City needs for cobblestones. Purchase and installation of cobblestone from an outside source would be prohibitively expensive given the constrained project budget. Kimley-Horn will add to the plans and the specifications to require the concrete apron to be texturized and/or colorized to appear like cobblestones. Please see the attached photograph for an example already within the City.

(4) That the applicant consider providing larger trees in the central island.

Kimley-Horn added larger trees in the central island.

(5) That the applicant uses a more native plant palette, and that the invasive Barberry shrub is replaced with a native equivalent.

Kimley-Horn changed out the Barberry shrub for an Otto Luyken, which is not a native plant, but is not considered invasive. Kimley-Horn is willing to consider utilizing a Distylium 'Blue Cascade' upon suggestion by the UDC, but neither is considered native.

(6) That the applicant provides evidence that the proposed landscaping plans have been reviewed and approved by the Department of Public Works Urban Forestry and Grounds Maintenance divisions.

The Urban Forestry Division has reviewed the landscaping plans, and DPW will provide formal approval at a later date.

(7) That the applicant considers providing irrigation to the central island to improve the survival rate of the proposed landscaping.

Irrigation will be included in the plan as a 'design-build' (i.e. designed and constructed by the Contractor) component of the plan and bid as a bid alternate for the plantings in the central island only. If the project budget can support the cost of the irrigation system, then it may be included in the project. In either case, the plants will be warranted for up to a one year by the contractor.

(8) That the crosswalk from Grayland Avenue across Idlewood Avenue contain ladder-style markings consistent with the other crosswalk.

Kimley - Horn added ladder-style crosswalk from Grayland Avenue across Idlewood Avenue.

(9) That the applicant removes the street surface on Grayland Avenue to the east of the "hammer head" and replaces it with grass and curb.

As discussed during the preliminary review, the plans show Grayland Avenue being left in-place up to the proposed gravel t-turn around west of the roundabout. No vehicular access to Grayland Avenue from Idlewood Avenue will remain once the roundabout is constructed.

Idlewood Avenue project's bid will include a bid alternate for the complete removal and closure of Grayland Avenue in-case the project budget could support the extra cost. However, the City has not fully coordinated and built consensus on the removal of Grayland Avenue between the Oregon Hill and Randolph Communities, Planning and Zoning and Council. This coordination will continue by DPW.

(10) That the sidewalks from S. Cherry Street to S. Harrison Street be cleaned up and re-established as part of the roundabout installation project.

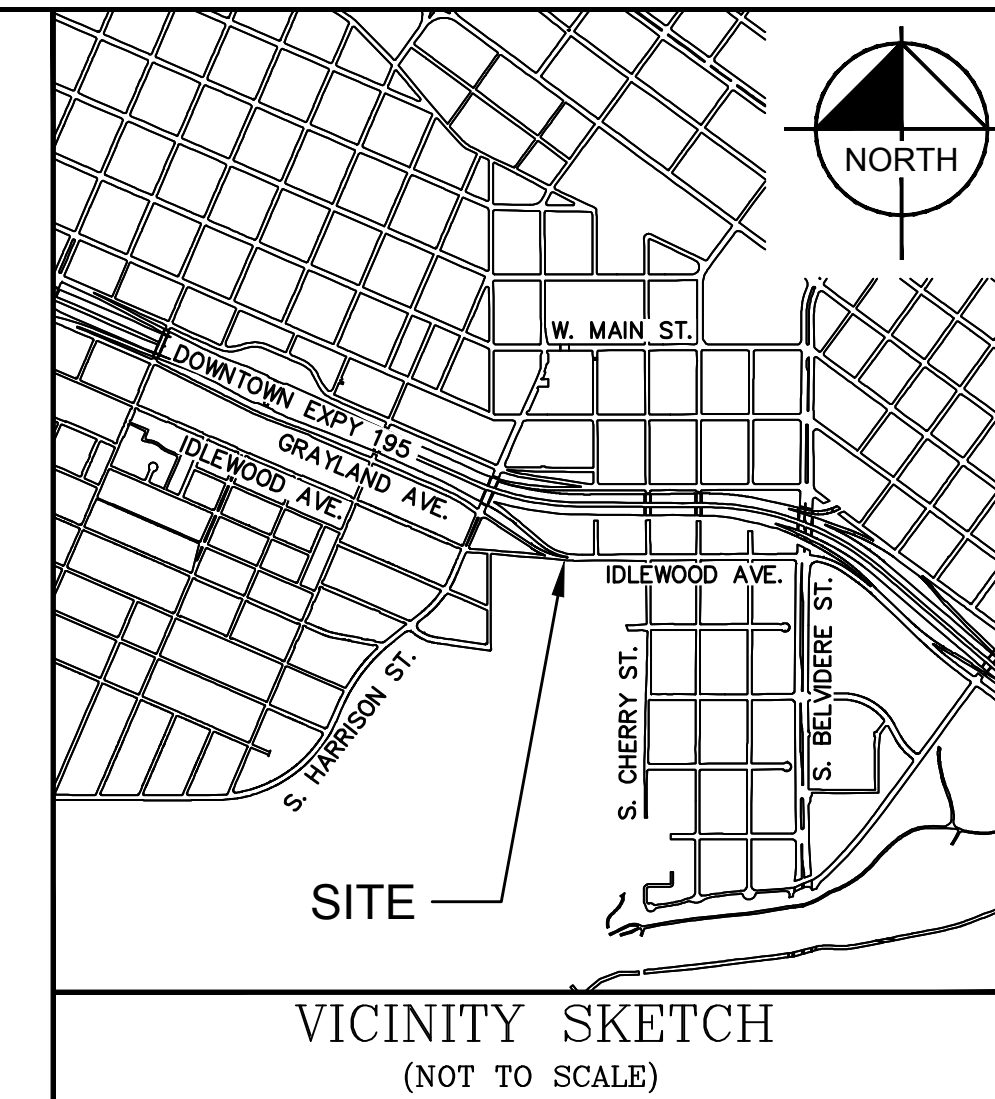
Will do.

(11) That the final plans include a lighting plan.

Proposed lights to be installed by DPU are now shown on Sheet 3 identified as follows:
Incidental (triangle) # 12 – New DPU Light location
Incidental (triangle) # 10 – Existing RMA Light to be removed and not replaced
Incidental (triangle) # 7 – Existing RMA Light to be removed and replaced with DPU light

CITY OF RICHMOND, VIRGINIA

DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING



VICINITY SKETCH
(NOT TO SCALE)

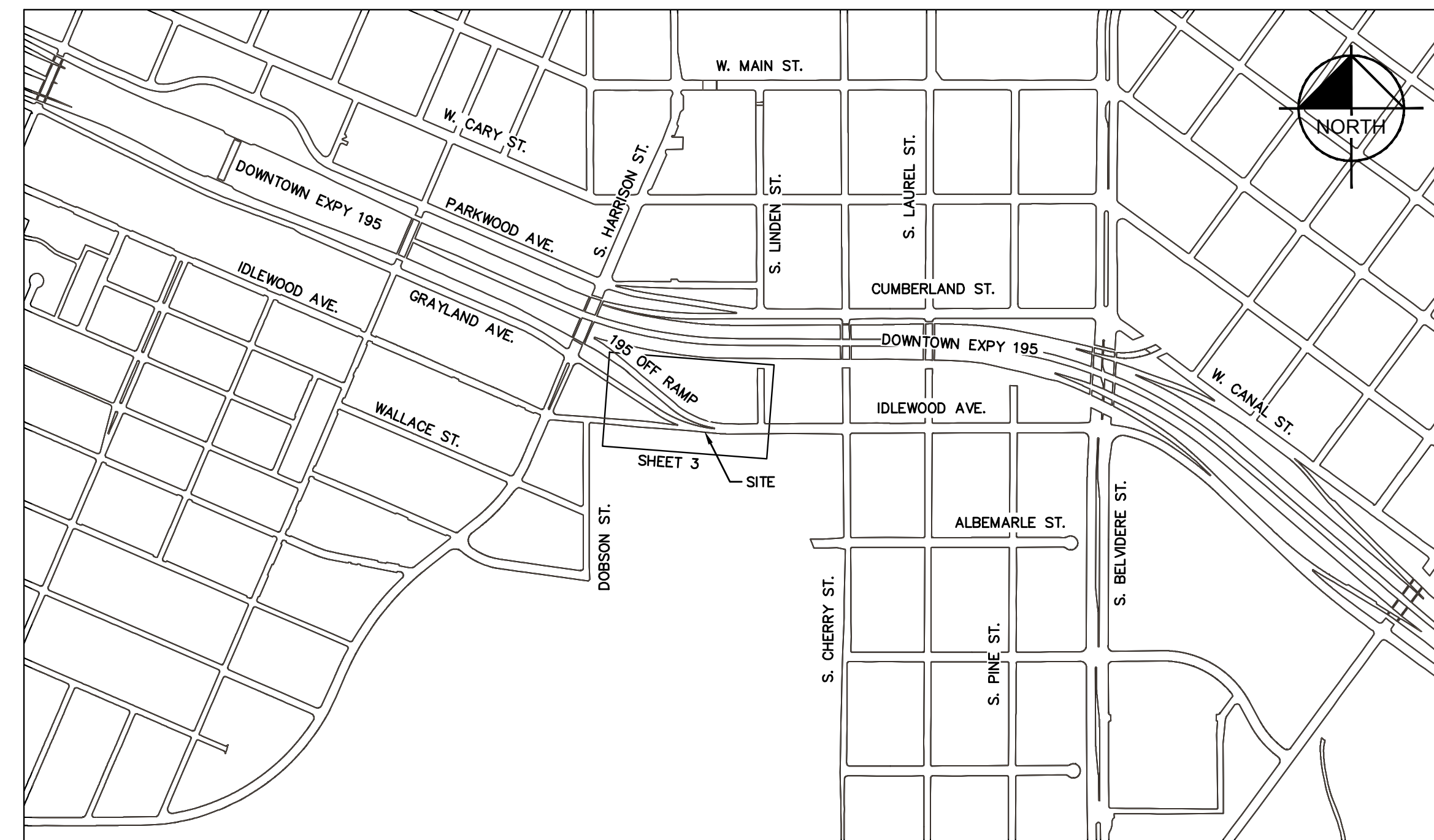
IDLEWOOD AVENUE ROUNDABOUT PROJECT

VDOT PROJECT NO. - U000-127-R50, PE-101, RW-201, C-501

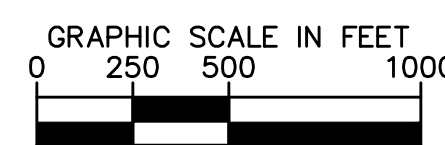
VDOT UPC - 104279

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
IDLEWOOD AVENUE	
URBAN MINOR COLLECTOR GS-7 - UNDIVIDED - ROLLING	
Fr: INT WITH HARRISON AVENUE To: INT WITH CHERRY STREET	
ADT (2014)	7,300 VPD
DHV	657 VPH
D (%) (design hour)	61%
T (%) (design hour)	1%
V (MPH)	30 MPH (POSTED SPEED LIMIT 25 MPH)

INDEX OF SHEETS	
Sheet Number	Sheet Title
1	TITLE SHEET
1A(1)	SURVEY DATA - ALIGNMENT DATA
1A(2)	SURVEY DATA - EXISTING SURVEY DATA
1B	CONSTRUCTION ALIGNMENT DATA SHEET
1C	RIGHT-OF-WAY DATA SHEET
1D	TRAFFIC MANAGEMENT PLAN
1E	VIRGINIA WORK AREA PROTECTION
1F	MAINTENANCE OF TRAFFIC - STAGE 1
1G	MAINTENANCE OF TRAFFIC - STAGE 2
1H	MAINTENANCE OF TRAFFIC - STAGE 2 - DETOUR
1J	MAINTENANCE OF TRAFFIC - STAGE 3
2	GENERAL NOTES
2A(1)	TYPICAL SECTIONS
2A(2)	TYPICAL SECTIONS
2B	TOP OF CURB ELEVATION DETAILS
2C	CURB RADII
3	PLAN SHEET - IDLEWOOD AVE. STA. 104+02.96 TO STA. 108+64.24
3A	IDLEWOOD, RAMP & DRIVEWAY PROFILE
3B	STORM SEWER PROFILES
3C	EROSION AND SEDIMENT CONTROL
4	LANDSCAPE PLAN
5	LANDSCAPE DETAILS
6	SIGNING AND PAVEMENT MARKING
7	SIGNING AND PAVEMENT MARKING
8	SIGNING AND PAVEMENT MARKING
XS-1	CROSS SECTIONS - IDLEWOOD AVE
XS-2	CROSS SECTIONS - IDLEWOOD AVE
XS-3	CROSS SECTIONS - I-95 OFF RAMP



VICINITY MAP



DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF RICHMOND DESIGN AND CONSTRUCTION STANDARDS MANUAL, 2007 VDOT ROAD AND BRIDGE SPECIFICATIONS, 2008 VDOT ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL, AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE PAPER VERSION OF THE PLAN ASSEMBLY INCLUDING ALL REVISIONS.

THE ORIGINAL SIGNED/APPROVED TITLE SHEET, INCLUDING ORIGINAL SIGNATURES, IS FILED IN THE CITY OF RICHMOND DEPARTMENT OF PUBLIC WORKS OFFICE.

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

CITY OF RICHMOND APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	SURVEYS SUPERINTENDENT
DATE	PROJECT MANAGER
DATE	CAPITAL PROJECTS ADMINISTRATOR
DATE	CITY ENGINEER
DATE	DIRECTOR OF PUBLIC WORKS

REVISIONS		
NO.	DATE	COMMENTS

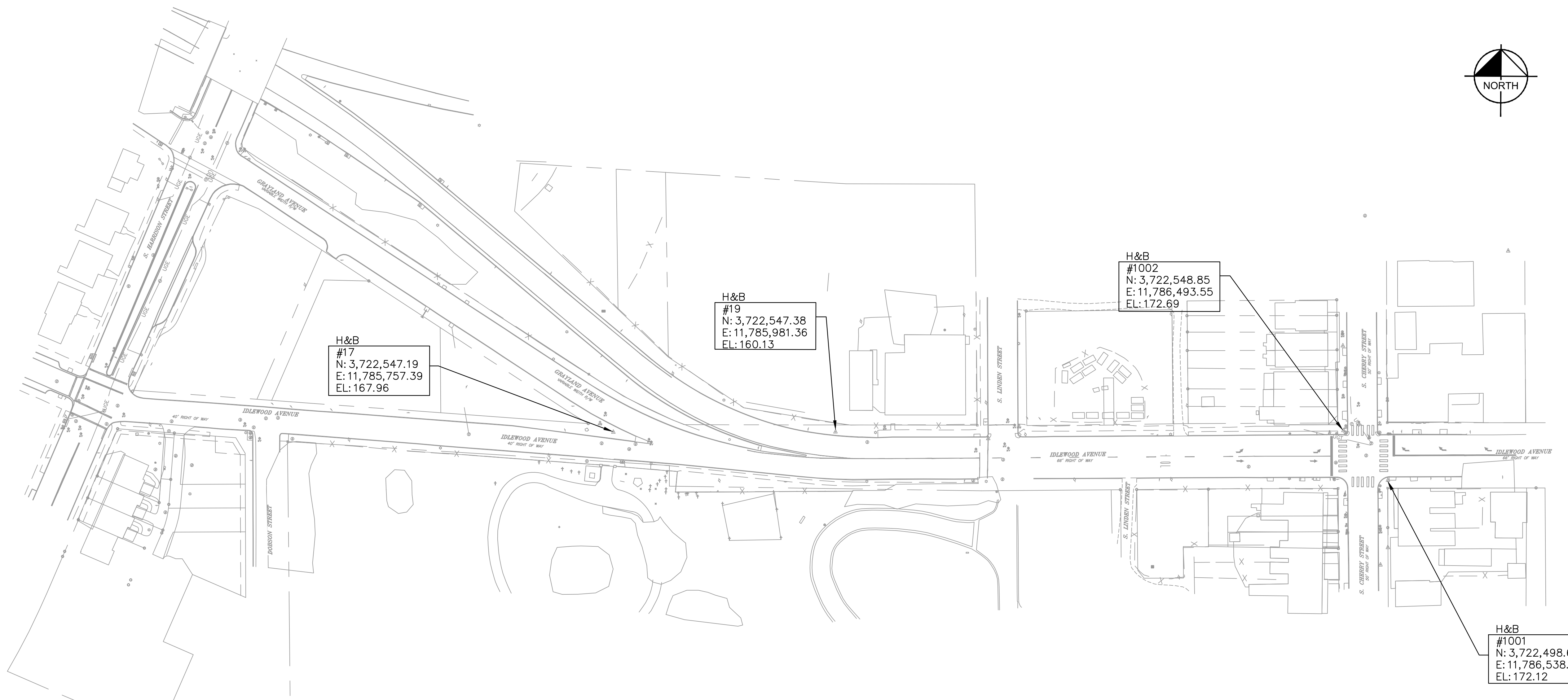
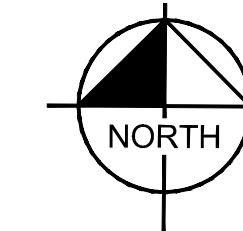
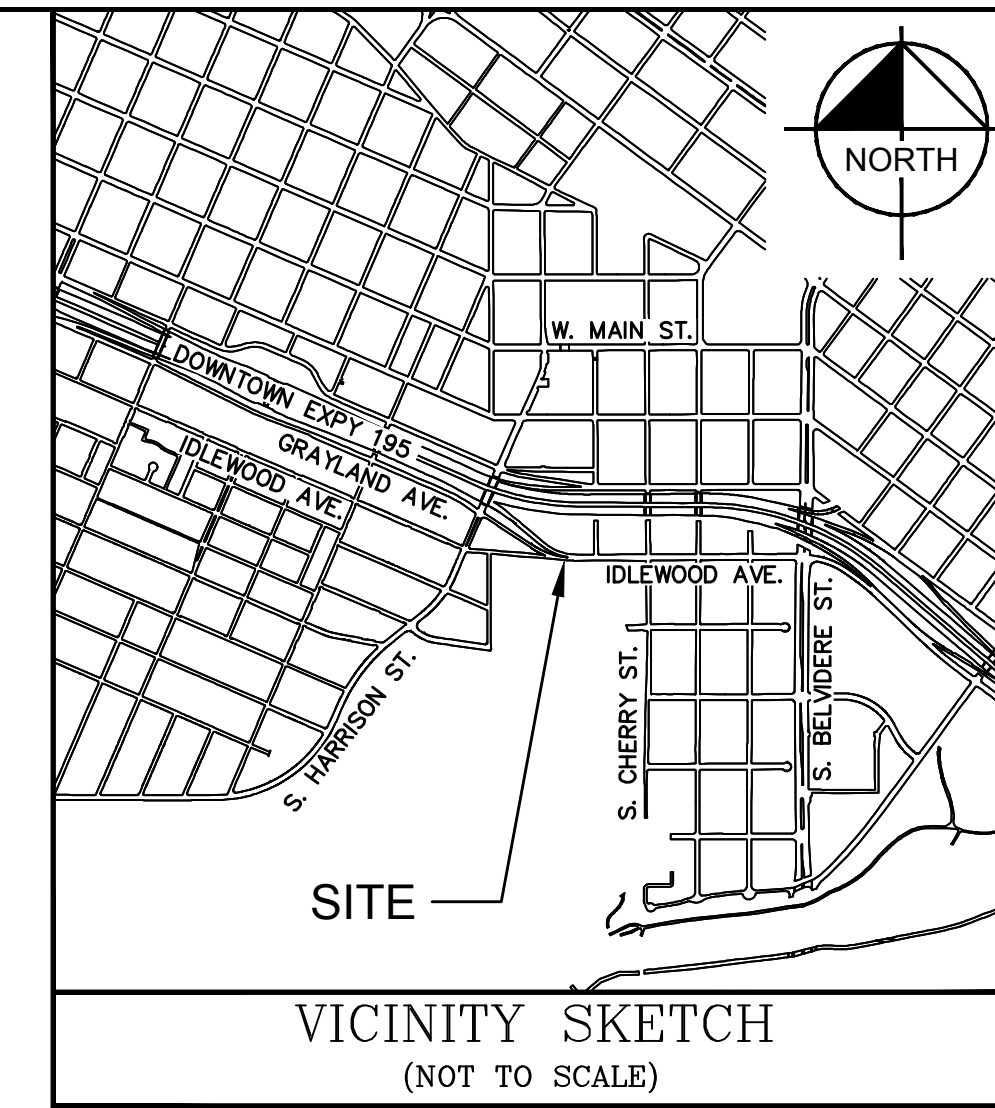
90% PLANS - 10/15/14
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.



