

East Riverfront Transportation Improvements



Urban Design Committee Meeting

July 7, 2016



Project Elements



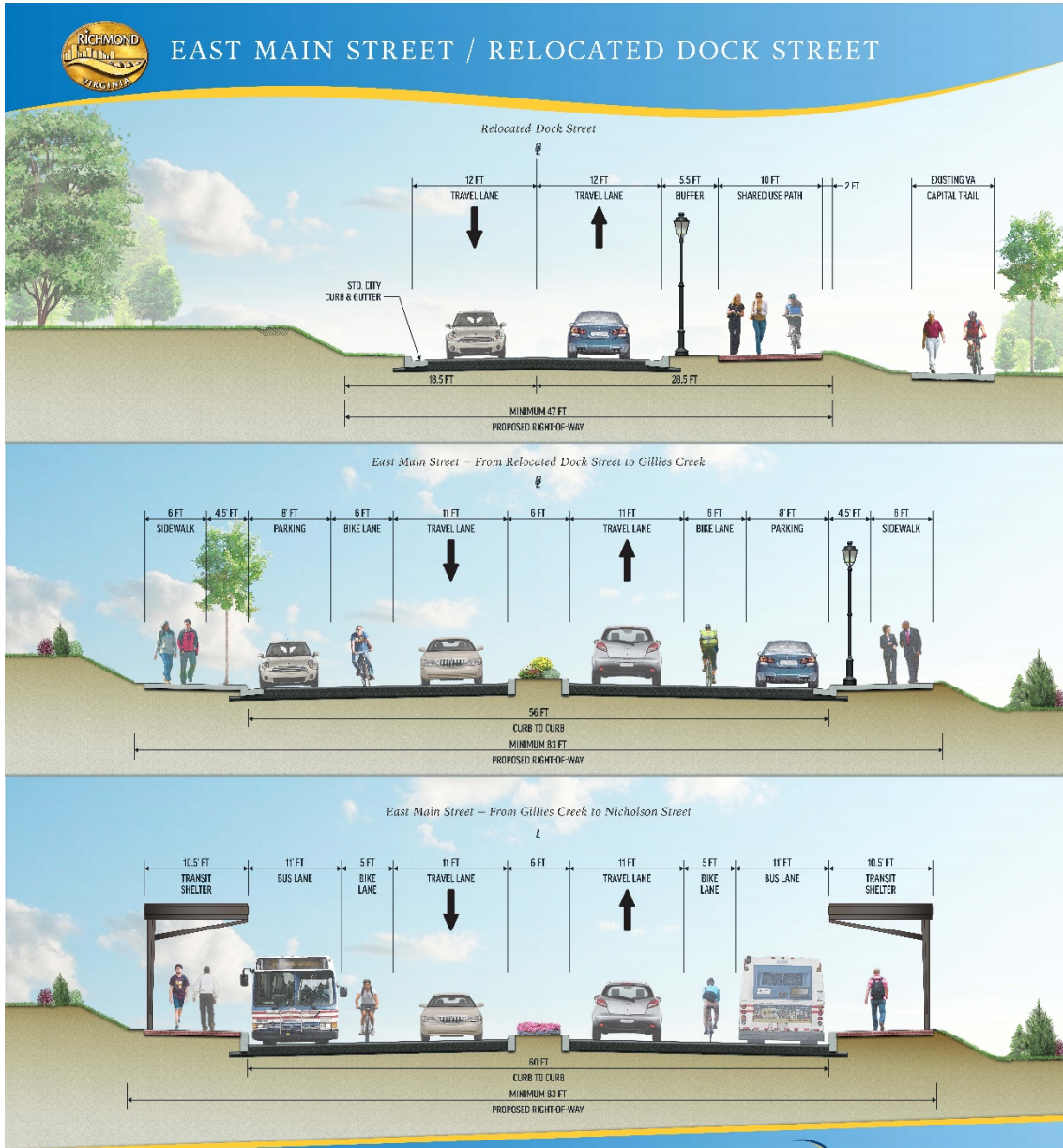
- Multi-Modal Streetscape Project
 - Roadways
 - Connectivity to Riverfront Area
 - Landscape/Plantings
 - Street Lighting
 - Sidewalks/Crosswalks
 - Bike Lanes
 - Bus

Design – Streets and Improvements



- Relocated Dock Street
- Roundabout
- East Main Street
- Nicholson Street
- BRT

Typical Sections

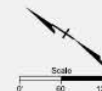




June 2016



EAST MAIN STREET/ RELOCATED DOCK STREET EAST RIVERFRONT TRANSPORTATION IMPROVEMENT





The Urban Design Committee recommends that the Planning Commission grant conceptual approval with the following considerations:

- **That the applicant consider other sidewalk materials and pedestrian lightings more in keeping with the industrial context of the area.**

Update: DPW has considered the use of other sidewalk materials and offers that City standard brick paving will be used to reflect continuity with the adjacent Rockets Landing development and Tobacco Row district. Large cobble accents will be added to add variety. Lights will be kept to the City standard (or Charleston fixture) to keep with adjacent lighting styles.

- **That the applicant consider designating the roundabout a space for signature public art.**

Update: Landscape design will accommodate a future public art space and will consist of ornamental and native shrubs and grasses. In addition, a junction box and conduit has been incorporated into the design plans to enable lighting of the public art area.

- **To look at undergrounding of utilities.**

Update: DPW is pursuing the undergrounding of the utilities for this project and have had continuous dialogue with Dominion Virginia Power. Negotiations between the City and Dominion Power are ongoing and are expected to enable the undergrounding, but will need to fit within the project's budget. At a minimum, the undergrounding will happen along East Main Street between the roundabout and Nicholson Street.

- **That an effort is made to reduce the overall right-of-way width, including working with Planning staff on appropriate sidewalk widths, and the reduction or removal of the center median.**

Update: In the Planning Commission Meeting on May 16, 2016, the Commission voted to maintain the 6' median. This width enables added safety for pedestrian refuge, a consistent roadway since the 6' is needed at all crosswalks, and does not significantly affect the footprint of potential land developable areas.



- **To delete the tree grates and look at a plan for linear verge strips or tree wells along the entire project.**
Update: As a result of the Planning Commission Meeting on May 16, 2016, the Planning Commission requested that 5' x 5' tree grates be incorporated within the design. In subsequent discussions with PDR and DPW, it was agreed to incorporate these, but eliminate where they are not necessary. The design now includes tree grates where more foot traffic and density of pedestrian activity and gathering is expected. This will occur around the Bus transit stops, crosswalk, Stone brewery tasting room and along the eastern project areas. All other areas will include large planters with groupings of trees, native shrubs, grasses and perennials.
- **That the speed limit be lowered to 25 mph.**
Update: Speed limit is controlled by City Code and DPW will continue conversations regarding the speed limit reduction as development occurs throughout the corridor.
- **That the design ensures that there are pedestrian connections to Fulton Hill and Church Hill neighborhoods**
Update: The project's planned construction limits incorporates means of pedestrian connectivity to these limits, which will bode well for meshing with future projects.
- **That planning staff provide an overall plan that provides more context to what's going on in the area with other projects and City Master plan work, to include Gillies Creek and Capital Trail connections.**
Update: Continuous coordination is occurring with PDR including the incorporation of Gillies Creek Greenway connections, the Hargreaves developments of Lehigh and Intermediate Terminal Park, addressing needs of the Capital Trail, Rockets Landing, and future accesses for development.
- **That in addition to looking at undergrounding utilities that the applicant look at removing any unnecessary utilities there currently.**
Update: Not only for Dominion Power, but the design team has been coordinating the relocation of all utilities and will hold a Utility Field Inspection (UFI) on July 20, 2016. All affected utilities have been issued 60% Plans and have been asked to ascertain their anticipated relocations prior to the UFI Meeting. Utility items to be addressed will consider future areas of possible development.
- **To ensure that pedestrian refuges remain around crosswalks.**
Update: Pedestrian crosswalks along East Main Street and the roundabout will maintain the 6' median and refuge area in accordance with the 60% Design Plans and will remain throughout the design process.

Schedule



- Advertisement
 - December 2016
- Phase I
 - East Main Street September 2017
- Complete Construction
 - December 2017



QUESTIONS



Materials Precedents

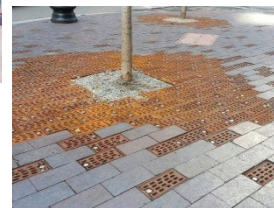
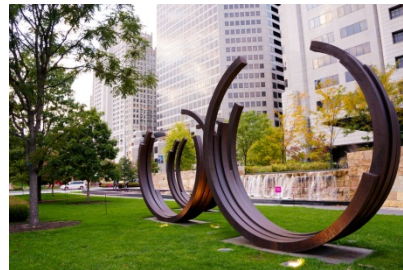