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1700 WILLOW LAWN DRIVE, SUITE 200, RICHMOND, VA 23230
PHONE: (804) 673-3882 FAX: (804) 673-3980

NOTES 1. Lot dimensions in parentheses are from deed. 2. Property owners correct as of _____, 20__ 3. Ordinance Number _____ 4. Adopted _____ 5. Accepted _____	LEGEND Existing Curb & Gutter Sidewalk Basin Storm Sewer Sewer Manhole Sanitary Sewer (open) Gas Line Electric Line Telephone/Telegraph TV Cable Water Line Tree / Exist. Tree To Be Removed / Stump Property Line	Existing Curb Cut Ramp Coping Alley Crossing/Driveway Fire Hydrant Edge of Pavement Fence Cornerstone Property Pin Utility Pole Proposed Sewer Manhole Basin Curb & Gutter Asphalt	Proposed Conc. Sidewalk Brick Sidewalk Castings: Water Valve Water Meter Gas Drip Gas Valve Telephone Manhole Electric Manhole Proposed Curb Cut Ramp Decorative Light Conduit Conduit (Conc. Encased) Retaining Wall		Technical Surveys Superintendent Project Engineer Maintenance Engineer City Traffic Engineer	Administrative Capital Project Administrator Deputy Director for Transportation / Public Works Director of Public Works	PROJECT #: 102070 CIP: 040-290-8130	DESIGN BY: MH DRAWN BY: RSP CHECKED BY: BAM	REVIEWED BY FIELD NOTES	SCALE AS NOTED	DATE 10-15-14	DRAWING NO. 0-28615	SHEET NO. 1
					DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA				IDLEWOOD AVENUE ROUNDABOUT PROJECT TITLE SHEET				

SURVEY DATA – ALIGNMENT DATA



H&B
#17
N: 3,722,547.19
E: 11,785,757.39
EL: 167.96

H&B
#19
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E: 11,785,981.36
EL: 160.13

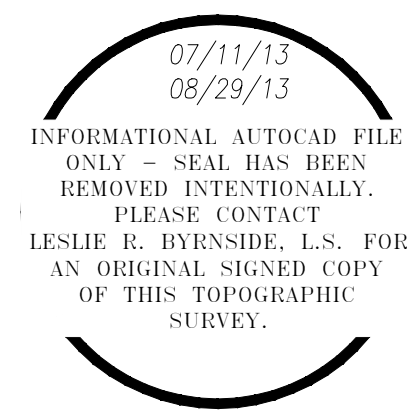
H&B
#1002
N: 3,722,548.85
E: 11,786,493.55
EL: 172.69

H&B
#1001
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E: 11,786,538.32
EL: 172.12

NOTES:

1. INLET INVERTS SHOWN HEREON ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION OR DESIGN TIE IN.
2. EXISTING GROUND SURFACE LOCATION PERFORMED BY CONVENTIONAL INSTRUMENT SURVEY.
3. HORIZONTAL (NAD'83) AND VERTICAL (NAVD'88) DATUM ESTABLISHED THROUGH REAL TIME KINEMATIC (RTK) GPS OBSERVATIONS ON JUNE 05, 2013. DIFFERENTIAL CORRECTIONS WERE DERIVED FROM NATIONAL GEODETIC SURVEY (NGS) CONTINUALLY OPERATING REFERENCE STATION (CORS) "LOY3". COORDINATE VALUES, IF SHOWN HEREON, ARE BASED ON VIRGINIA STATE GRID, SOUTH ZONE.
4. UNDERGROUND UTILITIES WERE DESIGNATED (PAINTED) BY MISS UTILITY OF VIRGINIA. H & B SURVEYING AND MAPPING, LLC SURVEYED THE PAINTED LINE AS PAINTED AND IS NOT RESPONSIBLE FOR THE ACCURACY OF THE PAINT DESIGNATION. UTILITY INFORMATION ON THIS DRAWING WILL NEED TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
5. PROPERTY LINES SHOWN HEREON TAKEN FROM COURT HOUSE RECORDS AND EVIDENCE OF MONUMENTATION AND OCCUPATION FOUND IN THE FIELD. THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY AND WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT; NO EASEMENTS ARE SHOWN ON THIS SURVEY.

THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, LESLIE R. BYRNSIDE FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON JUNE 05, 2013 THROUGH JUNE 25, 2013 AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

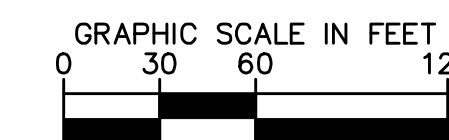


REVISED 08/29/13:
LABEL EXISTING CONTROL

90% PLANS - 10/15/14
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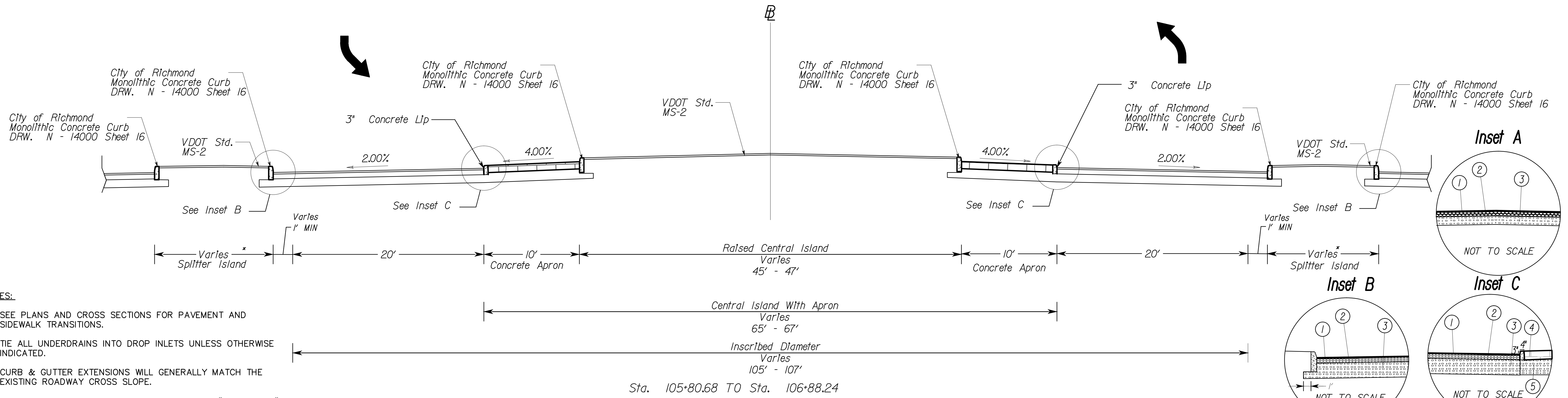
Kimley»Horn

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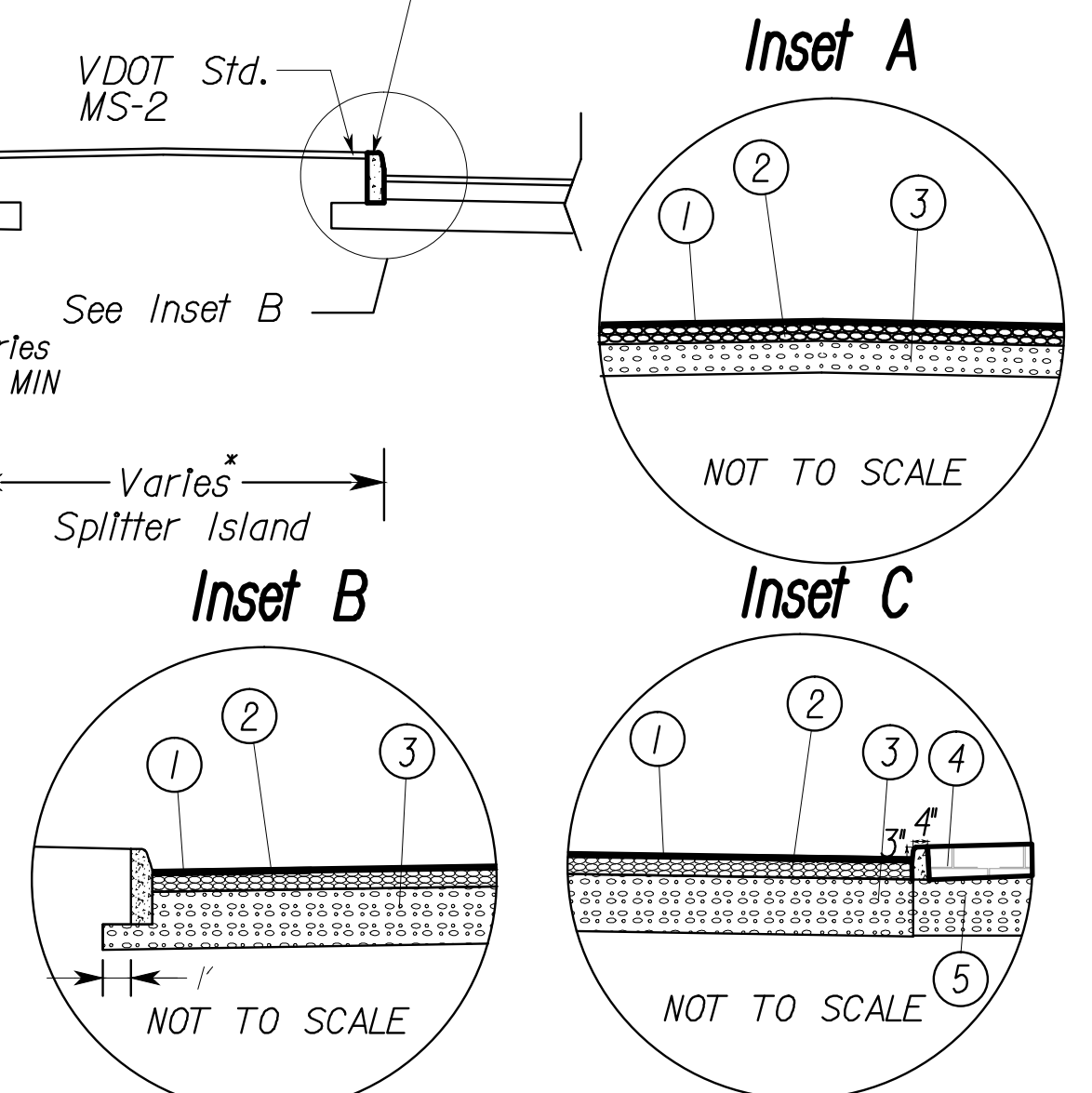


<p>NOTES</p> <ol style="list-style-type: none"> 1. Lot dimensions in parentheses are from deed. 2. Property owners correct as of _____, 20__ 3. Ordinance Number _____ 4. Adopted _____ 5. Accepted _____ 		<p>LEGEND</p> <table style="width: 100%; font-size: small;"> <tr> <td style="width: 33%;"> <ul style="list-style-type: none"> Existing Curb & Gutter Sidewalk Basin Storm Sewer Sewer Manhole Sanitary Sewer (open) Sanitary Sewer (enc. man) Gas Line Electric Line Telephone/Telegraph TV Cable Water Line Tree / Exist. Tree To Be Removed / Stump Property Line </td> <td style="width: 33%;"> <ul style="list-style-type: none"> Existing Sewer Proposed Sewer Manhole Basin Curb & Gutter Asphalt </td> <td style="width: 33%;"> <ul style="list-style-type: none"> Proposed Conc. Sidewalk Brick Sidewalk Castings: Water Valve Water Meter Gas Drp Gas Valve Telephone Manhole Electric Manhole Proposed Curb Cut Ramp Decorative Light Conduit Conduit (Conc. Encased) Retaining Wall </td> </tr> </table>			<ul style="list-style-type: none"> Existing Curb & Gutter Sidewalk Basin Storm Sewer Sewer Manhole Sanitary Sewer (open) Sanitary Sewer (enc. man) Gas Line Electric Line Telephone/Telegraph TV Cable Water Line Tree / Exist. Tree To Be Removed / Stump Property Line 	<ul style="list-style-type: none"> Existing Sewer Proposed Sewer Manhole Basin Curb & Gutter Asphalt 	<ul style="list-style-type: none"> Proposed Conc. Sidewalk Brick Sidewalk Castings: Water Valve Water Meter Gas Drp Gas Valve Telephone Manhole Electric Manhole Proposed Curb Cut Ramp Decorative Light Conduit Conduit (Conc. Encased) Retaining Wall 			<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th colspan="2" style="text-align: center;">Technical</th> <th colspan="2" style="text-align: center;">Administrative</th> </tr> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center;">Surveys Superintendent</td> <td style="text-align: center;">Project Engineer</td> <td style="text-align: center;">Capital Project Administrator</td> <td style="text-align: center;">Deputy Director for Transportation / Public Works</td> </tr> <tr> <td style="text-align: center;">Maintenance Engineer</td> <td style="text-align: center;">City Traffic Engineer</td> <td style="text-align: center;">Director of Public Works</td> <td style="text-align: center;"></td> </tr> </table>		Technical		Administrative						Surveys Superintendent	Project Engineer	Capital Project Administrator	Deputy Director for Transportation / Public Works	Maintenance Engineer	City Traffic Engineer	Director of Public Works	
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<p>DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA</p>		<p>PROJECT #: 102070 CIP: 040-290-6130</p>		<p>IDLEWOOD AVENUE ROUNDABOUT PROJECT SURVEY DATA – ALIGNMENT DATA</p>																							
REFERENCES BL: XX NW, NE, SW, SE	REVISIONS	DESIGN BY: MH DRAWN BY: RSP CHECKED BY: BAM	REVIEWED BY	FIELD NOTES	SCALE AS NOTED	DATE 10-15-14	DRAWING NO. 0-28615	SHEET NO. 1A(1)																			

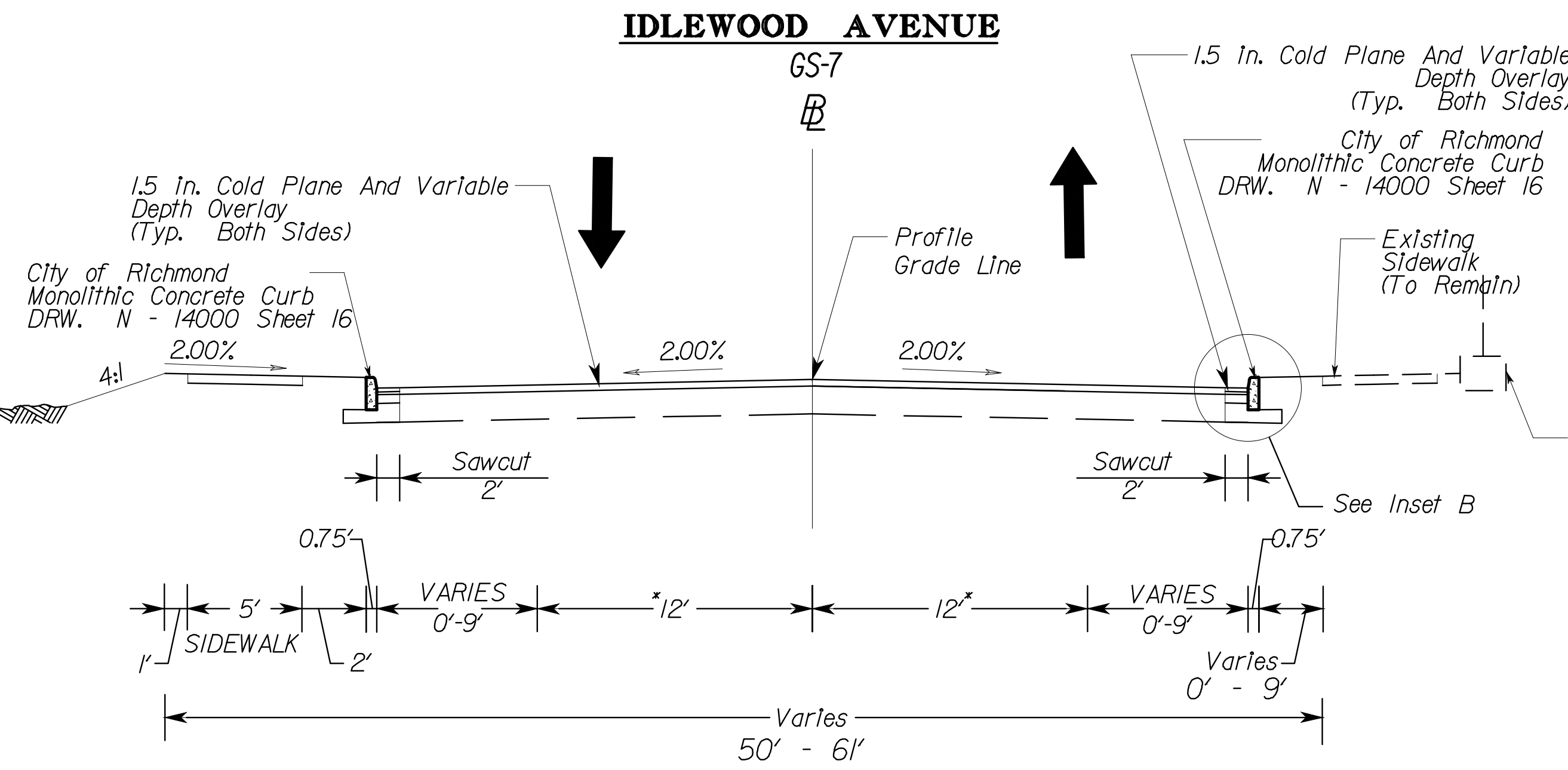
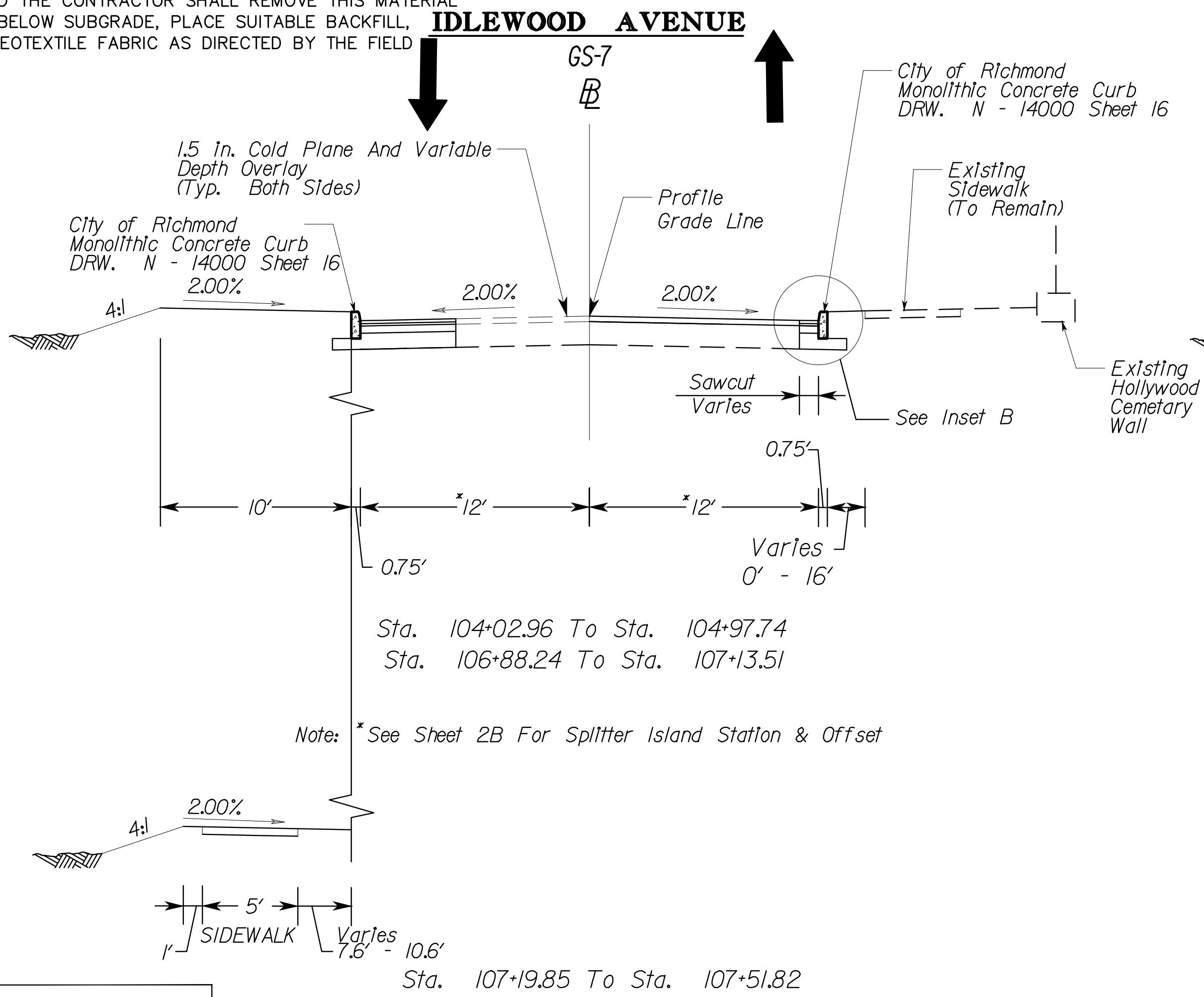
TYPICAL SECTIONS
NOT TO SCALE
IDLEWOOD AVENUE



- NOTES:
- SEE PLANS AND CROSS SECTIONS FOR PAVEMENT AND SIDEWALK TRANSITIONS.
 - TIE ALL UNDERDRAINS INTO DROP INLETS UNLESS OTHERWISE INDICATED.
 - CURB & GUTTER EXTENSIONS WILL GENERALLY MATCH THE EXISTING ROADWAY CROSS SLOPE.
 - DURING CONSTRUCTION IF SOILS DEEMED TO BE "UNSUITABLE" ARE FOUND THE CONTRACTOR SHALL REMOVE THIS MATERIAL UP TO 1' BELOW SUBGRADE, PLACE SUITABLE BACKFILL, AND/OR GEOTEXTILE FABRIC AS DIRECTED BY THE FIELD ENGINEER.