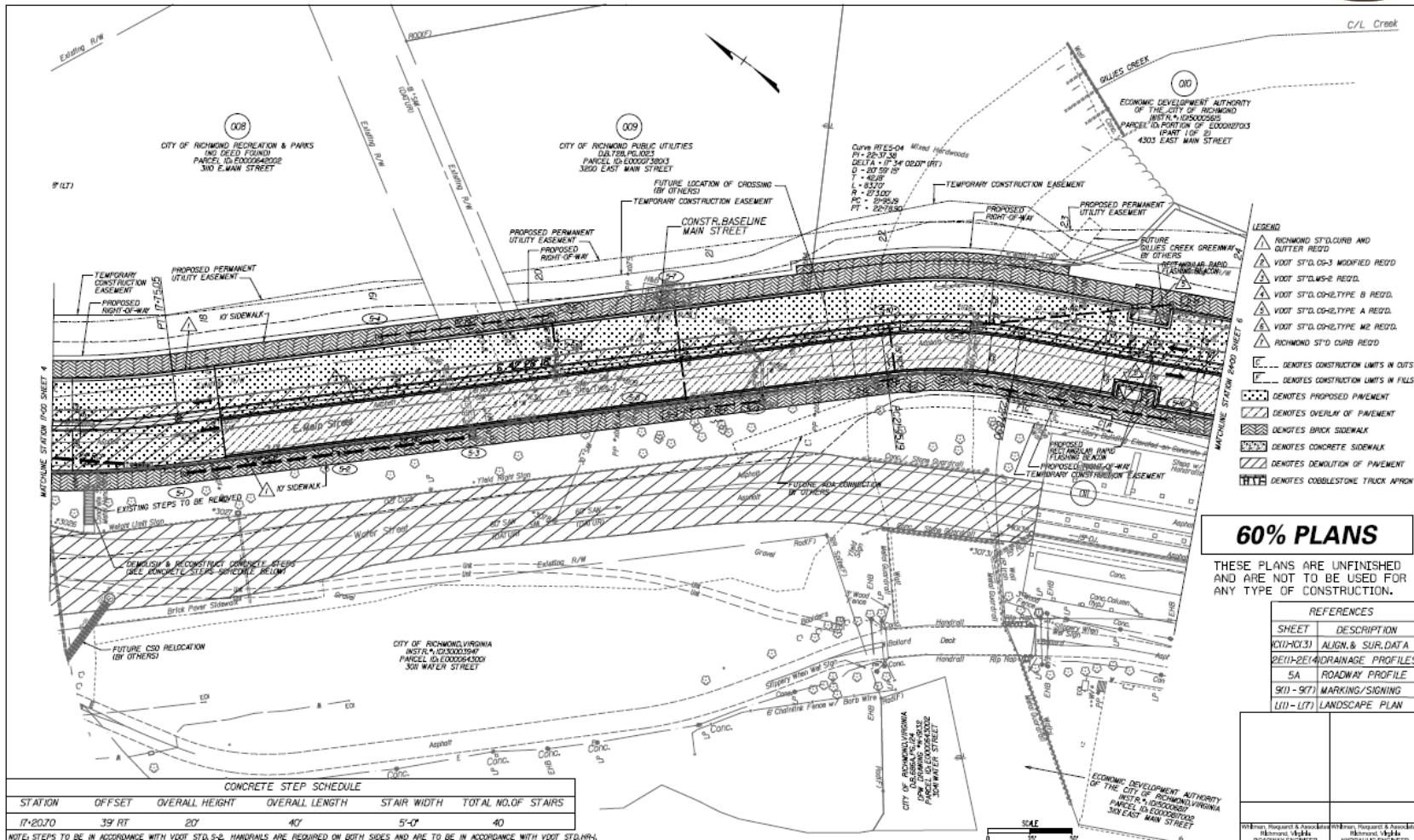
LOCAL CONTEXT:

- Fulton Gas Works
- Rockett's Landing
- Intermediate Dock
- Shiplock Park
- Brick, Metal, Concrete & Stone
- Industrial Patterns, Shapes & Forms



Materials Precedents





- LEGEND**
- ▲ RICHMOND STD CURB AND GUTTER RECD
 - ▲ VDOT STD. 05-3 MODIFIED RECD
 - ▲ VDOT STD. MS-2 RECD.
 - ▲ VDOT STD. CH-2 TYPE B RECD.
 - ▲ VDOT STD. CH-2 TYPE A RECD.
 - ▲ VDOT STD. CH-2 TYPE M2 RECD.
 - ▲ RICHMOND STD CURB RECD
 - DENOTES CONSTRUCTION LIMITS IN CUTS
 - DENOTES CONSTRUCTION LIMITS IN FILLS
 - ▨ DENOTES PROPOSED PAVEMENT
 - ▨ DENOTES OVERLAY OF PAVEMENT
 - ▨ DENOTES BRICK SIDEWALK
 - ▨ DENOTES CONCRETE SIDEWALK
 - ▨ DENOTES DEMOLITION OF PAVEMENT
 - ▨ DENOTES COBBLESTONE TRUCK APRON