- 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- 4" ASPHALT CONCRETE BASE COURSE TYPE BM-25.0
- 6" AGGREGATE SUBBASE MATERIAL TYPE I, SIZE NO. 21A
- 9" X 6" X 3" CONCRETE PAVERS
- 6" AGGREGATE SUBBASE MATERIAL TYPE I, SIZE NO. 21A



Note: *See Sheet 2B For Splitter Island Station & Offset

90% PLANS - 10/15/14
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Kimley»Horn

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IDLEWOOD AVENUE ROUNDABOUT PROJECT

TYPICAL SECTIONS

NOTES

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

REFERENCES
BL, XX NW, NE, SW, SE

REVISIONS

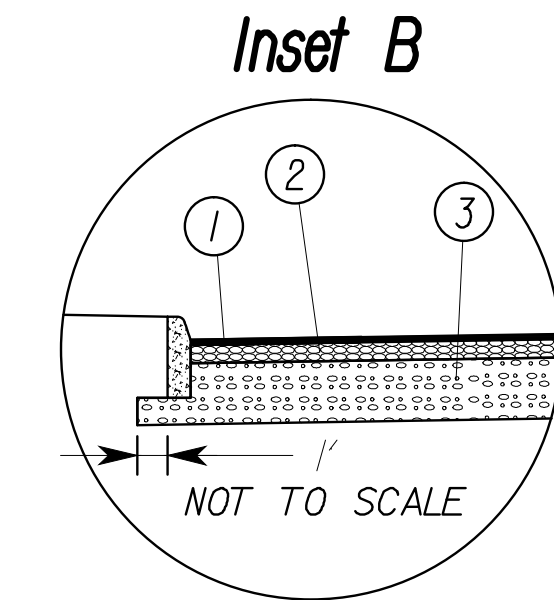
LEGEND

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 (invert)	Fence	Gas Valve
Sanitary Sewer (Pave Man)	Cornerstone	Telephone Manhole
Gas Line	Property Pin	Electric Manhole
Electric Line	Utility Pole	Proposed Curb Cut Ramp
Telephone/Telegraph	Proposed Sewer Manhole	Decorative Light
TV Cable	Manhole	Conduit
Water Line	Basin	Conduit (Conc. Encased)
Tree / Exist. Tree To Be Removed / Stump	Curb & Gutter	Retaining Wall
Property Line	Asphalt	

	Technical Surveys Superintendent Project Engineer Maintenance Engineer City Traffic Engineer	Administrative Capital Project Administrator Deputy Director for Transportation / Public Works Director of Public Works
	DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA	
	PROJECT #: 102070 CIP: 040-290-6130	
	DESIGN BY: MH	DRAWN BY: RSP

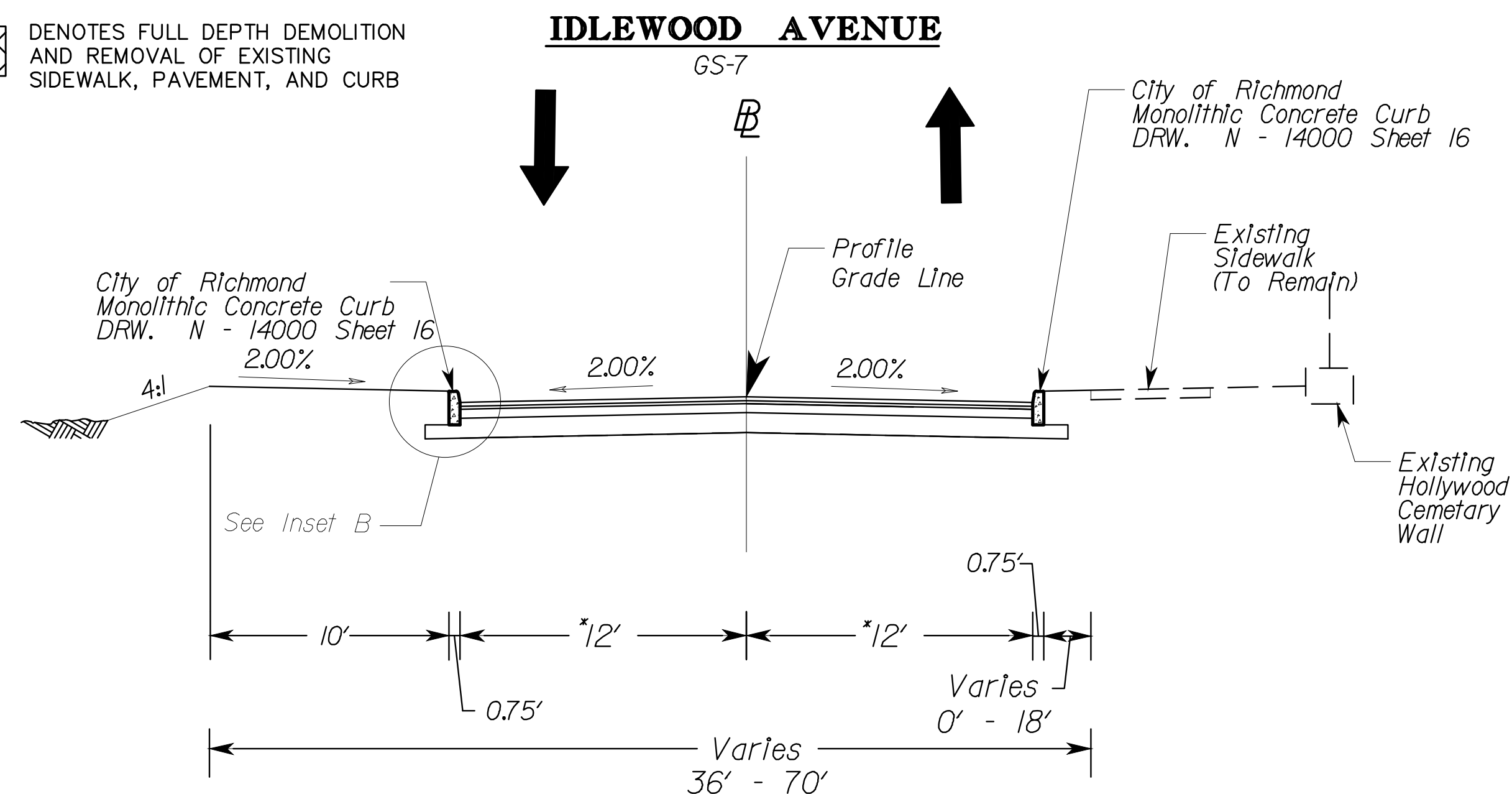
PROJECT #:	102070	SCALE:	AS NOTED	DATE:	10-15-14	DRAWING NO.:	0-28615	SHEET NO.:	2A(1)
CIP:	040-290-6130	REVIEWED BY:		FIELD NOTES:					

TYPICAL SECTIONS
NOT TO SCALE

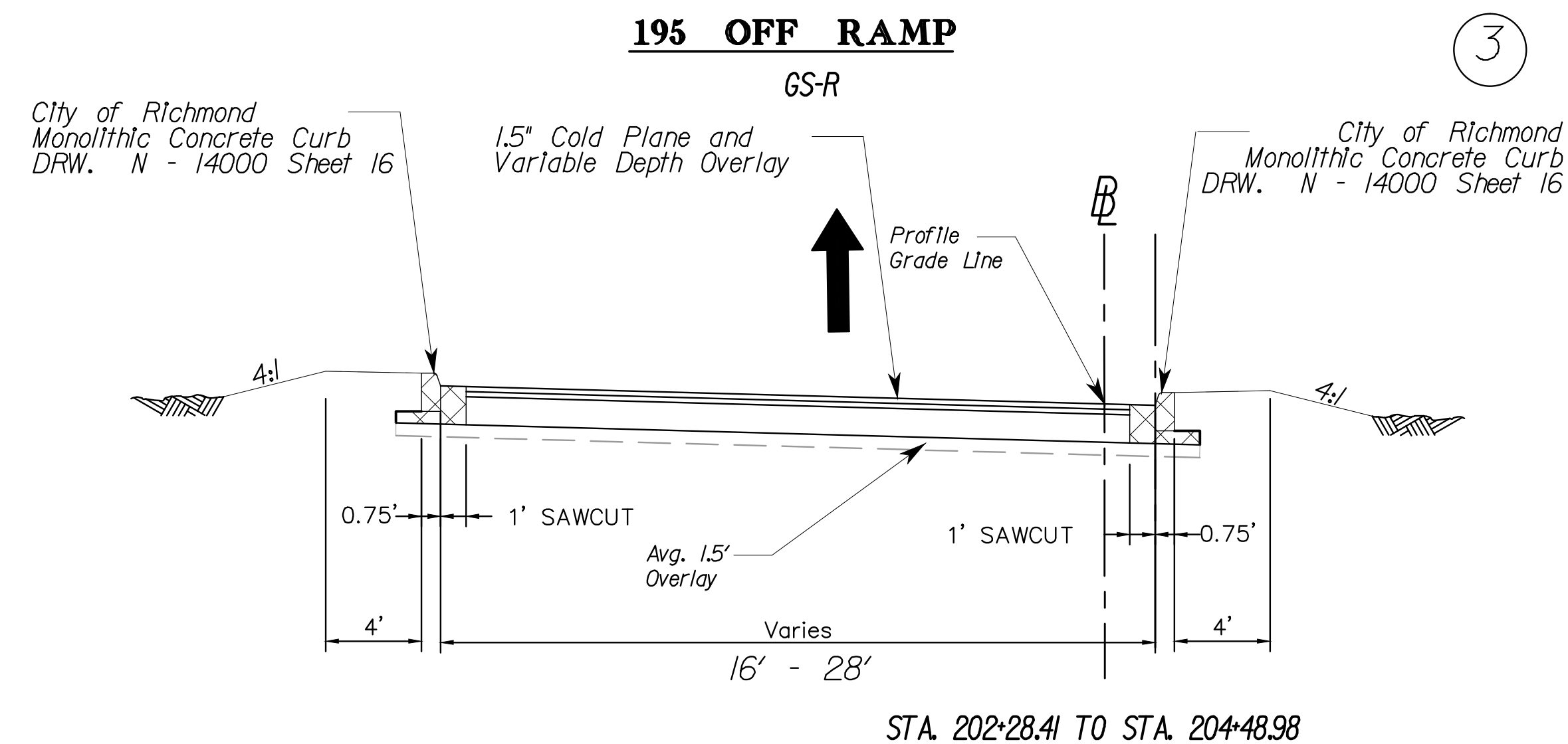


- ① 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- ② 4" ASPHALT CONCRETE BASE COURSE TYPE BM-25.0
- ③ 6" AGGREGATE SUBBASE MATERIAL TYPE I, SIZE NO. 21A

DENOTES FULL DEPTH DEMOLITION AND REMOVAL OF EXISTING SIDEWALK, PAVEMENT, AND CURB

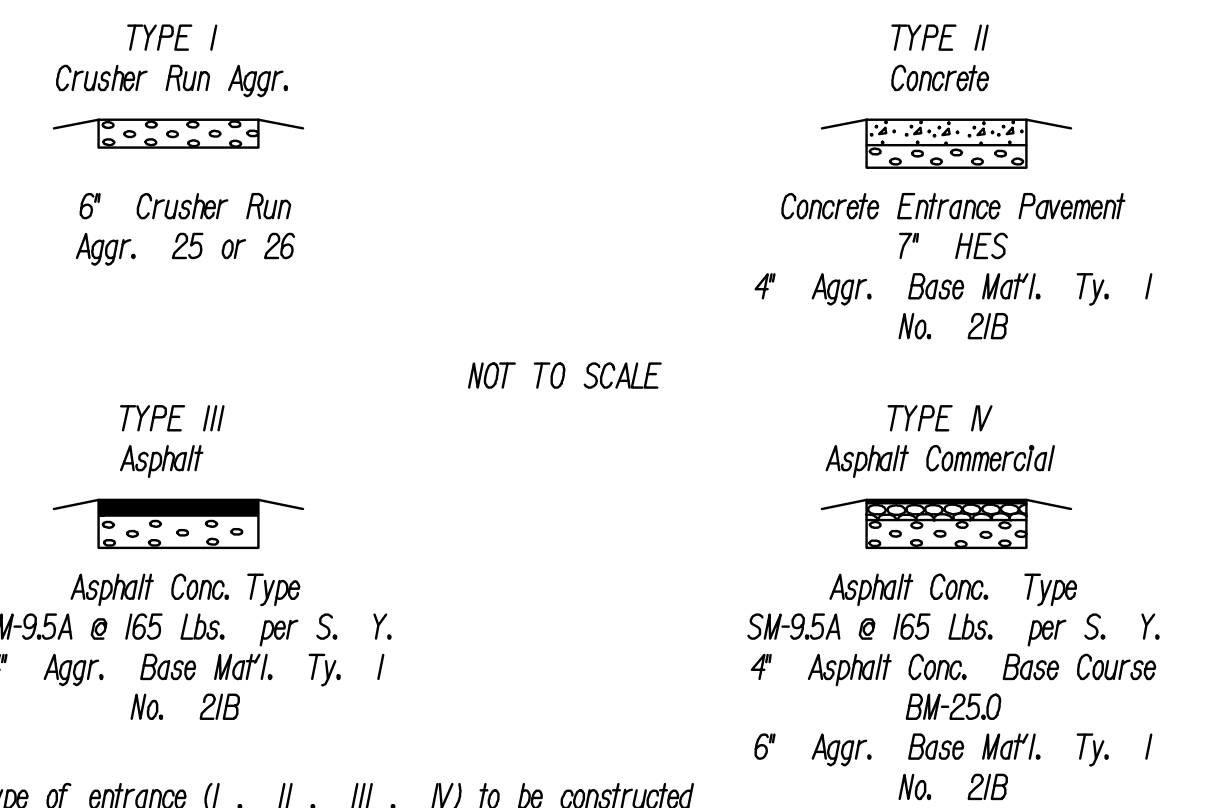


Sta. 104+97.74 To Sta. 105+80.68
Note: *See Sheet 2B For Splitter Island Station & Offset



STA. 202+28.41 TO STA. 204+48.98

PRIVATE AND COMMERCIAL ENTRANCES



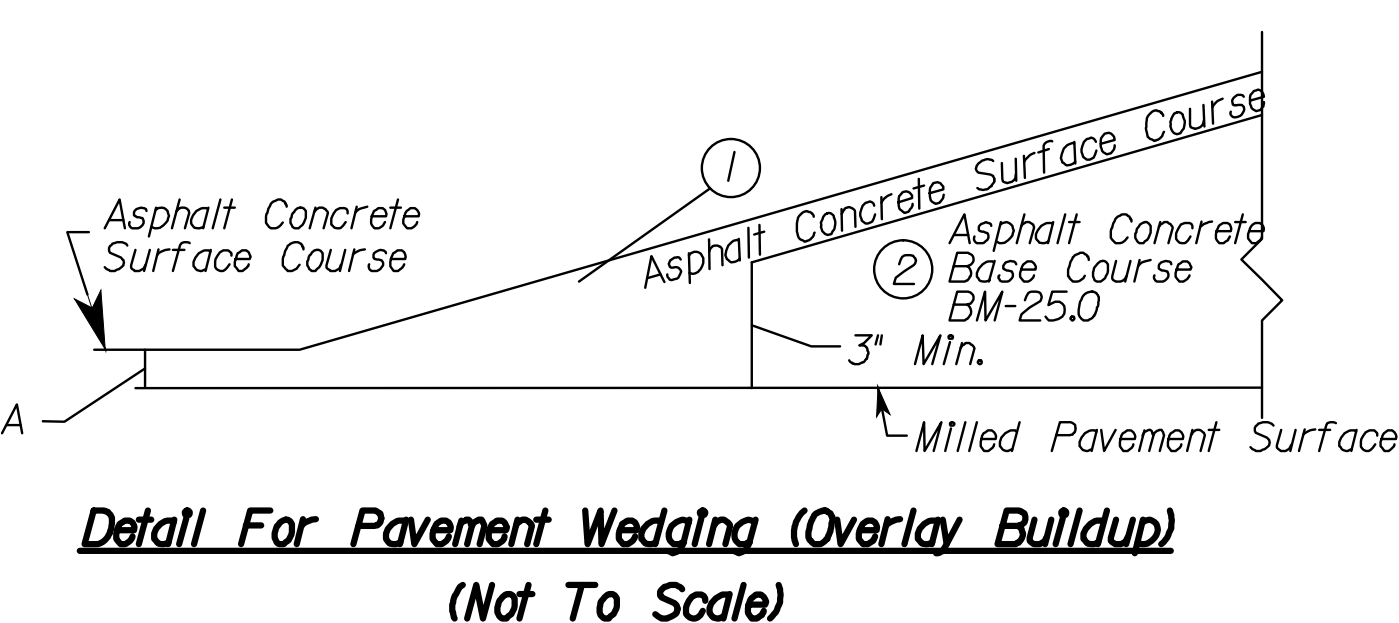
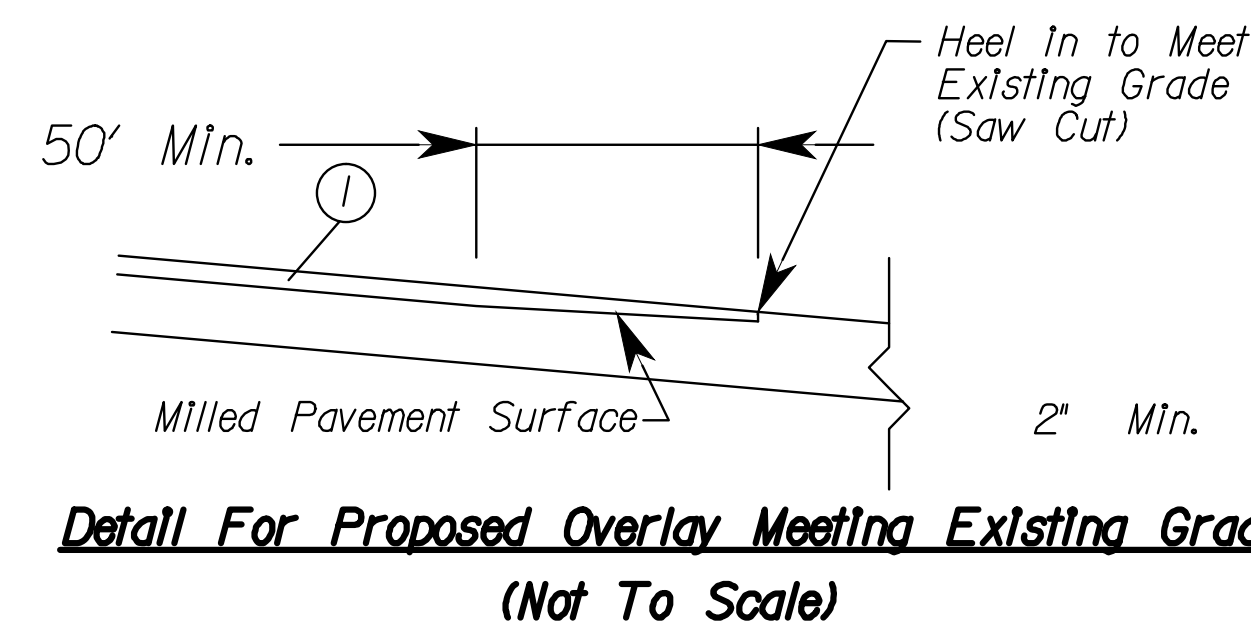
The type of entrance (I, II, III, IV) to be constructed will be determined by the existing condition at the time of construction.

NOTES:

- SEE PLANS AND CROSS SECTIONS FOR PAVEMENT AND SIDEWALK TRANSITIONS.
- TIE ALL UNDERDRAINS INTO DROP INLETS UNLESS OTHERWISE INDICATED.
- CURB & GUTTER EXTENSIONS WILL GENERALLY MATCH THE EXISTING ROADWAY CROSS SLOPE.
- DURING CONSTRUCTION IF SOILS DEEMED TO BE "UNSUITABLE" ARE FOUND THE CONTRACTOR SHALL REMOVE THIS MATERIAL UP TO 1' BELOW SUBGRADE, PLACE SUITABLE BACKFILL, AND/OR GEOTEXTILE FABRIC AS DIRECTED BY THE FIELD ENGINEER.
- PAVEMENT CORE SAMPLES WERE DRILLED AND THE BROOKLAND PARK BLVD. MAINLINE WAS FOUND TO BE 9" OF CEMENT CONCRETE WITH 3" BITUMINOUS PAVEMENT OVERLAY AND THE EXISTING SIDE ROADS TO BE 9" BITUMINOUS PAVEMENT.

ROADWAY PAVEMENT WEDGING

Proposed Roadway Grade Shall Be As Designated On Profiles And Staking Details. Bulldup Of Pavement To Desired Cross Slopes Shall Be In Accordance With Pavement Wedging Detail. (Cross Slopes Shall Be In Accordance With Profiles And Staking Detail Sheets.) Where Proposed Improvements Abut Existing Pavement, Condition Shall Be In Accordance With Subject Detail.



90% PLANS - 10/15/14

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

Kimley»Horn

© 2014 KIMLEY-HORN AND ASSOCIATES, INC.
1700 WILLOW LAWN DRIVE, SUITE 200, RICHMOND, VA 23230
PHONE: (804) 673-3882 FAX: (804) 673-3980

<p>NOTES</p> <ol style="list-style-type: none"> Lot dimensions in parentheses are from deed. Property owners correct as of _____, 20__ Ordinance Number _____ Adopted _____ Accepted _____ 		<p>LEGEND</p> <table border="0"> <tr> <td>Existing Curb & Gutter</td> <td></td> <td>Existing Curb Cut Ramp</td> <td></td> <td>Proposed Conc. Sidewalk</td> <td></td> </tr> <tr> <td>- Curb & Gutter</td> <td></td> <td>- Coping</td> <td></td> <td>- Brick Sidewalk</td> <td></td> </tr> <tr> <td>- Sidewalk</td> <td></td> <td>- Alley Crossing/Driveway</td> <td></td> <td>Castings: Water Valve</td> <td></td> </tr> <tr> <td>- Basin</td> <td></td> <td>- Fire Hydrant</td> <td></td> <td>- Water Meter</td> <td></td> </tr> <tr> <td>- Storm Sewer</td> <td></td> <td>- Edge of Pavement</td> <td></td> <td>- Gas Drip</td> <td></td> </tr> <tr> <td>- Sewer Manhole</td> <td></td> <td>- Fence</td> <td></td> <td>- Gas Valve</td> <td></td> </tr> <tr> <td>- Sanitary Sewer (Open)</td> <td></td> <td>- Cornerstone</td> <td></td> <td>- Telephone Manhole</td> <td></td> </tr> <tr> <td>- Sanitary Sewer (Press. Man)</td> <td></td> <td>- Property Pin</td> <td></td> <td>- Electric Manhole</td> <td></td> </tr> <tr> <td>- Gas Line</td> <td></td> <td>- Utility Pole</td> <td></td> <td>Proposed Curb Cut Ramp</td> <td></td> </tr> <tr> <td>- Electric Line</td> <td></td> <td>Proposed Sewer</td> <td></td> <td>- Manhole</td> <td></td> </tr> <tr> <td>- Telephone/Telegraph</td> <td></td> <td>- Manhole</td> <td></td> <td>- Basin</td> <td></td> </tr> <tr> <td>- TV Cable</td> <td></td> <td>- Curb & Gutter</td> <td></td> <td>- Asphalt</td> <td></td> </tr> <tr> <td>- Water Line</td> <td></td> <td>- Property Line</td> <td></td> <td></td> <td></td> </tr> <tr> <td>- Tree / Exist. Tree To Be Removed / Stump</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Existing Curb & Gutter		Existing Curb Cut Ramp		Proposed Conc. Sidewalk		- Curb & Gutter		- Coping		- Brick Sidewalk		- Sidewalk		- Alley Crossing/Driveway		Castings: Water Valve		- Basin		- Fire Hydrant		- Water Meter		- Storm Sewer		- Edge of Pavement		- Gas Drip		- Sewer Manhole		- Fence		- Gas Valve		- Sanitary Sewer (Open)		- Cornerstone		- Telephone Manhole		- Sanitary Sewer (Press. Man)		- Property Pin		- Electric Manhole		- Gas Line		- Utility Pole		Proposed Curb Cut Ramp		- Electric Line		Proposed Sewer		- Manhole		- Telephone/Telegraph		- Manhole		- Basin		- TV Cable		- Curb & Gutter		- Asphalt		- Water Line		- Property Line				- Tree / Exist. Tree To Be Removed / Stump						<p>Technical</p> <p>Surveys Superintendent</p> <p>Project Engineer</p> <p>Maintenance Engineer</p> <p>City Traffic Engineer</p>		<p>Administrative</p> <p>Capital Project Administrator</p> <p>Deputy Director for Transportation / Public Works</p> <p>Director of Public Works</p>		<p>DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA</p>		<p>IDLEWOOD AVENUE ROUNDABOUT PROJECT</p> <p>TYPICAL SECTIONS</p> <p>PROJECT #: 102070 CIP: 040-290-8130</p>		<p>DESIGN BY: MH DRAWN BY: RSP CHECKED BY: BAM</p>		<p>REVIEWED BY</p>		<p>FIELD NOTES</p>		<p>SCALE: AS NOTED</p>		<p>DATE: 10-15-14</p>		<p>DRAWING NO.: 0-28615</p>		<p>SHEET NO.: 2A(2)</p>	
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DRAINAGE DESCRIPTIONS

4-2 1 ST'D. DI-3B REQ'D. TOP=168.79' TRAPPED
L=10', H=3.6', INV. 165.20'
ST'D. IS-1 REQ'D.

4-3 TO EX-4-5 25'-15" CLASS III STORM SEWER PIPE REQ'D (3.0' COVER)
INV. OUT= 162.00 (4-3)
INV. IN= 161.00 (EX 4-4)

EX-4-1 (SMH*759)
EX TOP=169.11' PROPOSED RIM=169.02'
INV. IN (1)=164.90' (15" RCP)
EX INV IN (2)=158.61' (42x42 BRICK)
EX INV OUT=158.59' (42x42 BRICK)
ADJUST TO PROP. GRADE

4-2 TO EX-4-1 19'-15" CLASS III STORM SEWER PIPE REQ'D (2.0' COVER)
INV. OUT=165.20 (4-2)
INV. IN=164.90 (EX 4-1)

4-3 1 ST'D. DI-3C REQ'D. TOP=166.12' TRAPPED
L=6', H=4', INV. 162.00'
ST'D. IS-1 REQ'D.

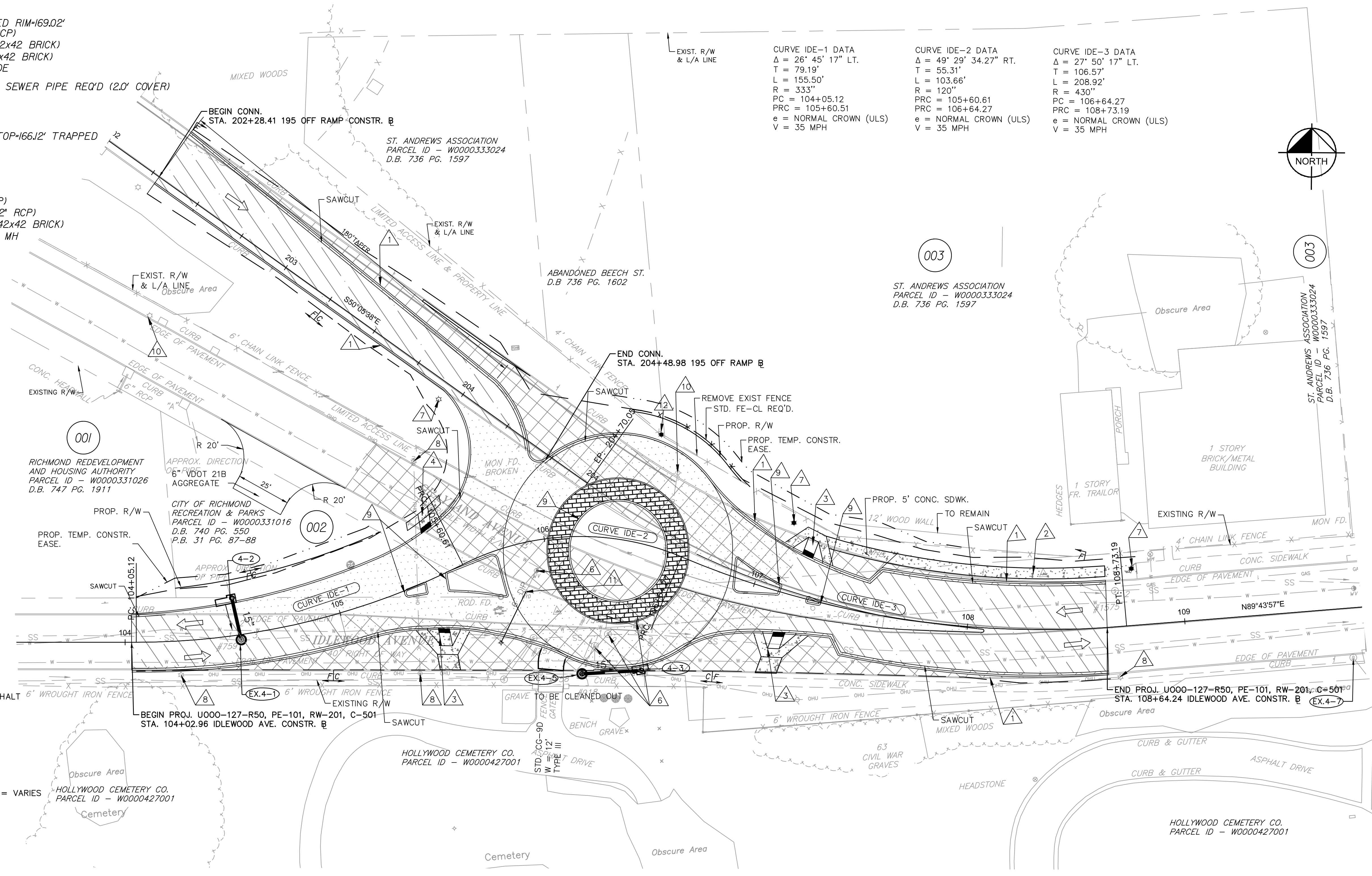
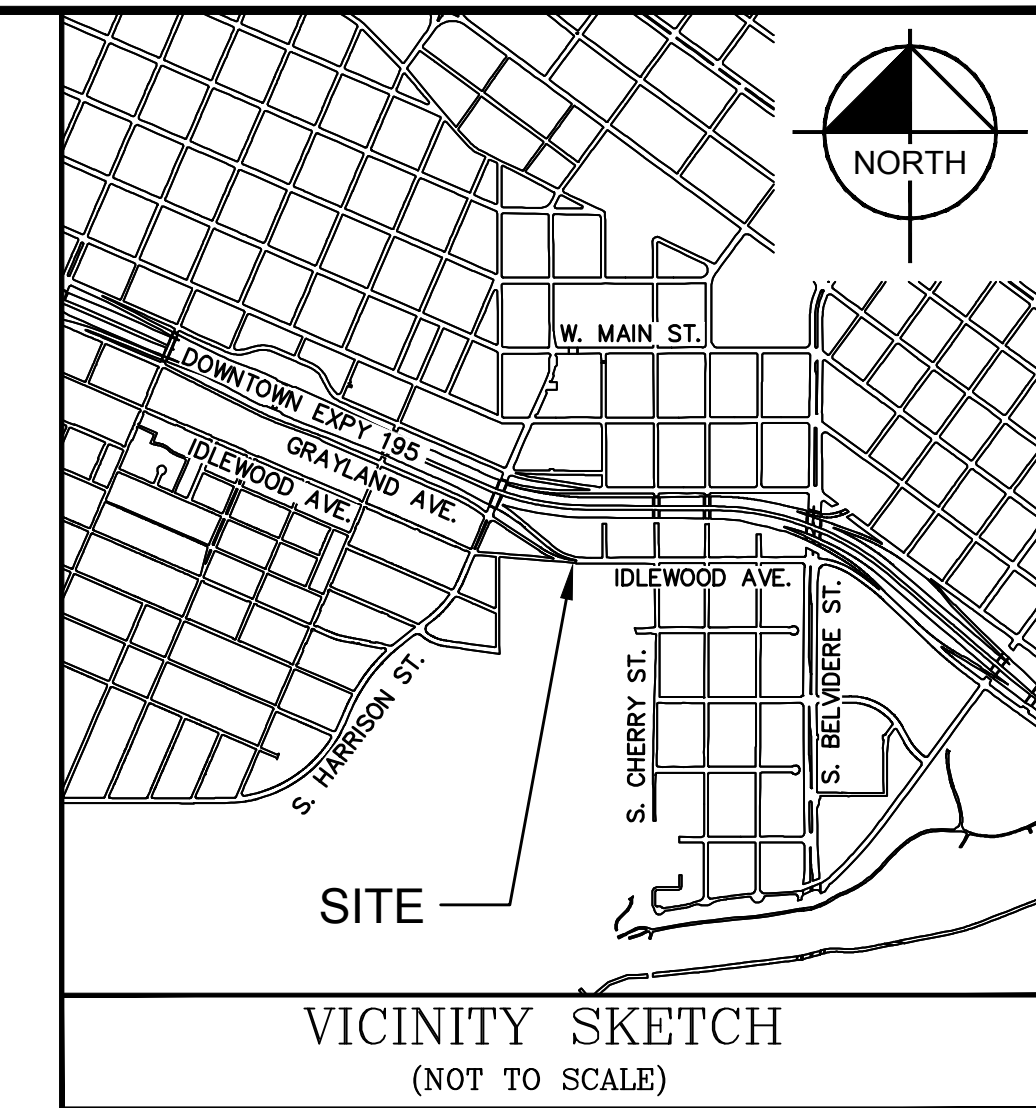
EX-4-5 (SMH*758)
EX TOP=167.26'
INV. IN =161.00' (15" RCP)
EX INV IN (1)=158.00' (12" RCP)
EX INV IN (2)=157.96' (42x42 BRICK)
CONVERT EXIST. DI TO MH

EXIST. R/W & L/A LINE

CURVE IDE-1 DATA
Δ = 26° 45' 17" LT.
T = 79.19'
L = 155.50'
R = 333"
PC = 104+05.12
PRC = 105+60.51
e = NORMAL CROWN (ULS)
V = 35 MPH

CURVE IDE-2 DATA
Δ = 49° 29' 34.27" RT.
T = 55.31'
L = 103.66'
R = 120"
PC = 105+60.61
PRC = 106+64.27
e = NORMAL CROWN (ULS)
V = 35 MPH

CURVE IDE-3 DATA
Δ = 27° 50' 17" LT.
T = 106.57'
L = 208.92'
R = 430"
PC = 106+64.27
PRC = 108+73.19
e = NORMAL CROWN (ULS)
V = 35 MPH

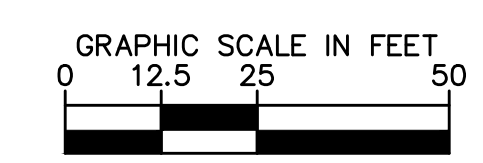


LEGEND

- CONCRETE PAVERS
- MILL & OVERLAY/BUILD-UP ASPHALT
- PROPOSED CONC. ITEMS
- PROPOSED ASPHALT
- OBSCURE PAVEMENT
- DEMOLISH PAVEMENT
- 1 STD. CITY OF RICHMOND CURB
- 2 STD. HYD. CONCR. SIDEWALK REQ'D., W = VARIES
- 3 STD. CG-12A CURB CUT RAMP REQ'D.
- 4 STD. CG-12B CURB CUT RAMP REQ'D.
- 5 SAWCUT AND PAVEMENT REPAIR
- 6 ADJUST EXISTING UTILITY TO GRADE
- 7 EXISTING LIGHT POLE TO BE REPLACED BY DPU
- 8 EXISTING UTILITY POLE TO REMAIN
- 9 STD. MS-2 W/ CITY OF RICHMOND CURB
- 10 EXISTING LIGHT POLE TO BE REMOVED
- 11 RELOCATE HYDRANT
- 12 NEW CITY LIGHT ON WOOD POLE

---C--- Denotes Construction Limits in Cuts
---F--- Denotes Construction Limits in Fills

Notes:
Dot-dashed lines denote Permanent Easements.
Dot-dot-dashed lines denote Temporary Easements.



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PHONE: (804) 673-3882 FAX: (804) 673-3980

NOTES

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

REFERENCES: BL, XX, NW, NE, SW, SE

REVISIONS

Existing	Proposed	Legend
Curb & Gutter	Proposed Conc. Sidewalk	Existing Curb Cut Ramp
Sidewalk	Brick Sidewalk	Coping
Basin	Castings: Water Valve	Alley Crossing/Driveway
Storm Sewer	Water Meter	Fire Hydrant
Sewer Manhole	Gas Drip	Edge of Pavement
Sanitary Sewer (open)	Gas Valve	Fence
Sanitary Sewer (open) Man	Telephone Manhole	Cornerstone
Gas Line	Electric Manhole	Property Pin
Electric Line	Electric Manhole	Utility Pole
Telephone/Telegraph	Manhole	Proposed Sewer
TV Cable	Manhole	Basin
Water Line	Manhole	Curb & Gutter
Tree / Exist. Tree To Be Removed / Stump	Property Line	Asphalt
Property Line		



Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

IDLEWOOD AVENUE ROUNDABOUT PROJECT

PLAN SHEET-IDLEWOOD AVE. STA. 104+00 TO STA. 108+95

PROJECT #: 102070
CIP: 040-290-8130

DESIGN BY: M.H. DRANN BT: RSP CHECKED BY: G.M.	REVIEWED BY:	FIELD NOTES:	SCALE: AS NOTED	DATE: 10-15-14	DRAWING NO.: 0-28615	SHEET NO.: 3
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GENERAL PLANTING NOTES:

THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, ETC. NECESSARY TO COMPLETE ALL PLANTING AS SHOWN ON THE PLANTING PLANS, AS SPECIFIED HEREIN OR IN SUPPLEMENTAL SPECIFICATIONS, AND/OR AS REQUIRED BY JOB CONDITIONS. THE WORK IN GENERAL INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

- (1) SOIL PREPARATION;
- (2) PROVIDING TOPSOIL AND ALL SOIL AMENDMENTS;
- (3) EXCAVATION OF PLANT PITS;
- (4) PROVIDING ALL PLANT MATERIAL AND MULCH AS INDICATED ON PLANS;
- (5) FERTILIZING;
- (6) STAKING;
- (7) CHEMICAL APPLICATION;
- (8) MAINTENANCE AND GUARANTEE;
- (9) ALL OTHER ITEMS NECESSARY TO MAKE WORK COMPLETE.

THE PLANTING CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITH THE OTHER CONTRACTORS. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE OR NON-EXISTENCE OF ANY UTILITIES. PRIOR TO ANY CONSTRUCTION, EXCAVATION, OR ROTO-TILLING THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF VERIFYING THE LOCATIONS OF ALL UTILITIES, ABOVE AND/OR BELOW GROUND, PUBLIC AND/OR PRIVATE THAT MAY EXIST AND CROSS THROUGH THE AREAS OF CONSTRUCTION.

(1) SOIL PREPARATION

(1.1) BECAUSE OF SOIL COMPACTION DURING CONSTRUCTION, ALL PLANTING AREAS SHALL BE ROTOILLED TO A DEPTH AS SHOWN IN DETAILS OR AS SPECIFIED IN WRITTEN SPECIFICATIONS. A PLANTING AREA IS ANY AREA IN WHICH NEW PLANTING OCCURS. EXCAVATE THE ENTIRE AREA BOUNDED BY WALKS, WALLS, FENCES, ETC. REMOVE SPOIL MATERIAL AS DIRECTED BY OWNER OR THE OWNER'S REPRESENTATIVE.

(1.2) EXCAVATED SOIL SHOULD BE USED AS BACKFILL MATERIAL IN ORDER TO ELIMINATE OR MINIMIZE THE OCCURRENCE OF HYDROLOGIC DISCONTINUITIES, AND/OR SOIL INTERFACE PROBLEMS COMMON TO PLANTING BEDS CONTAINING SOILS OF DIFFERENT TEXTURE. WHERE THE TEXTURE OF THE EXISTING SOIL IS UNDESIRABLE FOR THE PLANT SPECIES BEING PLANTED (i.e. HEAVY CLAY, PURE SAND) AND WHERE THE pH OF THE EXISTING SOIL IS SUITABLE FOR THE SPECIES BEING PLANTED, THE SOIL SHALL BE BLENDED 66% EXISTING SOIL WITH 33% AMENDED SOIL.

(1.3) WHERE IT IS DETERMINED THAT THE EXISTING SOIL EXCAVATED IS TOTALLY UNSUITABLE FOR USE AS BACKFILL MATERIAL BECAUSE OF IMPROPER pH OR THE PRESENCE OF DEBRIS OR OTHER DELETERIOUS MATTER, THE BACKFILL MATERIAL SHALL BE 100% AMENDED SOIL MIXTURE AS DESCRIBED BELOW WITH THE ADDITION OF 1/2 PART SAND. AMENDED SOIL: PLANTING SOIL FOR AMENDING BACKFILL SHALL BE 100% TOPSOIL WITH AMENDMENTS ADDED ACCORDING TO THE RECOMMENDATIONS OF THE SOILS TEST REPORT TO BRING THE pH VALUE OF THE PLANTING BACKFILL MIXTURE WITHIN THE RANGES DESCRIBED BELOW. THE TOPSOIL AND AMENDMENTS SHALL BE MIXED AT AN ON-SITE LOCATION. PLANTING SOIL SHALL NOT BE MIXED AT INDIVIDUAL PLANT LOCATIONS.

(2) TOPSOIL AND ALL SOIL AMENDMENTS

(2.1) NECESSARY QUANTITIES OF TOPSOIL SHALL BE SUPPLIED BY THE CONTRACTOR AND APPROVED BY THE OWNER OR HIS REPRESENTATIVE. THE CONTRACTOR SHALL APPLY TOPSOIL ONLY AFTER SECURING SOIL TEST (V.P.I.), APPLYING RECOMMENDED TREATMENT THEREOF, AND SUBMITTING FOR APPROVAL.

(2.2) ON-SITE TOPSOIL MEETING THE CONDITIONS FOR THESE NOTES MAY BE USED, OR IF INSUFFICIENT QUANTITIES ARE AVAILABLE, OUTSIDE TOPSOIL MEETING THE FOLLOWING CRITERIA SHALL BE PROVIDED.

(2.3) ON-SITE TOPSOIL SHALL BE STOCKPILED TOPSOIL THAT HAS BEEN SALVAGED IN ACCORDANCE WITH SECTION 303.04(A) OF THE V.D.O.T. SPECIFICATIONS. IT SHALL BE FREE FROM REFUSE, OR ANY MATERIAL TOXIC TO PLANT GROWTH, AND REASONABLY FREE FROM SUBSOIL, STUMPS, ROOTS, BRUSH, STONES, CLAY, LUMPS, OR SIMILAR OBJECTS LARGER THAN 3" IN THEIR GREATEST DIMENSION.