60% PLANS

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

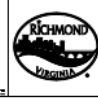
REFERENCES

SHEET	DESCRIPTION
CVI-102.3	ALIGN. & SUR. DATA
2E11-2E14	DRAINAGE PROFILES
5A	ROADWAY PROFILE
901 - 917	MARKING/SIGNING
L11 - L17	LANDSCAPE PLAN

CONCRETE STEP SCHEDULE

STATION	OFFSET	OVERALL HEIGHT	OVERALL LENGTH	STAIR WIDTH	TOTAL NO. OF STAIRS
17+20.70	39 FT	20'	40'	5'-0"	40

- NOTES: STEPS TO BE IN ACCORDANCE WITH VDOT STD. S-2. HANDRAILS ARE REQUIRED ON BOTH SIDES AND ARE TO BE IN ACCORDANCE WITH VDOT STD. RH-4.
- NOTES**
1. See dimensions in parentheses on this sheet.
 2. Property owner record as of 08.
 3. Wetland Banker.
 4. Sidewalk.
 5. Asphalt.
- LEGEND**
- Existing Curb: 1" x 6" x 8" (12" x 12" x 12")
 - Proposed Curb: 1" x 6" x 8" (12" x 12" x 12")
 - Asphalt: 4" (12" x 12" x 12")
 - Concrete: 4" (12" x 12" x 12")
 - Brick: 4" (12" x 12" x 12")
 - Gravel: 4" (12" x 12" x 12")
 - Grass: 4" (12" x 12" x 12")
 - Water: 4" (12" x 12" x 12")
 - Electric: 4" (12" x 12" x 12")
 - Gas: 4" (12" x 12" x 12")
 - Sanitary: 4" (12" x 12" x 12")
 - Storm: 4" (12" x 12" x 12")
 - Other: 4" (12" x 12" x 12")



Technicians		Administrative	
Survey Technicians		Project Engineer	
Asst. Survey Technicians		Asst. Project Engineer	
Field Engineer		Asst. Field Engineer	
Asst. Field Engineer		Asst. Asst. Field Engineer	
Asst. Asst. Field Engineer		Asst. Asst. Asst. Field Engineer	

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

PLAN

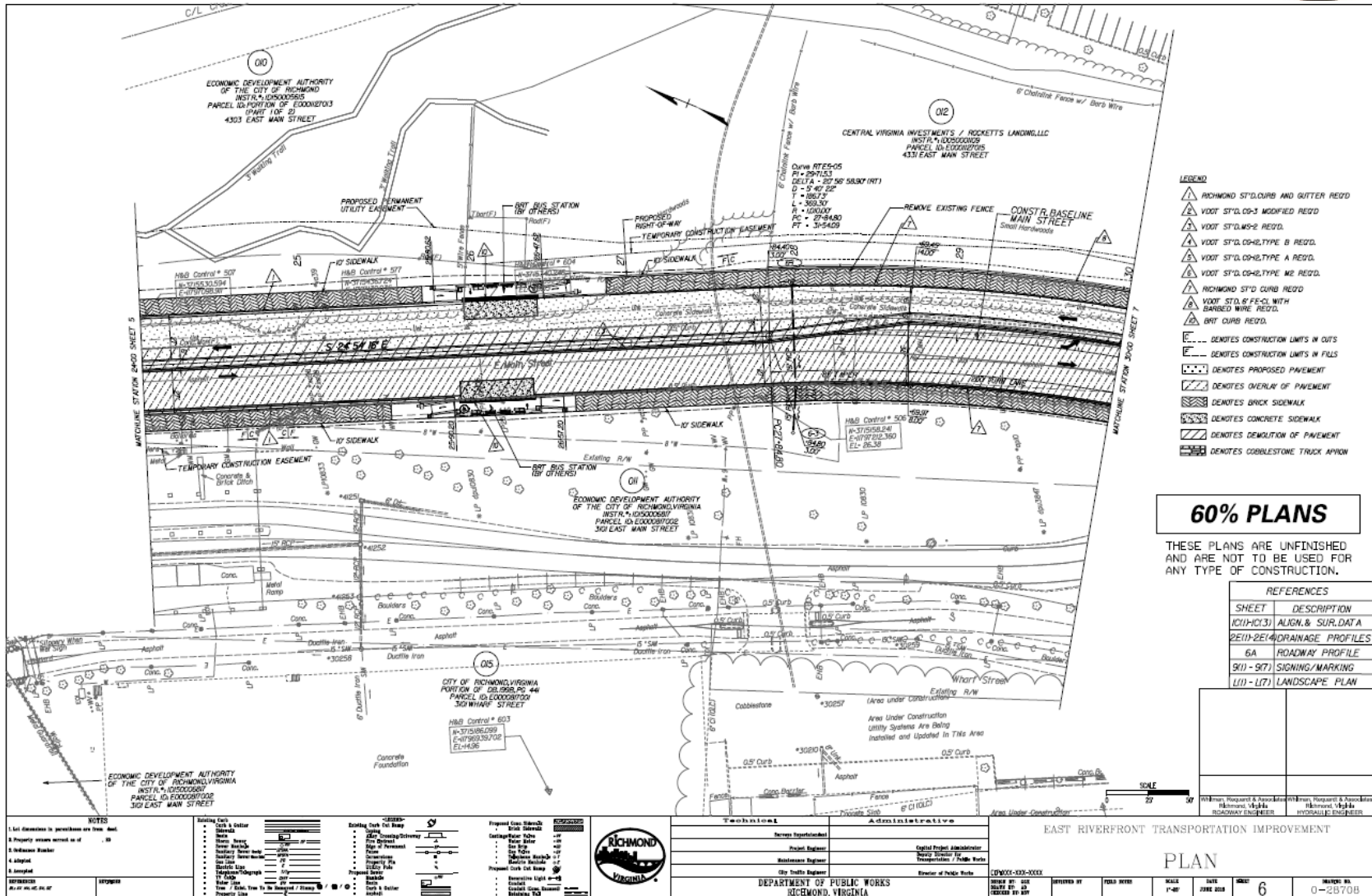
EAST RIVERFRONT TRANSPORTATION IMPROVEMENT