(2.4) OFF-SITE TOPSOIL, IF NEEDED, SHALL BE TOPSOIL FURNISHED FROM SOURCES OUTSIDE THE PROJECT LIMITS AND SHALL BE THE ORIGINAL TOP LAYER OF A SOIL PROFILE FORMED UNDER NATURAL CONDITIONS, TECHNICALLY DEFINED AS THE "A" HORIZON BY THE SOIL SOCIETY OF AMERICA. IT SHALL CONSIST OF NATURAL, FRIABLE, LOAMY SOIL WITHOUT ADMIXTURES OF SUBSOIL, OR OTHER FOREIGN MATERIALS, AND SHALL BE REASONABLY FREE FROM STUMPS, ROOTS, HARD LUMPS, STIFF CLAY, STONE, NOXIOUS WEEDS, BRUSH, OR OTHER LITTER. IT SHALL HAVE DEMONSTRATED BY EVIDENCE OF HEALTHY VEGETATION GROWING, OR HAVING GROWN ON IT PRIOR TO STRIPPING, THAT IT IS REASONABLY WELL DRAINED AND DOES NOT CONTAIN SUBSTANCES TOXIC TO PLANTS.

(2.4.1) "A" HORIZON: "A" HORIZONS SHALL BE MINERAL HORIZONS CONSISTING OF (1) HORIZONS OR ORGANIC MATTER ACCUMULATION FORMED OR FORMING AT OR ADJACENT TO THE SURFACE; (2) HORIZONS THAT HAVE LOST CLAY, IRON, OR ALUMINUM, WITH RESULTANT CONCENTRATIONS OF QUARTZ OR OTHER RESISTANT MINERALS OF SAND OR SILT SIZE; OR (3) HORIZONS DOMINATED BY 1 OR 2 ABOVE BUT TRANSITIONAL TO AN UNDERLYING B OR C.

(2.4.2) "A" HORIZON SUBDIVISIONS: A1 HORIZONS SHALL BE MINERAL HORIZONS, FORMED OR FORMING AT OR ADJACENT TO THE SURFACE, IN WHICH THE FEATURE EMPHASIZED IS AN ACCUMULATION OF HUMIFIED ORGANIC MATTER INTIMATELY ASSOCIATED WITH THE MINERAL FRACTION. THE SOIL IS A DARK OR DARKER THAN UNDERLYING HORIZONS BECAUSE OF THE PRESENCE OF ORGANIC MATTER. THE

ORGANIC MATERIAL IS ASSUMED TO BE DERIVED FROM PLANT AND ANIMAL REMAINS DEPOSITED ON THE SURFACE OF THE SOIL OR DEPOSITED WITHIN THE HORIZON WITHOUT APPRECIABLE TRANSLLOCATION.

A2 HORIZONS SHALL BE MINERAL HORIZONS IN WHICH THE FEATURE EMPHASIZED IS LOSS OF CLAY, IRON OR ALUMINUM, WITH RESULTANT CONCENTRATION OF QUARTZ OR OTHER RESISTANT MINERALS IN SAND AND SILT SIZES.

(2.4.3) "A" HORIZON TOPSOIL CONTENT: "A" HORIZON TOPSOIL SHALL BE IN ACCORDANCE WITH THE FOLLOWING MATERIALS BY PERCENTAGE OF VOLUME: SILT 42-58% SAND 15-20% CLAY 15-20% ORGANIC MATERIAL 12-18%

(2.5) TOPSOIL SHALL HAVE A pH IN THE RANGE OF 6.0 TO 7.0 PRIOR TO MIXING WITH AMENDMENTS. IF THE pH IS NOT WITHIN THIS RANGE, THE pH SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE OR A DIFFERENT SOURCE OF SUPPLY SHALL BE SELECTED. TOPSOIL SHALL BE SUBJECT TO INSPECTION BY THE OWNER OR THE OWNER'S REPRESENTATIVE AT THE SOURCE OF SUPPLY AND IMMEDIATELY PRIOR TO USE IN THE PLANTING OPERATIONS.

(2.6) PLANTING SOIL AFTER AMENDING FOR DECIDUOUS PLANTS SHALL HAVE A pH VALUE BETWEEN 6.0 AND 7.0, AND FOR EVERGREEN OR SEMI-EVERGREEN PLANTS SHALL HAVE A pH VALUE BETWEEN 5.0 AND 6.0. A REPRESENTATIVE SAMPLE FROM THE EXCAVATED SOIL SHALL BE FIELD TESTED FOR pH UTILIZING A RELIABLE SOIL pH METER OR SOIL pH TEST KIT. THE pH VALUE OF THE NATURAL SOIL BACKFILL MIXTURE MAY BE AMENDED BY ADDING LIMESTONE OR ALUMINUM SULFATE AS NEEDED.

(3) EXCAVATION OF PLANT PITS

(3.1) PRIOR TO EXCAVATION OF TREE PITS, AN AREA EQUAL TO TWO TIMES THE DIAMETER OF THE ROOT BALL SHALL BE ROTO-TILLED TO A DEPTH EQUAL TO THE DEPTH OF THE ROOT BALL.

(3.2) IN CONTINUOUS SHRUB AND GROUND COVER BEDS, THE ROTO-TILLED PERIMETER SHOULD EXTEND TO A DISTANCE OF ONE FOOT BEYOND THE DIAMETER OF A SINGLE ROOTBALL. THE BED SHALL BE TILLED TO A DEPTH EQUAL TO THE ROOT BALL DEPTH PLUS 6". (3.3) TREE PITS FOR WELL DRAINED SOILS SHALL BE DUG SO THAT THE BOTTOM OF THE ROOT BALL WILL REST ON UNDISTURBED SOIL AND THE TOP OF THE ROOT BALL WILL BE FLUSH WITH FINISH GRADE. IN POORLY DRAINED SOILS THE TREE PIT SHALL BE DUG SO THAT THE ROOT BALL RESTS ON UNDISTURBED SOIL AND THE TOP OF THE ROOT BALL IS 1" ABOVE FINISH GRADE. PLANT PIT WALLS SHALL BE SCARIFIED PRIOR TO PLANT INSTALLATION.

(3.4) SHRUB BEDS SHALL BE EXCAVATED TO 6" BELOW THE ROOT BALL OF THE SHRUB.

(3.5) ALL AIR POCKETS SHALL BE REMOVED FROM PLANT PIT UPON BACK FILLING WITH PLANTING SOIL BY FILLING APPROXIMATELY 1/2 TO 2/3 OF THE PIT WITH PLANTING BACKFILL MATERIAL, TAMPING BACKFILL MATERIAL AND THEN WATERING TO ENSURE SETTLEMENT OF THE MATERIAL. BACKFILL MATERIAL SHALL THEN BE PLACED WITHIN THE REMAINING CAVITIES OF THE PLANT PIT, TAMPING AND WATERED AGAIN TO ENSURE SETTLEMENT OF THE BACKFILL MATERIAL. UNDER NO CIRCUMSTANCES SHALL ANY SOIL OR BACKFILL MATERIAL BE APPLIED ABOVE THE ROOT BALL OF THE PLANTS.

(3.6) GROUND COVERS SHALL BE PLANTED IN BEDS HAVING A MINIMUM DEPTH OF 4" BELOW THE PROPOSED ROOT DEPTH. PLANTS SHALL BE EVENLY SPACED AND SET TO MAINTAIN THE ORIGINAL GROWING DEPTH WHILE ALLOWING FOR A 2" TOP DRESSING OF MULCH.

(4) PLANT MATERIAL AND MULCH

(4.1) THE NAMES OF PLANTS REQUIRED UNDER THIS CONTRACT CONFORM TO THOSE GIVEN IN L.H. BAILEY'S HORTUS THIRD, 1976 EDITION. NAMES OF VARIETIES NOT INCLUDED THEREIN CONFORM GENERALLY WITH NAMES ACCEPTED IN THE NURSERY TRADE. ALL PLANTS SHALL HAVE A HABIT OF GROWTH THAT IS NORMAL FOR THEIR SPECIES AND THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WITH WELL DEVELOPED ROOT SYSTEMS. ALL PLANT MATERIAL SHALL BE FREE FROM INSECT PESTS, PLANT DISEASES, AND INJURIES. ALL PLANTS SHALL EQUAL OR EXCEED THE MEASUREMENTS SPECIFIED IN THE PLANT LIST, WHICH ARE MINIMUM ACCEPTABLE SIZES. TREES SHALL HAVE SINGLE TRUNKS EXCEPT AS NOTED. ALL SHRUBS SHALL BE HEALTHY, VIGOROUS, AND OF GOOD COLOR. ONLY DAMAGED OR BROKEN BRANCHES OF PLANT MATERIAL MAY BE PRUNED AND ANY NECESSARY PRUNING SHALL BE DONE AT THE TIME OF PLANTING. HOWEVER, UNDER NO CIRCUMSTANCES SHALL THE CENTRAL LEADER OF A PLANT BE PRUNED.

(4.2) ALL TAGS, STRINGS OR ANY OTHER MATERIAL ATTACHED TO THE PLANTS SHALL BE REMOVED AT THE TIME OF THE PLANTING. BALLING AND BURLAPPING OF PLANTS SHALL FOLLOW THE CODE OF STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN STANDARD FOR NURSERY STOCK.

(4.3) SUBSTITUTIONS WILL BE PERMITTED ONLY UPON SUBMISSION OF PROOF THAT ANY PLANT IS NOT OBTAINABLE. ALL SUBSTITUTIONS MUST BE AUTHORIZED BY THE OWNER OR THE OWNER'S REPRESENTATIVE IN WRITING PROVIDING FOR USE OF THE NEAREST EQUIVALENT OBTAINABLE SIZE OR VARIETY OF PLANT HAVING THE SAME ESSENTIAL CHARACTERISTICS AS THE ORIGINAL VARIETY WITH AN EQUITABLE ADJUSTMENT OF CONTRACT PRICE.

(4.4) BALLED AND BURLAPPED PLANTS (B&B) SHALL BE DUG WITH FIRM, NATURAL BALLS OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS THE FIBROUS AND FEEDING ROOT SYSTEM NECESSARY FOR FULL RECOVERY OF THE PLANT. BALLS SHALL BE FIRMLY WRAPPED WITH BURLAP OR SIMILAR MATERIAL AND BOUND WITH TWINE OR CORD. BURLAP SHALL NOT BE PULLED OUT FROM UNDER BALLS DURING PLANTING OPERATIONS. B&B PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY ON DELIVERY SHALL BE COVERED WITH MOIST SOIL, MULCH, OR OTHER MATERIAL TO PROVIDE PROTECTION FROM DRYING WINDS AND SUN.

(4.5) PLANTS NOTED "CONTAINER" ON THE PLANT LIST MUST BE

CONTAINER GROWN WITH WELL ESTABLISHED ROOT SYSTEMS. LOOSE CONTAINERIZED PLANT MATERIAL WILL NOT BE ACCEPTED. ALL PLANTS INJURED AND PLANTS WITH ROOT BALLS BROKEN DURING TRANSPORT OR PLANTING OPERATIONS WILL BE REJECTED. BARE-ROOTED PLANTS (BR) SHALL BE PLANTED OR HEELED-IN IMMEDIATELY UPON DELIVERY. ALL PLANTS SHALL BE WATERED AS NECESSARY UNTIL PLANTED.

(4.6) NEW PLANTINGS SHALL BE LOCATED WHERE SHOWN ON THE PLAN EXCEPT WHERE OBSTRUCTIONS BELOW GROUND ARE ENCOUNTERED OR WHERE CHANGES HAVE BEEN MADE IN THE PROPOSED CONSTRUCTION. NECESSARY ADJUSTMENTS SHALL BE MADE ONLY AFTER APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE. REASONABLE CARE SHALL BE EXERCISED TO HAVE PLANTING PITS DUG AND SOIL PREPARED PRIOR TO MOVING PLANTS TO THEIR RESPECTIVE LOCATIONS TO ENSURE THAT THEY WILL NOT BE UNNECESSARILY EXPOSED TO DRYING OR PHYSICAL DAMAGE.

(4.7) A LIST OF PLANTS, INCLUDING SIZES, QUANTITIES AND OTHER REQUIREMENTS, IS SHOWN ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE QUANTITIES AS SHOWN ON THE DRAWINGS. IF DISCREPANCIES OCCUR IN THE QUANTITIES SHOWN, THE PLANTING PLANS SHALL GOVERN.

(4.10) AT THE TIME OF PLANTING, AND AS MANY TIMES LATER AS SEASONAL CONDITIONS REQUIRE, EACH PLANT AND THE SOIL AROUND IT SHALL BE THOROUGHLY WATERED. CARE SHOULD BE EXERCISED WHEN WATERING TO AVOID FLOODING OF PLANTS AND BEDS, DISPLACEMENT OF MULCH MATERIAL AND EROSION OF SOIL. AVOID USE OF HIGH PRESSURE HOSES. THE CONTRACTOR SHALL MAKE, AT HIS EXPENSE, WHATEVER ARRANGEMENTS MAY BE NECESSARY TO ENSURE AN ADEQUATE SUPPLY OF WATER TO MEET THE NEEDS OF THIS CONTRACT DURING INSTALLATION. THE CONTRACTOR SHALL ALSO FURNISH ALL NECESSARY HOSE, EQUIPMENT ATTACHMENTS AND ACCESSORIES FOR THE ADEQUATE WATERING OF PLANTED AREAS AS MAY BE REQUIRED UNTIL ACCEPTANCE BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

(4.11) MULCH SHALL BE CLEAN, GROUND OR SHREDDED BARK OR HARDWOOD MULCH. IN PLANTING AREAS WHERE SLOPES EXCEED 3:1 AND AT DRAINAGE DISPERSION POINTS OR ALONG NATURAL WATER WAYS WHERE CONCENTRATIONS OF SURFACE WATER EMPTY FROM CULVERTS OR PAVED DITCHES, HEAVY JUTE MESH SHALL BE INSTALLED. SHREDDED HARDWOOD OR BARK MULCH SHALL HAVE BEEN COMPOSTED FOR AT LEAST TWO MONTHS PRIOR TO APPLICATION. FRESHLY GROUND MULCH WILL NOT BE ACCEPTED. FINELY GROUND MULCH WHICH INHIBITS DRAINAGE, ENCOURAGES WEED GROWTH OR BECOMES WATERLOGGED WILL NOT BE ACCEPTED. MULCH SHALL BE COMPOSED OF SIMILAR SIZED FRAGMENTS AND SHALL NOT CONTAIN STICKS, CONES, LEAVES, UNSHREDDED PIECES, OR OTHER DELETERIOUS MATTER. ALL AZALEA AND CAMELLIA PLANTING BEDS SHALL HAVE 1" OF PINE STRAW MULCH UNDER 2" OF BARK OR SHREDDED HARDWOOD MULCH.

(4.12) ALL PLANTS SHALL BE MULCHED IMMEDIATELY AFTER PLANTING. GROUND COVERS SHALL BE MULCHED WITH A 2" LAYER OF SHREDDED HARDWOOD OR BARK MULCH. ALL OTHER PLANTING BEDS, SHRUBS AND TREE PLANTINGS SHALL BE MULCHED WITH A 3" MINIMUM LAYER OF MULCH. THIS MULCH SHALL ENTIRELY COVER THE AREA OF THE PLANTING PIT, BED, OR EARTH BERM AROUND EACH PLANT WITH THE EXCEPTION OF THE AREA IMMEDIATELY ADJACENT TO THE PLANT TRUNK OR TRUNKS. THE AREA IMMEDIATELY ADJACENT TO THE PLANT TRUNK OR TRUNKS SHALL BE LEFT FREE OF ANY MULCH.

(5) FERTILIZING

(5.1) THE FERTILIZER SHOULD BE A DRY SLOW RELEASE FORM OF FERTILIZER. IT SHOULD CONTAIN AT LEAST 25-50% WATER INSOLUBLE NITROGEN. THE FERTILIZER SELECTED SHOULD ALSO HAVE A LOW ADJUSTED SALT INDEX TO PREVENT BURNING. THE N-P-K RATIO SHOULD NOT EXCEED 3-1-2 UNLESS THE SOIL TEST REVEALS THAT ADDITIONAL LEVELS OF P AND K ARE NECESSARY.

(5.2) FOR DECIDUOUS TREES, USE OSMOCOTE (18-6-12) AT THE RATE EQUIVALENT TO 4 LBS ACTUAL N/1000 SQ FT OF ROOT ZONE AREA/YEAR. FOR EVERGREEN TREES USE 2 LBS ACTUAL N/1000 SQ FT OF ROOT ZONE AREA/YEAR.

(5.3) MIX THE FERTILIZER INTO THE BACKFILL SOIL OF THE TREE PITS. FOR SHRUB BEDS, MIX THE FERTILIZER INTO THE AREA THAT HAS BEEN ROTO-TILLED FOR THE PLANTS.

(5.4) THE FERTILIZER RATE FOR CONTINUOUS GROUND COVER AND SHRUB BEDS SHOULD BE DERIVED BY CALCULATING THE ENTIRE ROOT ZONE AREA. THE ROOT ZONE AREA IS FOUND BY MEASURING THE AREA CONTAINING THE MULTIPLE PLANT ROOTS. USE OSMOCOTE (18-6-12) AT A RATE EQUIVALENT TO 2 LBS OF N/1000 SQ FT OF ROOT ZONE AREA. THE FERTILIZER SHOULD BE EVENLY DISTRIBUTED WITHIN THE SHRUB BED SOIL.

(5.5) ALWAYS BE SURE THAT ADEQUATE MOISTURE IS AVAILABLE WHEN FERTILIZING SO THAT THE FERTILIZER WILL BE DISSOLVED INTO THE SOIL SOLUTION FOR ROOT UPTAKE AND TO AVOID BURNING THE ROOTS.

(6) STAKING

(6.1) ALL TREES SHALL BE STAKED ACCORDING TO THE TYPICAL DETAILS PROVIDED.

(6.2) THREE STAKES SHALL BE REQUIRED PER TREE. THE STAKES SHALL BE DRIVEN IN A RADIAL PATTERN, VERTICALLY INTO THE GROUND OUTSIDE THE EDGE OF THE ROOTBALL TO A DEPTH OF 2 1/2' TO 3', ON OPPOSITE SIDES OF THE TREE IN SUCH A MANNER AS NOT TO INJURE THE ROOT BALL OR ROOTS. STAKES FOR SUPPORTING TREES SHALL BE 1.5" X 1.5" SQUARE OR ROUND, BY 8'. THE STAKES SHALL BE SOUND WOOD TREATED WITH A SUITABLE WOOD PRESERVATIVE.

WIRE OR CABLE SIZES SHALL BE AS FOLLOWS: TREES UP TO 65 MM (2.5 IN.) CALIPER - 14 GAUGE TREES 65 MM (2.5 IN.) TO 75 MM (3 IN.) CALIPER - 12 GAUGE TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 35MM (1.5 IN.) OF GROWTH AND BUFFER ALL BRANCHES FROM THE WIRE. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A

MINIMUM OF 12 MM (0.5 IN.).

(6.3) WOODEN STAKES AND WIRE TIES SHOULD BE REMOVED AFTER ONE YEAR.

(7) CHEMICAL APPLICATION

(7.1) ALL PESTICIDES SHALL BE PRODUCTS OF RECOGNIZED COMMERCIAL MANUFACTURERS, AND SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL PESTICIDE LAWS. PESTICIDES SHALL BE APPLIED WITH CALIBRATED EQUIPMENT ACCORDING TO EPA LABEL RESTRICTIONS AND REGULATIONS BY A CERTIFIED APPLICATOR. ANY DAMAGE INCURRED TO THE SITE, ADJACENT PROPERTIES, OR APPLICATOR DURING PESTICIDE APPLICATIONS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

(7.2) PESTICIDES SHOULD BE USED ONLY WHEN NECESSARY TO TREAT AN OUTBREAK OF A HARMFUL PEST OR DISEASE PROBLEM. THE OWNER OR THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED 24 HOURS PRIOR TO THE APPLICATION OF ANY PESTICIDE.

(8) MAINTENANCE AND GUARANTEE

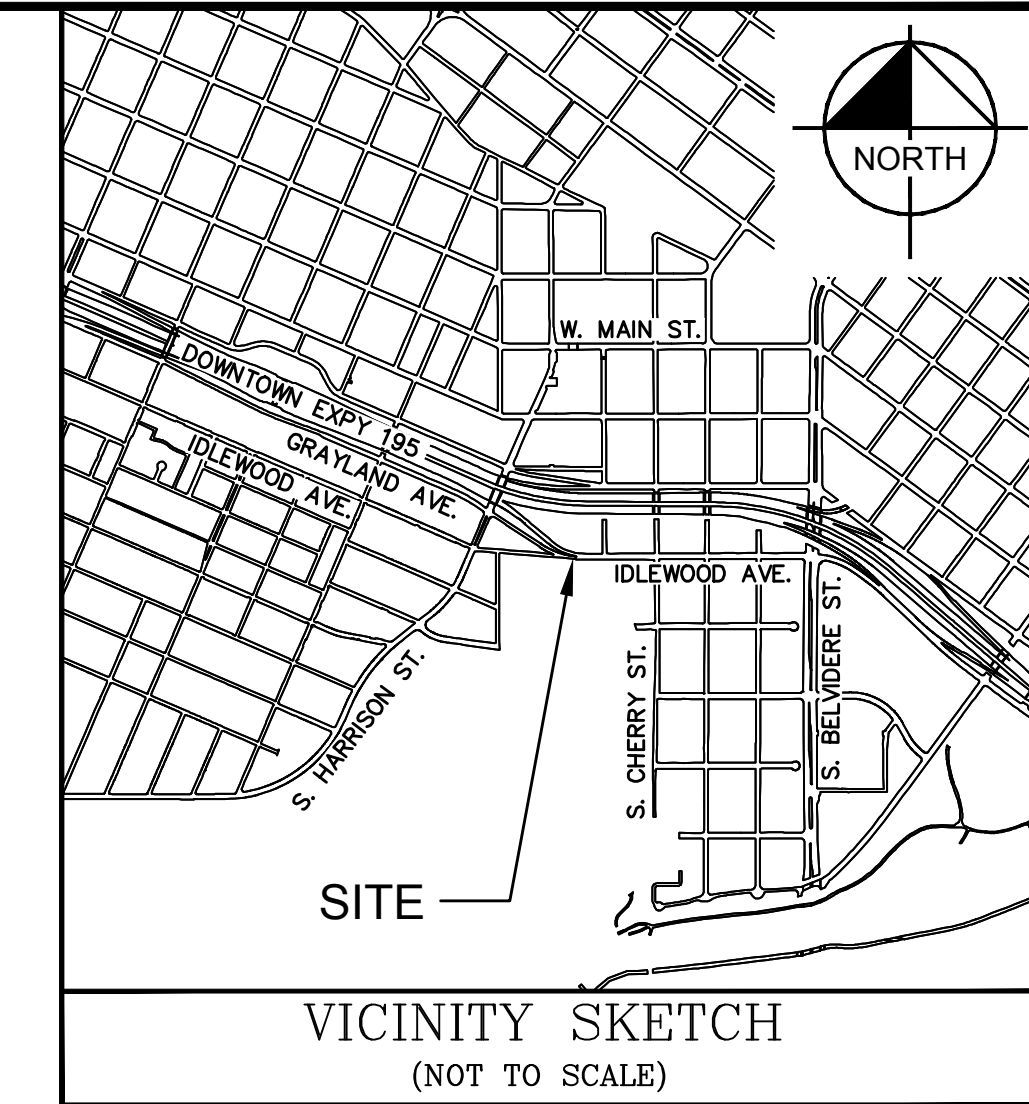
(8.1) THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING HIS WORK FOR THE PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER OR THE OWNER'S REPRESENTATIVE. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, CULTIVATING, MULCHING, REMOVAL OF DEAD MATERIALS, RESETTling OF PLANTS TO PROPER GRADES OR UPRIGHT POSITIONS, RESTORATION OF EARTH BERMS, AND OTHER NECESSARY OPERATIONS. ADEQUATE PROTECTION FOR LAWN AREAS AGAINST TRESPASSING DURING PLANTING OPERATIONS AND AGAINST DAMAGE OF ANY KIND SHALL BE PROVIDED. NOTHING IN THESE NOTES IS INTENDED TO RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO REPAIR EXISTING LAWN AREAS DAMAGED BY WORKMEN ENGAGED IN THE COMPLETION OF THIS PROJECT.

(8.2) INSPECTION OF THE WORK TO DETERMINE COMPLETION OF THE CONTRACT EXCLUSIVE OF THE POSSIBLE REPLACEMENT OF PLANTINGS, WILL BE MADE BY THE OWNER OR THE OWNER'S REPRESENTATIVE AT THE CONCLUSION OF THE INSTALLATION PERIOD UPON WRITTEN NOTICE REQUESTING SUCH INSPECTION. REQUEST SHALL BE SUBMITTED BY CONTRACTOR AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED DATE FOR INSPECTION. AFTER INSPECTION, THE CONTRACTOR WILL BE NOTIFIED IN WRITING BY THE OWNER OR THE OWNER'S REPRESENTATIVE OF ACCEPTANCE OF THE WORK, EXCLUSIVE OF THE POSSIBLE REPLACEMENT OF PLANTS SUBJECT TO GUARANTEE; OR, IF THERE ARE ANY DEFICIENCIES, THE CONTRACTOR WILL BE NOTIFIED OF THE REQUIREMENTS NECESSARY FOR COMPLETION OF THE WORK. PLANTINGS SHALL NOT BE CONSIDERED ACCEPTED UNTIL ALL DEFICIENCIES HAVE BEEN CORRECTED AND APPROVED IN WRITING.

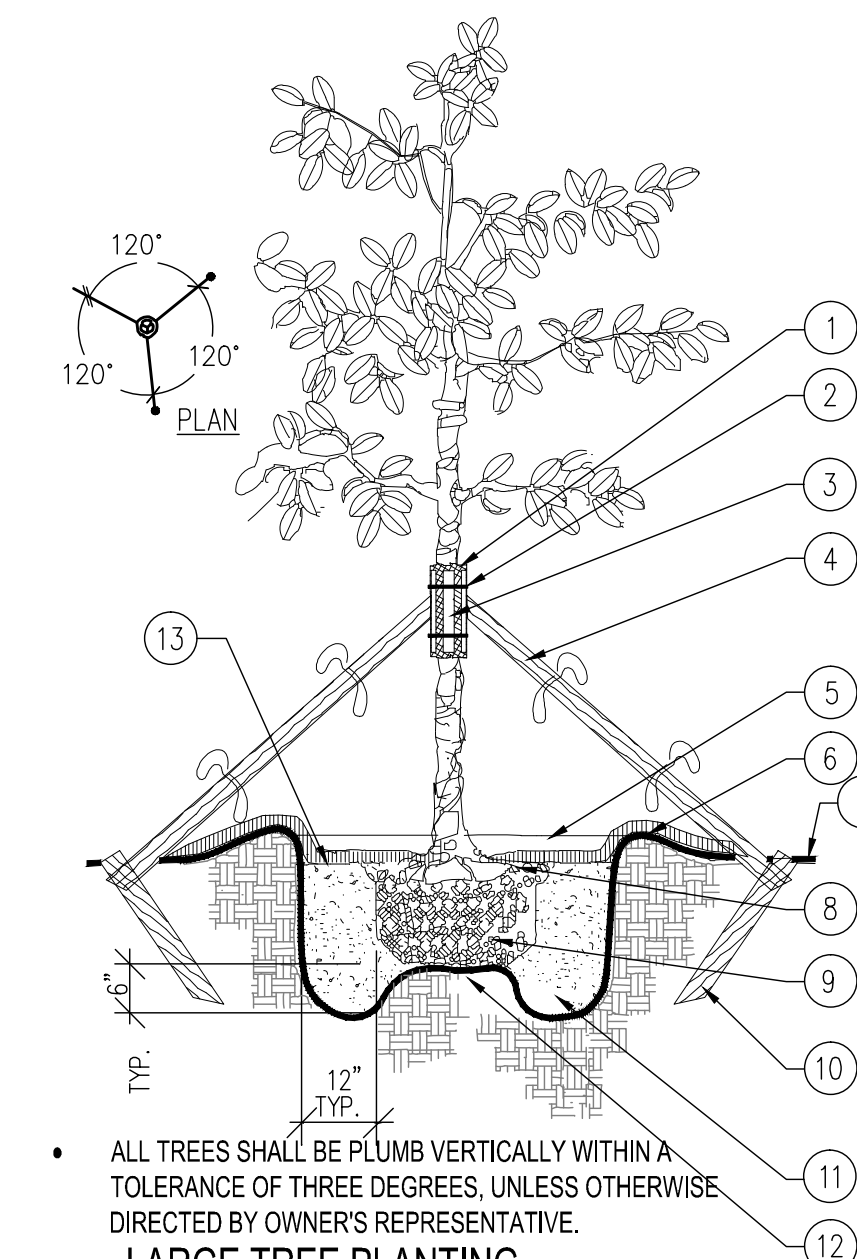
(8.3) NURSERY STOCK SHALL BE FULLY GUARANTEED FOR ONE FULL YEAR. ALL PLANTS THAT FAIL TO MAKE NEW GROWTH FROM A DORMANT CONDITION OR THAT DIE DURING THE FIRST YEAR AFTER PLANTING SHALL BE REPLACED. ALL REPLACEMENTS SHALL CONFORM WITH THE ORIGINAL SPECIFICATIONS AS TO SIZE AND TYPE. ALL COSTS OF REPLACEMENTS SHALL BE BORNE BY THE CONTRACTOR.

(9) ALL OTHER ITEMS NECESSARY TO MAKE WORK COMPLETE

(9.1) ANY PLANT MATERIAL NOT PLANTED SHALL BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UNUSED RUBBISH AND DEBRIS FROM THE SITE UPON COMPLETION OF HIS WORK.



- NOTES:
- A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
 - B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER. "TREE SAVER" ANCHORING SYSTEM MAY BE SUBSTITUTED FOR WOOD STAKING SYSTEM UPON APPROVAL BY OWNER OR OWNER'S REPRESENTATIVE.

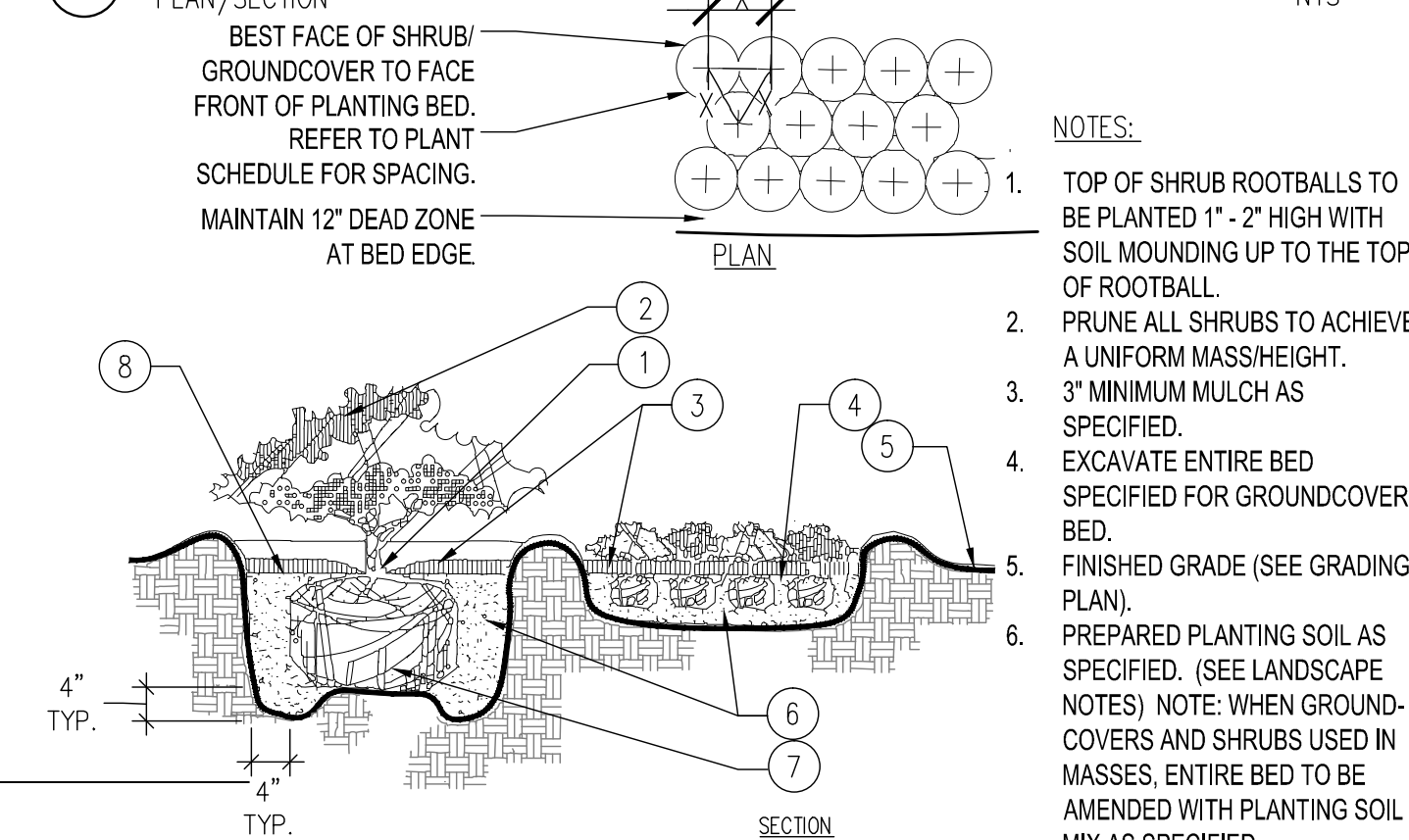


1 LARGE TREE PLANTING

SECTION

2 SHRUB / GROUNDCOVER PLANTING

PLAN/SECTION



- NOTES:
1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
 2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASSHEIGHT.
 3. 3" MINIMUM MULCH AS SPECIFIED.
 4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
 5. FINISHED GRADE (SEE GRADING PLAN).
 6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
 7. SCARIFY ROOTBALL SIDES AND BOTTOM.
 8. APPROVED WEED BARRIER

90% PLANS - 10/15/14
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 1700 WILLOW LAWN DRIVE, SUITE 200, RICHMOND, VA 23230
 PHONE: (804) 673-3882 FAX: (804) 673-3980

IDLEWOOD AVENUE ROUNDABOUT PROJECT

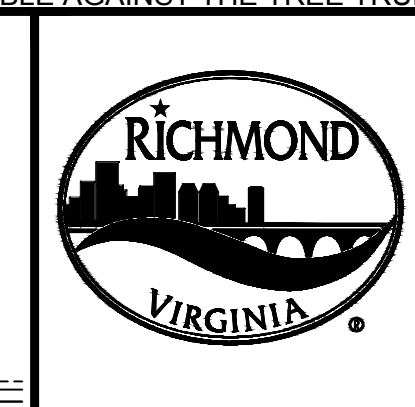
LANDSCAPE DETAILS

DESIGN BY: JNJ DRAWN BY: JNJ CHECKED BY: DMV	REVIEWED BY	FIELD NOTES	SCALE AS NOTED	DATE 10-15-14	DRAWING NO. O-28615	SHEET NO. 5
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<p>NOTES</p> <ol style="list-style-type: none"> 1. Lot dimensions in parentheses are from deed. 2. Property owners correct as of _____, 20__. 3. Ordinance Number _____. 4. Adopted _____. 5. Accepted _____. 	<p>REFERENCES</p> <p>BL, XX NW, NE, SW, SE</p>
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<p>Existing Curb & Gutter</p> <ul style="list-style-type: none"> - Sidewalk - Basin - Storm Sewer - Sewer Manhole - Sanitary Sewer (over) - Sanitary Sewer (over man) - Gas Line - Electric Line - Telephone/Telegraph - TV Cable - Water Line - Tree / Exist. Tree To Be Removed / Stump - Property Line 	<p>Existing Curb Cut Ramp</p> <ul style="list-style-type: none"> - Coping - Alley Crossing/Driveway - Fire Hydrant - Edge of Pavement - Fence - Cornerstone - Property Pin - Utility Pole <p>Proposed Sewer Manhole</p> <ul style="list-style-type: none"> - Basin - Curb & Gutter - Asphalt
--	---

<p>Proposed Conc. Sidewalk</p> <p>Castings: Water Valve</p> <ul style="list-style-type: none"> - Water Meter - Gas Drip - Gas Valve - Telephone Manhole - Electric Manhole <p>Proposed Curb Cut Ramp</p> <ul style="list-style-type: none"> - Decorative Light - Conduit - Conduit (Conc. Encased) - Retaining Wall 	<p>Legend</p>
--	---------------



<p>Technical</p> <p>Surveys Superintendent</p> <p>Project Engineer</p> <p>Maintenance Engineer</p> <p>City Traffic Engineer</p>	<p>Administrative</p> <p>Capital Project Administrator</p> <p>Deputy Director for Transportation / Public Works</p> <p>Director of Public Works</p>
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DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

PAVEMENT MARKING LEGEND

- (A) TYPE B, CLASS 1, YELLOW, 4" WIDTH
- (B) TYPE B, CLASS 1, WHITE, 4" WIDTH
- (C) TYPE D, CLASS 1, WHITE, 8" WIDTH
- (D) TYPE B, CLASS 1, WHITE, 24" WIDTH
- (E) TYPE B, CLASS 1, YELLOW, 4" WIDTH, DOUBLE LINE, 4" SPACE

- TYPE B, CLASS 1, SINGLE ELONGATED ARROW
- TYPE B, CLASS 1, DOUBLE ELONGATED ARROW
- YIELD LINE, 12" WIDTH, 4" SPACE

SIGNING LEGEND

- EXIST. GROUND MOUNTED SIGN SUPPORT
- PROP. GROUND MOUNTED SIGN SUPPORT
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO REMAIN

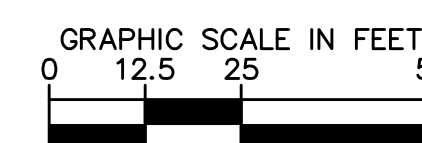
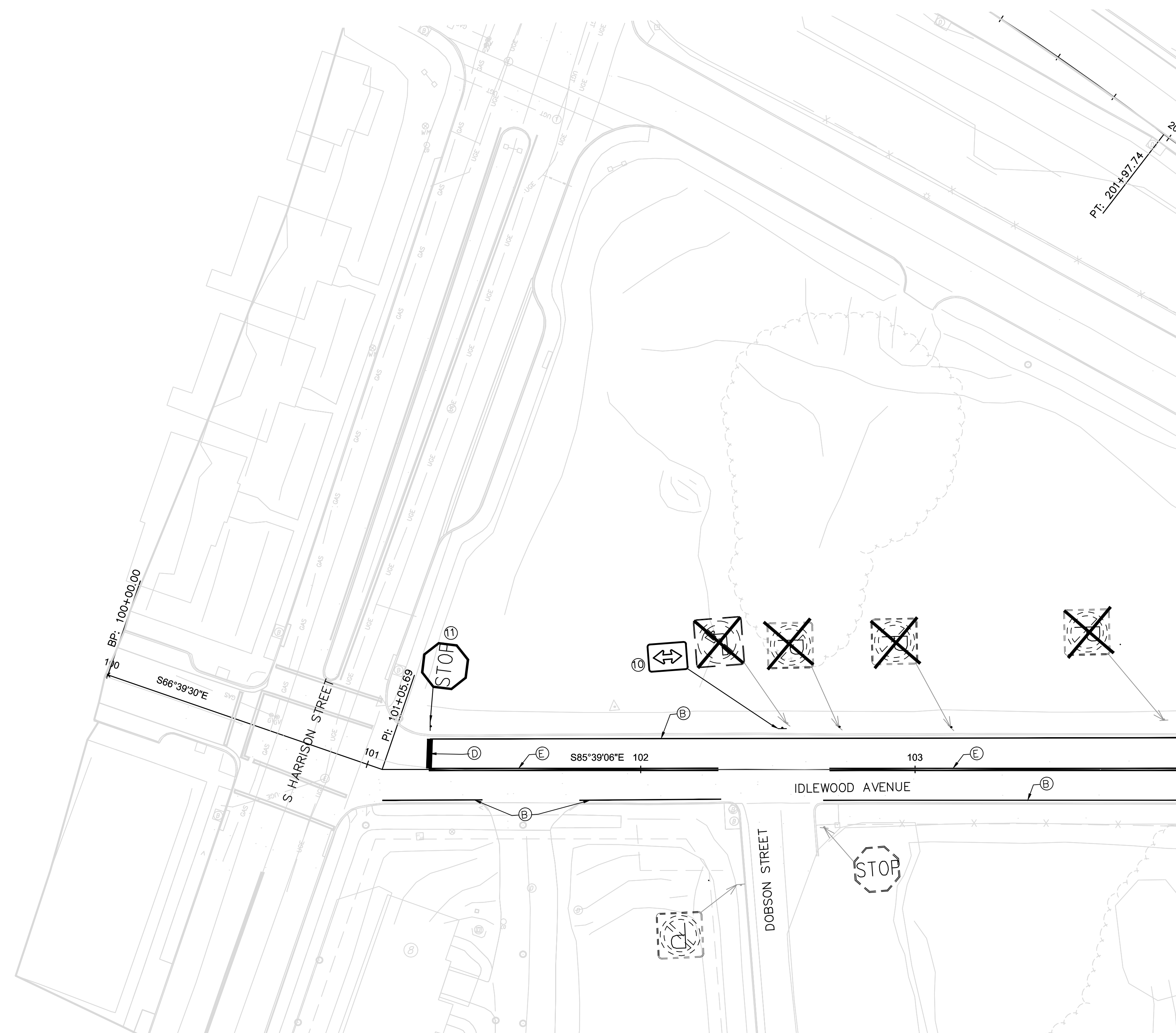
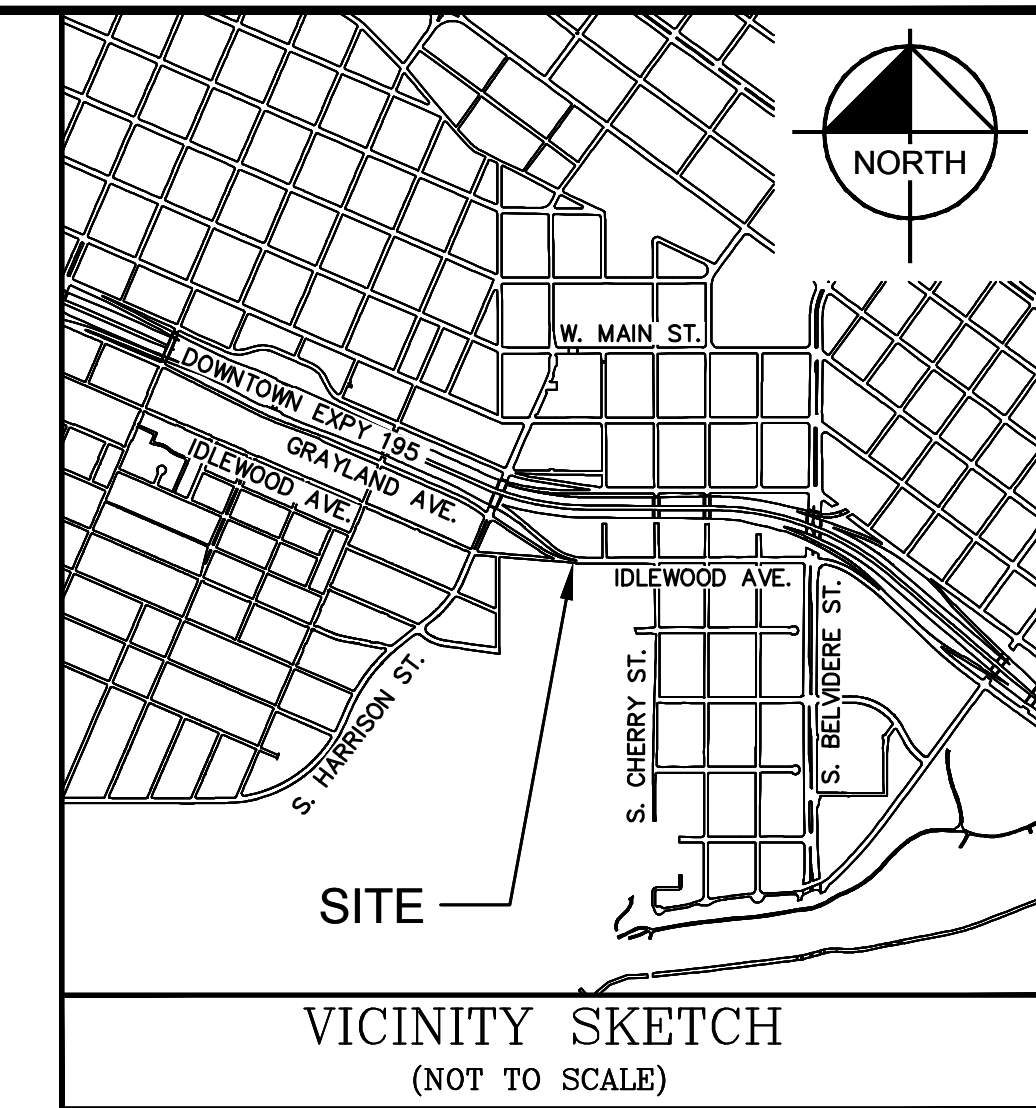
SIGN SCHEDULE

TEXT NO.	TEXT	SIGN STRUC. STD.	SIGN ASSEMBLY COMPONENTS			REMARKS
			MUTCD STD.	PANEL SIZE W	PANEL SIZE H	
10		U-TYPE STEEL	M6-4	21	15	1
11		U-TYPE STEEL	R1-1	30	30	1

STANDARD SIGNING & PAVEMENT MARKING NOTES

- ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING MANUALS, OR THE MOST RECENT REVISION THERETO:
 - A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - B. THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM CONTROL DEVICES.
 - C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
 - D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
- ALL PAVEMENT MARKINGS SHALL BE THE TYPE SHOWN IN THE LEGEND.
- PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS, AND TO COMPLY WITH STANDARDS REFERENCED ABOVE OR NUMBER NOTES.
- ANY EXISTING PAVEMENT MARKINGS THAT WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
- NOTE THAT ALL PAVEMENT MARKING/STRIPPING IS CONSIDERED PRELIMINARY, AND SUBJECT TO FIELD REVIEW PRIOR TO APPLICATION.
- ALL EXISTING MARKINGS WITHIN LIMITS OF OVERLAY SHALL BE ERADICATED PER VDOT SPECIFICATIONS.

- NOTES:
- ALL SIGNS SHALL BE ORIENTED AS SHOWN ON THE PLANS.
 - SIGN COLOR COMBINATIONS SHALL BE IN ACCORDANCE WITH THE FHWA SHS BOOK AND 2011 VIRGINIA SHS BOOK OR AS NOTED IN THE PLANS.
 - ALL POSITIVE CONTRAST GUIDE AND SPECIFIC SERVICE SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-3 OR L-4 UNLESS OTHERWISE NOTED IN THE REMARKS. ALL OTHER SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-1 OR L-2 UNLESS OTHERWISE NOTED IN THE REMARKS.
 - ALL BLACK SHEETING SHALL BE NON-REFLECTIVE.
 - SIGN STRUCTURES SHALL BE INSTALLED PER THE NOTED SIGN STD.
 - ALL STD. STP-1 STRUCTURES TO BE SINGLE POST UNLESS OTHERWISE NOTED.



90% PLANS - 10/15/14
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Kimley»Horn

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 PHONE: (804) 673-3882 FAX: (804) 673-3980

IDLEWOOD AVENUE ROUNDABOUT PROJECT

SIGNING AND MARKING PLAN

PROJECT #: 102070
 CIP: 040-290-8130

DESIGN BY: M-H	REVIEWED BY:	FIELD NOTES	SCALE	DATE	DRAWING NO.	SHEET NO.
DRAWN BY: RSP			AS NOTED	10-15-14	0-28615	6
CHECKED BY: GJM						

DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA



NOTES	LEGEND	LEGEND	LEGEND
1. Lot dimensions in parentheses are from deed. 2. Property owners correct as of _____, 20__ 3. Ordinance Number _____ 4. Adopted _____ 5. Accepted _____	Existing Curb & Gutter - Sidewalk - Basin - Storm Sewer - Sewer Manhole - Sanitary Sewer (over main) - Gas Line - Electric Line - Telephone/Telegraph - TV Cable - Water Line - Tree / Exist. Tree To Be Removed / Stump - Property Line	Existing Curb Cut Ramp - Coping - Alley Crossing/Driveway - Fire Hydrant - Edge of Pavement - Fence - Cornerstone - Property Pin - Utility Pole Proposed Sewer Manhole - Basin - Curb & Gutter - Asphalt	Proposed Conc. Sidewalk - Brick Sidewalk Castings: Water Valve - Water Meter - Gas Drip - Gas Valve - Telephone Manhole - Electric Manhole Proposed Curb Cut Ramp - Decorative Light - Conduit - Conduit (Conc. Encased) - Retaining Wall

DESIGNED BY:

MATCH LINE - STA. 104+00.00 - SEE SHEET 7

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SIGNING & PAVEMENT MARKING NOTES

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6. ALL EXISTING MARKINGS WITHIN LIMITS OF OVERLAY SHALL BE ERADICATED PER VDOT SPECIFICATIONS.

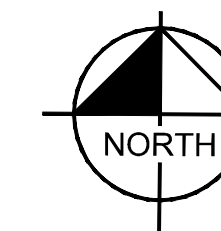
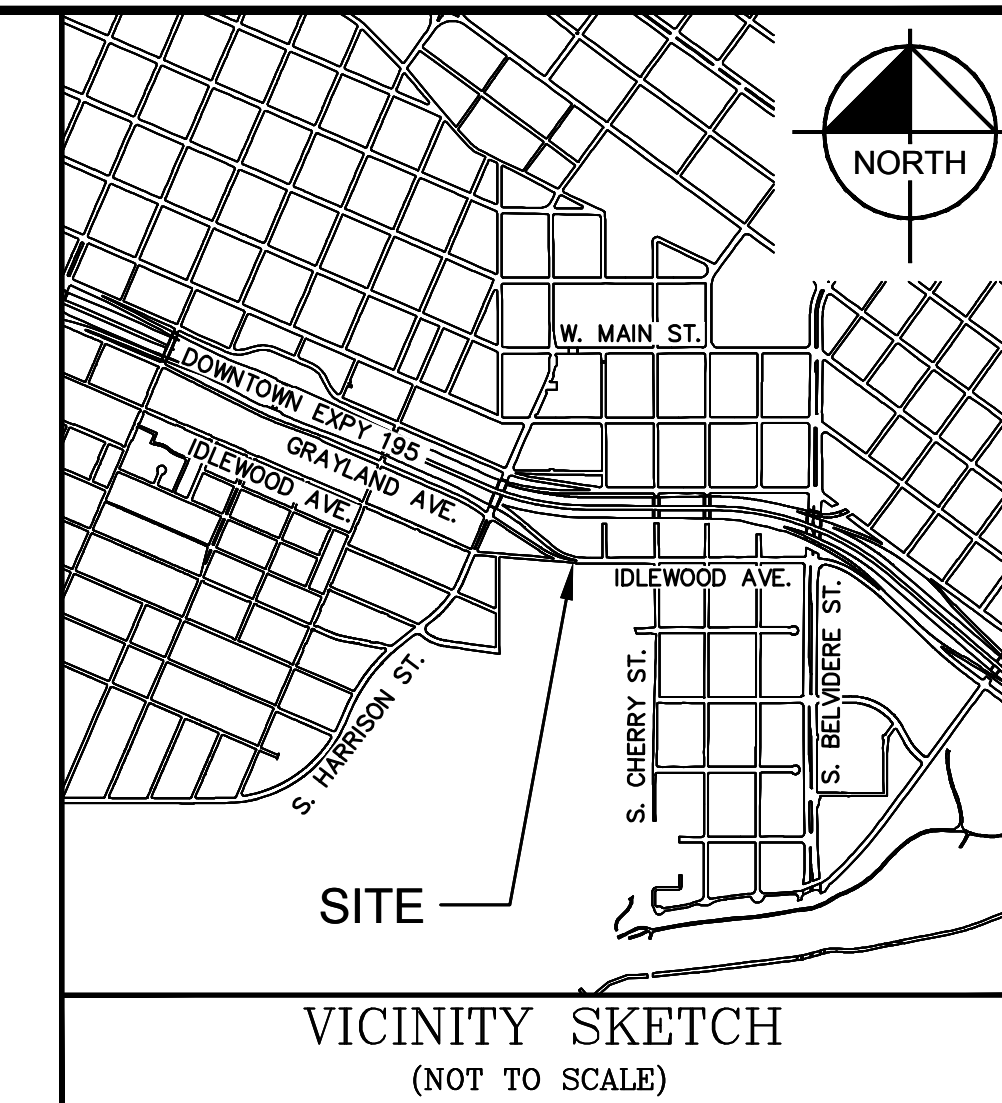
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SIGNING LEGEND

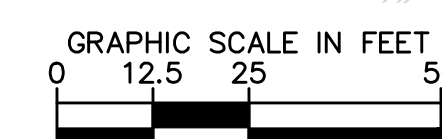
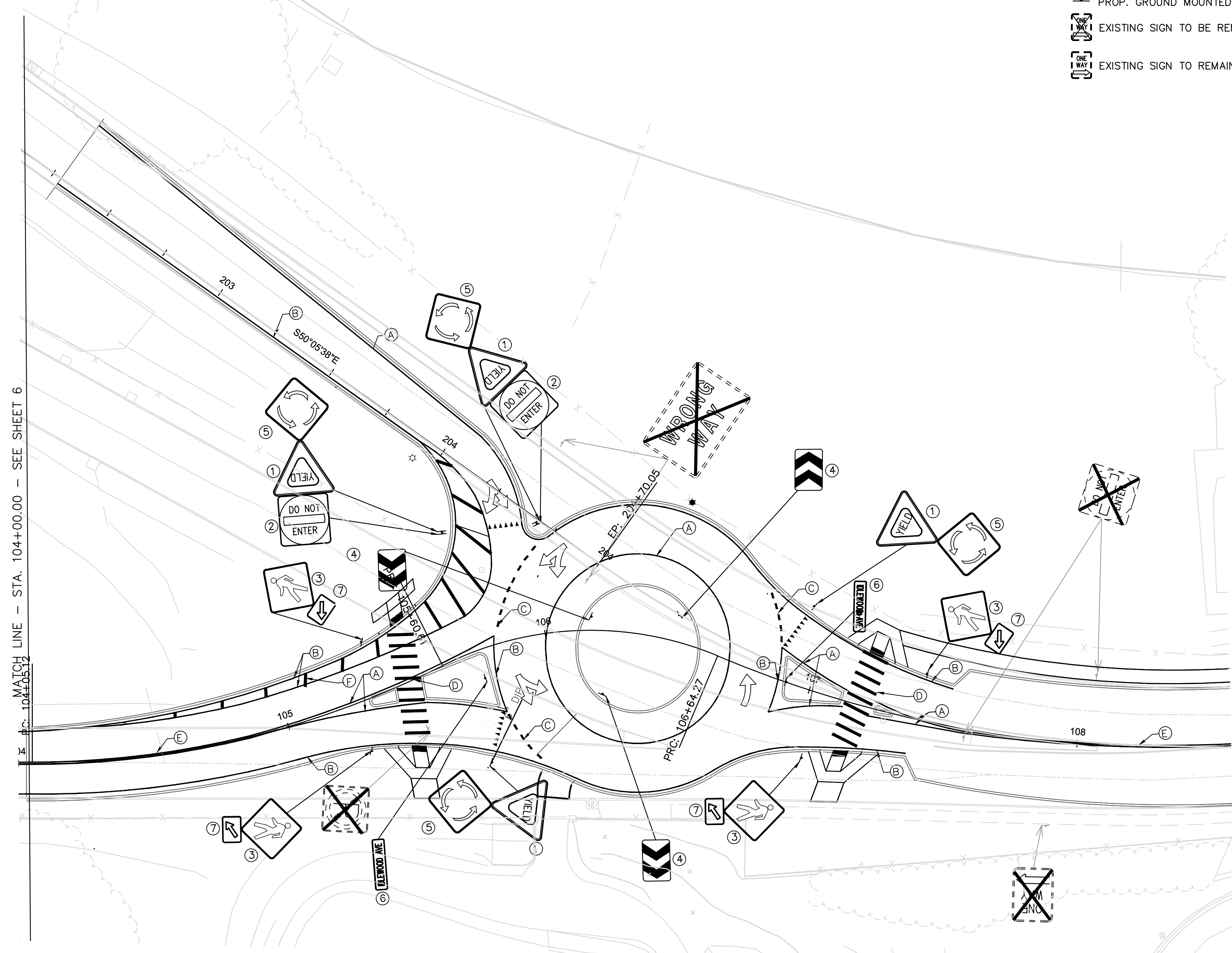
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- TYPE B, CLASS 1, SINGLE ELONGATED ARROW
- TYPE B, CLASS 1, DOUBLE ELONGATED ARROW
- YIELD LINE, 12" WIDTH, 4" SPACE



SIGN SCHEDULE

TEXT NO.	TEXT	SIGN STRUC. STD.	MUTCD STD.	SIGN ASSEMBLY COMPONENTS		QTY.	REMARKS
				PANEL W	PANEL H		
1	YIELD	U-TYPE STEEL	R1-2	36	36	4	
2	DO NOT ENTER	U-TYPE STEEL	R5-1	36	36	2	
3	PEDESTRIAN	U-TYPE STEEL	R5-1A	36	24	4	
4	DOUBLE ELONGATED ARROW	U-TYPE STEEL	R6-4	30	24	3	
5	YIELD		R6-5P	30	30	4	MOUNTED ON POST WITH SIGN 1
6	IDLEWOOD AVE	U-TYPE STEEL	D3-1	48	9	2	
7	YIELD		W16-7F	48	9	4	MOUNTED ON POST WITH SIGN 3



- NOTES:
- ALL SIGNS SHALL BE ORIENTED AS SHOWN ON THE PLANS.
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CHECKED BY: G.M.						

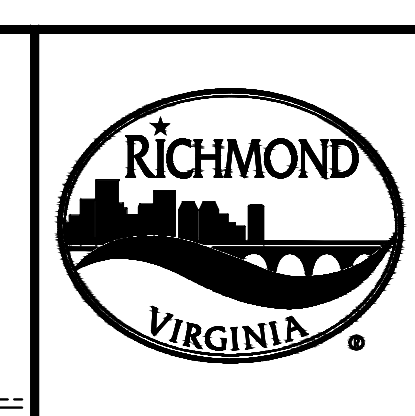
NOTES

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

REFERENCES: BL, XX NW, NE, SW, SE

REVISIONS

Existing	Proposed	Legend
Curb & Gutter	Conc. Sidewalk	Existing Curb Cut Ramp
Sidewalk	Brick Sidewalk	Coping
Basin	Castings: Water Valve	Alley Crossing/Driveway
Storm Sewer	Water Meter	Fire Hydrant
Sewer Manhole	Gas Drip	Edge of Pavement
Sanitary Sewer (over main)	Gas Valve	Fence
Sanitary Sewer (under main)	Telephone Manhole	Cornerstone
Gas Line	Electric Manhole	Property Pin
Electric Line	Proposed Curb Cut Ramp	Utility Pole
Sanitary Sewer (over main)	Decorative Light	Manhole
Gas Line	Conduit	Basin
Electric Line	Conduit (Conc. Encased)	Curb & Gutter
Telephone/Telegraph	Retaining Wall	Asphalt
TV Cable		
Water Line		
Tree / Exist. Tree To Be Removed / Stump		
Property Line		



Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

STANDARD
SIGNING & PAVEMENT MARKING NOTES

1. ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING MANUALS, OR THE MOST RECENT REVISION THERETO:

- A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- B. THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM CONTROL DEVICES.
- C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
- D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.

2. ALL PAVEMENT MARKINGS SHALL BE THE TYPE SHOWN IN THE LEGEND.

3. PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS, AND TO COMPLY WITH STANDARDS REFERENCED ABOVE OR NUMBER NOTES.

4. ANY EXISTING PAVEMENT MARKINGS THAT WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.

5. NOTE THAT ALL PAVEMENT MARKING/STRIPPING IS CONSIDERED PRELIMINARY, AND SUBJECT TO FIELD REVIEW PRIOR TO APPLICATION.

6. ALL EXISTING MARKINGS WITHIN LIMITS OF OVERLAY SHALL BE ERADICATED PER VDOT SPECIFICATIONS.

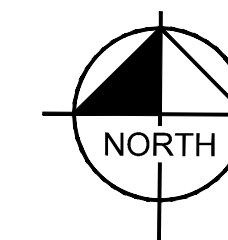
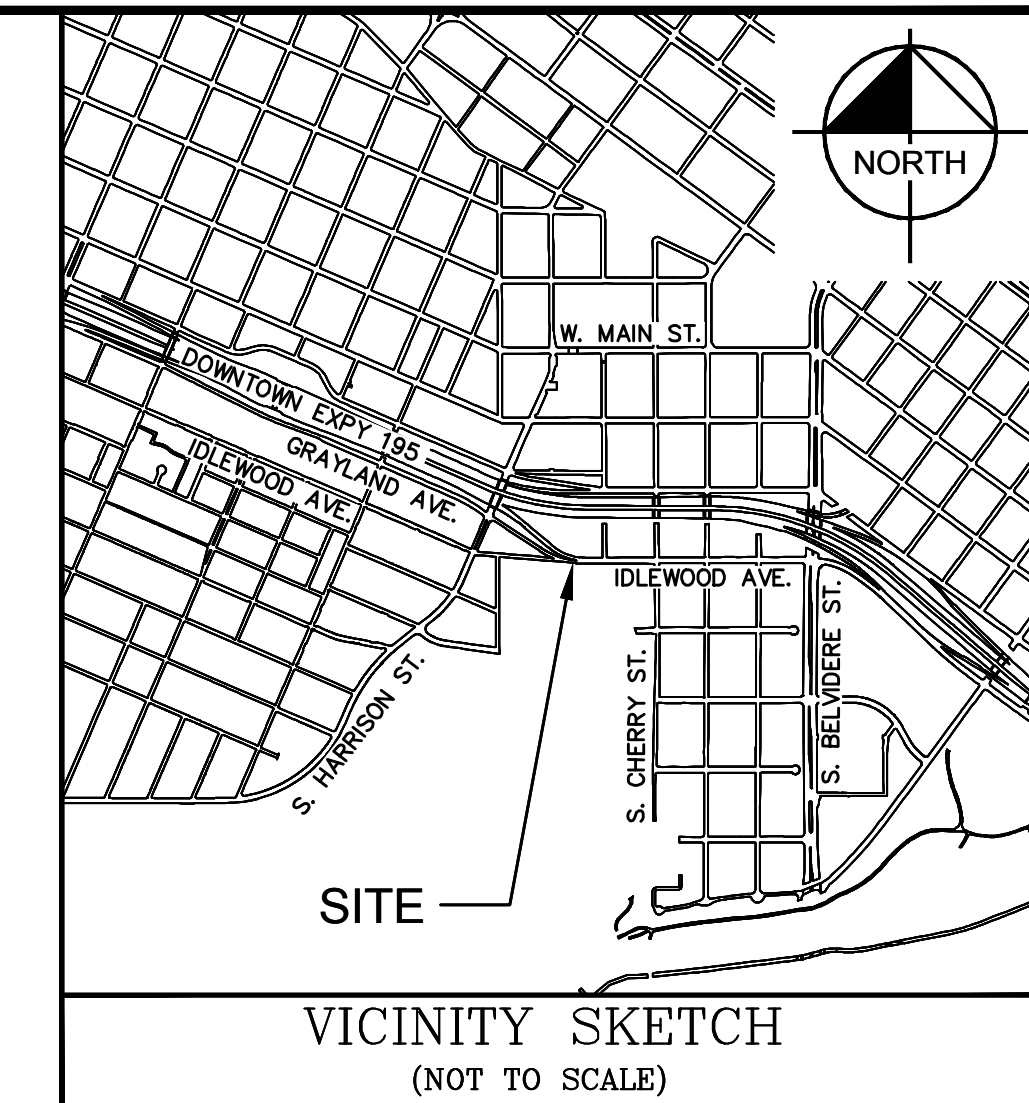
PAVEMENT MARKING LEGEND

- (A) TYPE B, CLASS 1, YELLOW, 4" WIDTH
- (B) TYPE B, CLASS 1, WHITE, 4" WIDTH
- (C) TYPE D, CLASS 1, WHITE, 8" WIDTH
- (D) TYPE B, CLASS 1, WHITE, 24" WIDTH
- (E) TYPE B, CLASS 1, YELLOW, 4" WIDTH, DOUBLE LINE, 4" SPACE
- (F) ERADICATE PAVEMENT MARKING

- ↔ TYPE B, CLASS 1, SINGLE ELONGATED ARROW
- ↔↔ TYPE B, CLASS 1, DOUBLE ELONGATED ARROW
- YIELD LINE, 12" WIDTH, 4" SPACE

SIGNING LEGEND

- EXIST. GROUND MOUNTED SIGN SUPPORT
- PROP. GROUND MOUNTED SIGN SUPPORT
- ✕ EXISTING SIGN TO BE REMOVED



SIGN LEGEND
**FOR SIGNS ON SPAN WIRE TO BE REMOVED

- S-1 NO TURN ON RED
- S-2 ONLY
- S-3 LEFT LANE MUST TURN LEFT
- S-4 ONLY
- S-5 ONLY

SIGNAL LEGEND

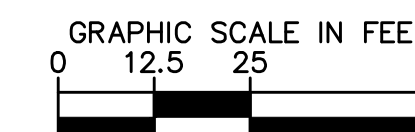
- 2,4,6
- (R)
- (Y)
- (G)

CONSTRUCTION NOTE

- 1 RELOCATE SIGNAL HEAD

90% PLANS - 10/15/14
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

- NOTES:
- ALL SIGNS SHALL BE ORIENTED AS SHOWN ON THE PLANS.
 - SIGN COLOR COMBINATIONS SHALL BE IN ACCORDANCE WITH THE FHWA SHS BOOK AND 2011 VIRGINIA SHS BOOK OR AS NOTED IN THE PLANS.
 - ALL POSITIVE CONTRAST GUIDE AND SPECIFIC SERVICE SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-3 OR L-4 UNLESS OTHERWISE NOTED IN THE REMARKS. ALL OTHER SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-1 OR L-2 UNLESS OTHERWISE NOTED IN THE REMARKS.
 - ALL BLACK SHEETING SHALL BE NON-REFLECTIVE.
 - SIGN STRUCTURES SHALL BE INSTALLED PER THE NOTED SIGN STD.
 - ALL STD. STP-1 STRUCTURES TO BE SINGLE POST UNLESS OTHERWISE NOTED.



TEXT NO.	TEXT	SIGN STRUC. STD.	SIGN ASSEMBLY COMPONENTS		QTY.	REMARKS
			MUTCD STD.	PANEL SIZE W x H		
1		U-TYPE STEEL	R8-3A	24 x 24	2	

NOTE: THE CONTRACTOR SHALL DELIVER ANY EXISTING TRAFFIC SIGNS AND TRAFFIC SIGNAL EQUIPMENT REMOVED TO THE CITY OF RICHMOND TRAFFIC SIGNAL SHOP AT 2802 HERMITAGE ROAD. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE DISPOSAL OF ANY EXISTING TRAFFIC SIGNAL EQUIPMENT IF THE CITY OF RICHMOND TRAFFIC SIGNAL SHOP REFUSES AT DELIVERY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE 48 HOURS PRIOR TO DELIVERY BY CALLING (804) 646-1469.

Kimley»Horn

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1700 WILLOW LAWN DRIVE, SUITE 200, RICHMOND, VA 23230
PHONE: (804) 673-3882 FAX: (804) 673-3980

IDLEWOOD AVENUE ROUNDABOUT PROJECT

SIGNING AND MARKING PLAN

PROJECT #: 102070
CIP: 040-290-8130

DESIGN BY: M.H.
DRAWN BY: RSP
CHECKED BY: G.M.

REVIEWED BY

FIELD NOTES

SCALE

DATE

DRAWING NO.

SHEET NO.

AS NOTED 10-15-14

0-28615

8

Technical

- Surveys Superintendent
- Project Engineer
- Maintenance Engineer
- City Traffic Engineer

Administrative

- Capital Project Administrator
- Deputy Director for Transportation / Public Works
- Director of Public Works

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA



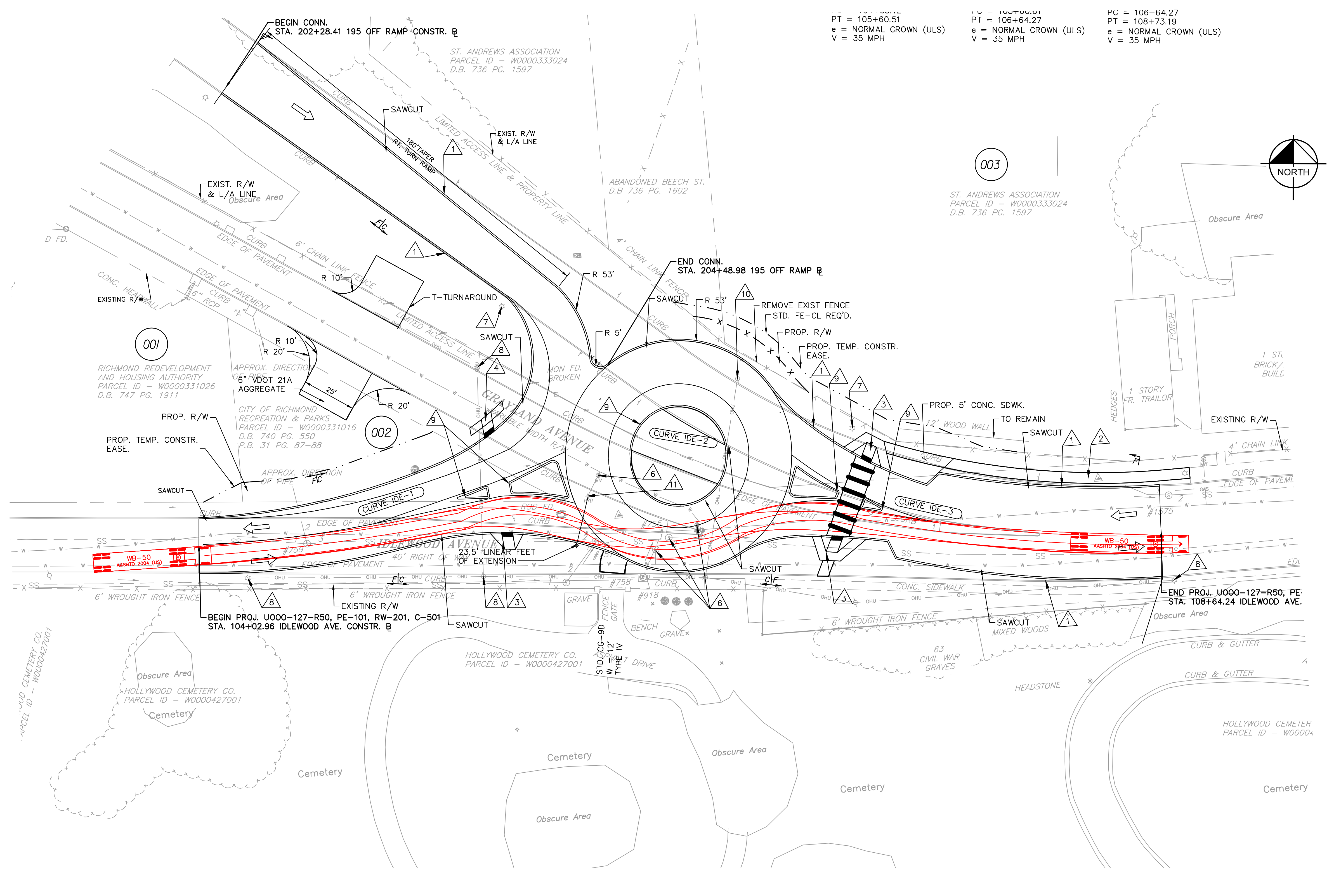
Existing		Proposed	
Curb & Gutter		Proposed Conc. Sidewalk	
Sidewalk		Brick Sidewalk	
Basin		Castings: Water Valve	
Storm Sewer		Water Meter	
Sewer Manhole		Gas Driv	
Sanitary Sewer (over)		Gas Valve	
Sanitary Sewer (under)		Telephone Manhole	
Gas Line		Electric Manhole	
Electric Line		Proposed Curb Cut Ramp	
Telephone/Telegraph		Decorative Light	
TV Cable		Conduit	
Water Line		Conduit (Conc. Encased)	
Tree / Exist. Tree To Be Removed / Stump		Retaining Wall	
Property Line			

NOTES

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

REFERENCES	REVISIONS
BL, XX NW, NE, SW, SE	

Plotted By: Medina, Enit Sheet Set: KHA Layout: EXHIBIT 1 August 21, 2014 02:09:12pm K:\RC_RDW\113157_RC_OnCall\011 Idlewood Roundabout\CA00_Sheets\EXHIBITS\EXHIBIT 1.dwg
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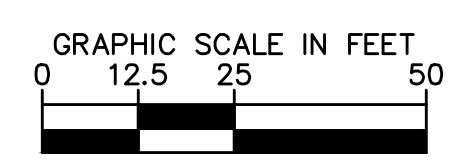


PT = 105+60.51
 e = NORMAL CROWN (ULS)
 v = 35 MPH

PT = 106+64.27
 e = NORMAL CROWN (ULS)
 v = 35 MPH

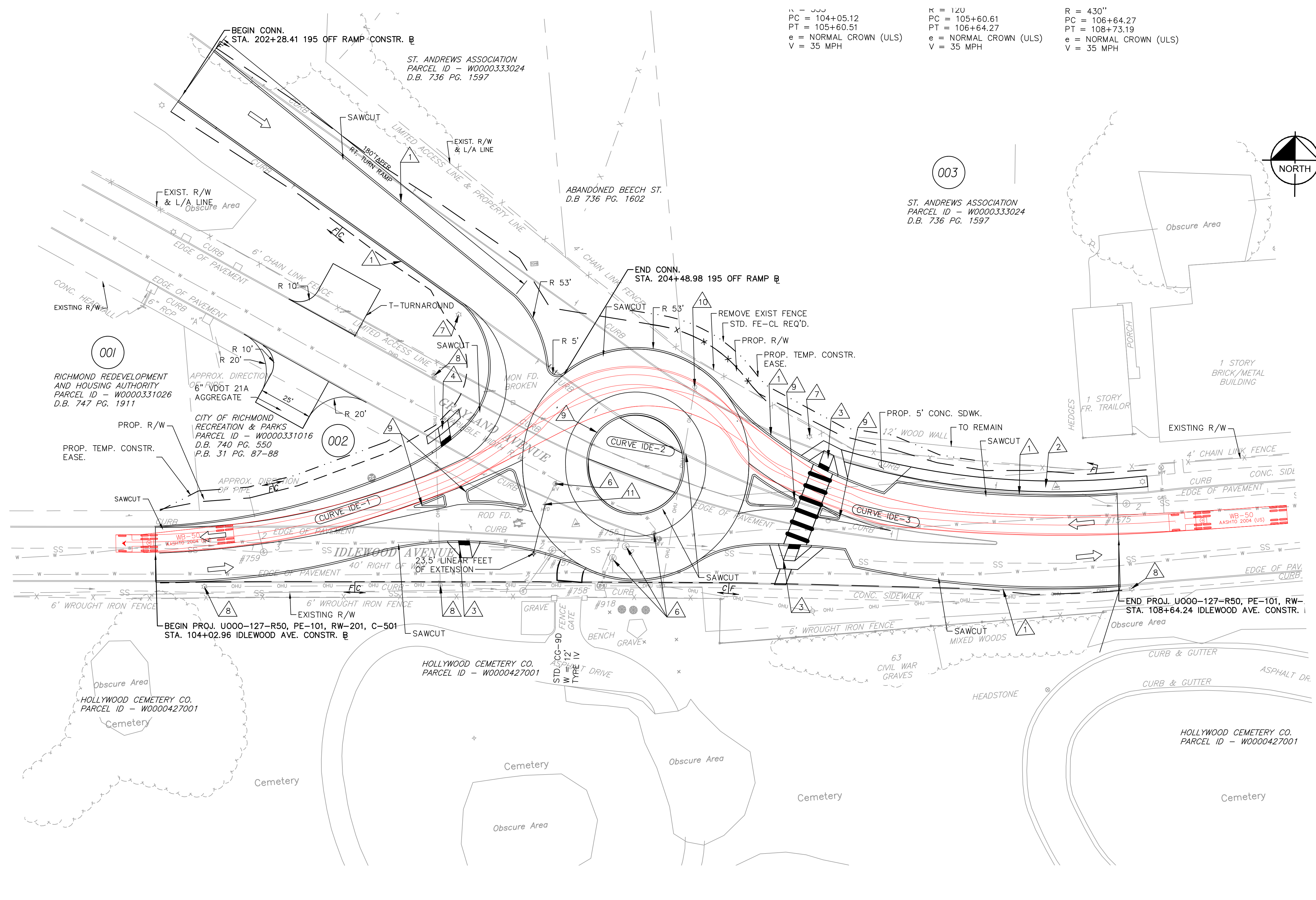
PT = 108+73.19
 e = NORMAL CROWN (ULS)
 v = 35 MPH

DESIGN VEHICLE = ASHTO WB-50



IDLEWOOD AVENUE ROUNDABOUT	AUTOTURN EXHIBIT IDLEWOOD AVENUE WEST TO EAST MOVEMENT	RICHMOND VIRGINIA	REVISIONS	DATE	BY	
			No.			
			© 2014 KIMLEY-HORN AND ASSOCIATES, INC. 1700 MILLION LANE DR. SUITE 200, RICHMOND, VA 23230 PHONE: 804-673-3882 FAX: 804-673-3980 WWW.KIMLEY-HORN.COM			
KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
	8/11/2014					
SHEET NUMBER			1 OF 8			

Plotted By: Medina, Eric Sheet Set: KHA Layout: EXHIBIT 2 August 21, 2014 02:09:14pm K:\RDC\RDW\113157-RIC_OnCall\011 Idlewood Roundabout\CADD\Sheets\EXHIBITS\EXHIBIT 2.dwg
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$\mu = 0.15$
 $PC = 104+05.12$
 $PT = 105+60.51$
 $e = \text{NORMAL CROWN (ULS)}$
 $V = 35 \text{ MPH}$

$K = 12U$
 $PC = 105+60.61$
 $PT = 106+64.27$
 $e = \text{NORMAL CROWN (ULS)}$
 $V = 35 \text{ MPH}$

$R = 430'$
 $PC = 106+64.27$
 $PT = 108+73.19$
 $e = \text{NORMAL CROWN (ULS)}$
 $V = 35 \text{ MPH}$



003

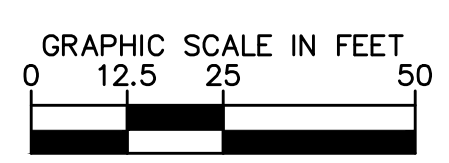
ST. ANDREWS ASSOCIATION
 PARCEL ID - W0000333024
 D.B. 736 PG. 1597

001
 RICHMOND REDEVELOPMENT
 AND HOUSING AUTHORITY
 PARCEL ID - W0000331026
 D.B. 747 PG. 1911

002

CITY OF RICHMOND
 RECREATION & PARKS
 PARCEL ID - W0000331016
 D.B. 740 PG. 550
 P.B. 31 PG. 87-88

DESIGN VEHICLE = ASHTO WB-50

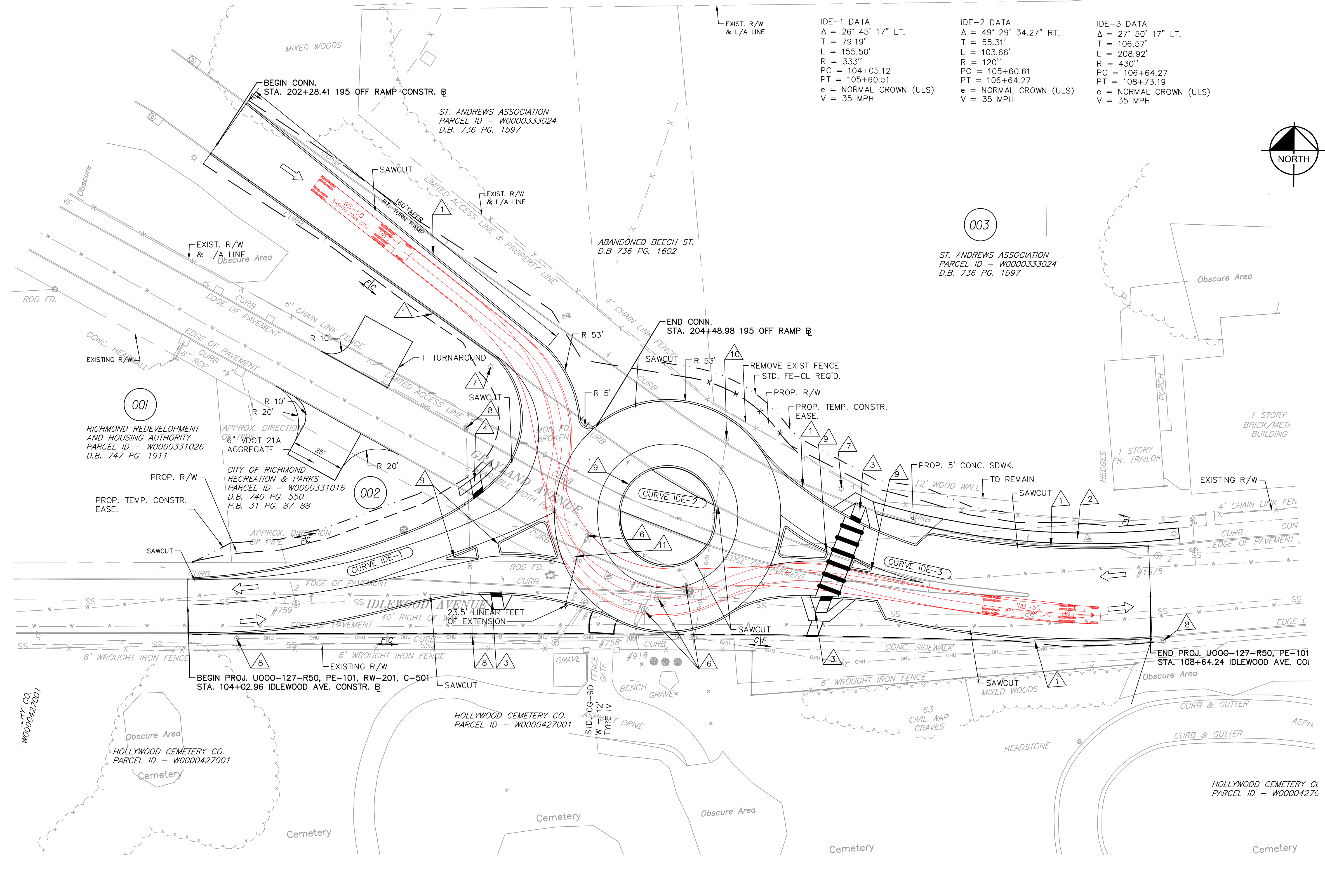


IDLEWOOD AVENUE ROUNDABOUT	AUTOTURN EXHIBIT IDLEWOOD AVENUE EAST TO WEST MOVEMENT	KHA PROJECT	DATE	8/11/2014	SCALE AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY	REVISIONS	No.	DATE	BY
RICHMOND		VIRGINIA		SHEET NUMBER		2 OF 8						

Kimley»Horn

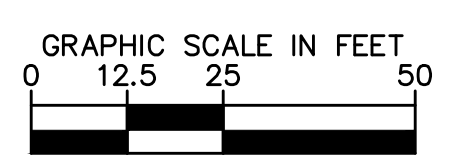
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 PHONE: 804-673-3882 FAX: 804-673-3980
 WWW.KIMLEY-HORN.COM

Plotted By: Medina, Eric Sheet Set: KHA Layout: EXHIBIT 4 August 21, 2014 02:09:19pm K:\RDC\RD\113157\RIC_Coll\011 Idlewood Roundabout\CADD\Sheets\EXHIBIT 4.dwg
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IDE-1 DATA	IDE-2 DATA	IDE-3 DATA
$\Delta = 26^\circ 45' 17''$ LT.	$\Delta = 49^\circ 29' 34.27''$ RT.	$\Delta = 27^\circ 50' 17''$ LT.
T = 79.19'	T = 55.31'	T = 106.57'
L = 155.50'	L = 103.66'	L = 208.92'
R = 333'	R = 120'	R = 430'
PC = 104+05.12	PC = 105+60.61	PC = 106+64.27
PT = 105+60.51	PT = 106+64.27	PT = 108+73.19
e = NORMAL CROWN (ULS)	e = NORMAL CROWN (ULS)	e = NORMAL CROWN (ULS)
v = 35 MPH	v = 35 MPH	v = 35 MPH

DESIGN VEHICLE = ASHTO WB-50



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	KHA PROJECT: AUTOTURN EXHIBIT RAMP TO IDLEWOOD AVENUE NORTH TO EAST MOVEMENT DATE: 8/11/2014 SCALE: AS SHOWN DESIGNED BY: DRAWN BY: CHECKED BY:
IDLEWOOD AVENUE ROUNDABOUT SHEET NUMBER 4 OF 8	VIRGINIA RICHMOND
REVISIONS No. _____ DATE _____	BY _____

Concrete pavers used in the alley bound by E. Cary and E. Main Streets, S. 12th and S. 13th Streets



Detail