DATE: JUNE 2018

SHEET: 5

SCALE: 1" = 40'





- LEGEND**
- ▲ RICHMOND ST'D CURB AND GUTTER REED
 - ▲ VDOT ST'D. 09-2 MODIFIED REED
 - ▲ VDOT ST'D. WS-2 REED
 - ▲ VDOT ST'D. 09-2 TYPE B REED
 - ▲ VDOT ST'D. 09-2 TYPE A REED
 - ▲ VDOT ST'D. 09-2 TYPE ME REED
 - ▲ RICHMOND ST'D CURB REED
 - ▲ VDOT ST'D. 6 FE-CL WITH BARBED WIRE REED
 - ▲ BRT CURB REED
 - DENOTES CONSTRUCTION LIMITS IN CUTS
 - DENOTES CONSTRUCTION LIMITS IN FILLS
 - DENOTES PROPOSED PAVEMENT
 - DENOTES OVERLAY OF PAVEMENT
 - DENOTES BRICK SIDEWALK
 - DENOTES CONCRETE SIDEWALK
 - DENOTES DEMOLITION OF PAVEMENT
 - DENOTES COBBLESTONE TRUCK APPROX

60% PLANS

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REFERENCES

SHEET	DESCRIPTION
101(H)33	ALIGN. & SUR. DATA
2E(1)-2E(4)	DRAINAGE PROFILES
6A	ROADWAY PROFILE
9(U) - 9(U)	SIGNING/MARKING
L(1) - L(7)	LANDSCAPE PLAN

Prepared by:	Checked by:
Reviewed by:	Approved by:
Drawn by:	Scale:
Field notes:	Date:

NOTES

1. All dimensions in parentheses are back-sight.
2. Property owners named as of 10/1/18.
3. Reference Number.
4. As noted.
5. As noted.

LEGEND

Symbol	Description
▲	Richmond Standard Curb and Gutter
▲	VDOT Standard Modified
▲	VDOT Standard WS-2
▲	VDOT Standard 09-2 Type B
▲	VDOT Standard 09-2 Type A
▲	VDOT Standard 09-2 Type ME
▲	Richmond Standard Curb
▲	VDOT Standard 6 FE-CL with Barbed Wire
▲	BRT Curb
---	Construction Limits in Cuts
---	Construction Limits in Fills
---	Proposed Pavement
---	Overlay of Pavement
---	Brick Sidewalk
---	Concrete Sidewalk
---	Demolition of Pavement
---	Cobblestone Truck Approx

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

PLANNING & DESIGN DIVISION

ADMINISTRATIVE

Project Engineer: [Name]

Capital Project Administrator: [Name]

Senior Designer: [Name]

City Public Works Director: [Name]

Director of Public Works: [Name]

PROJECT NO: 18-00000000

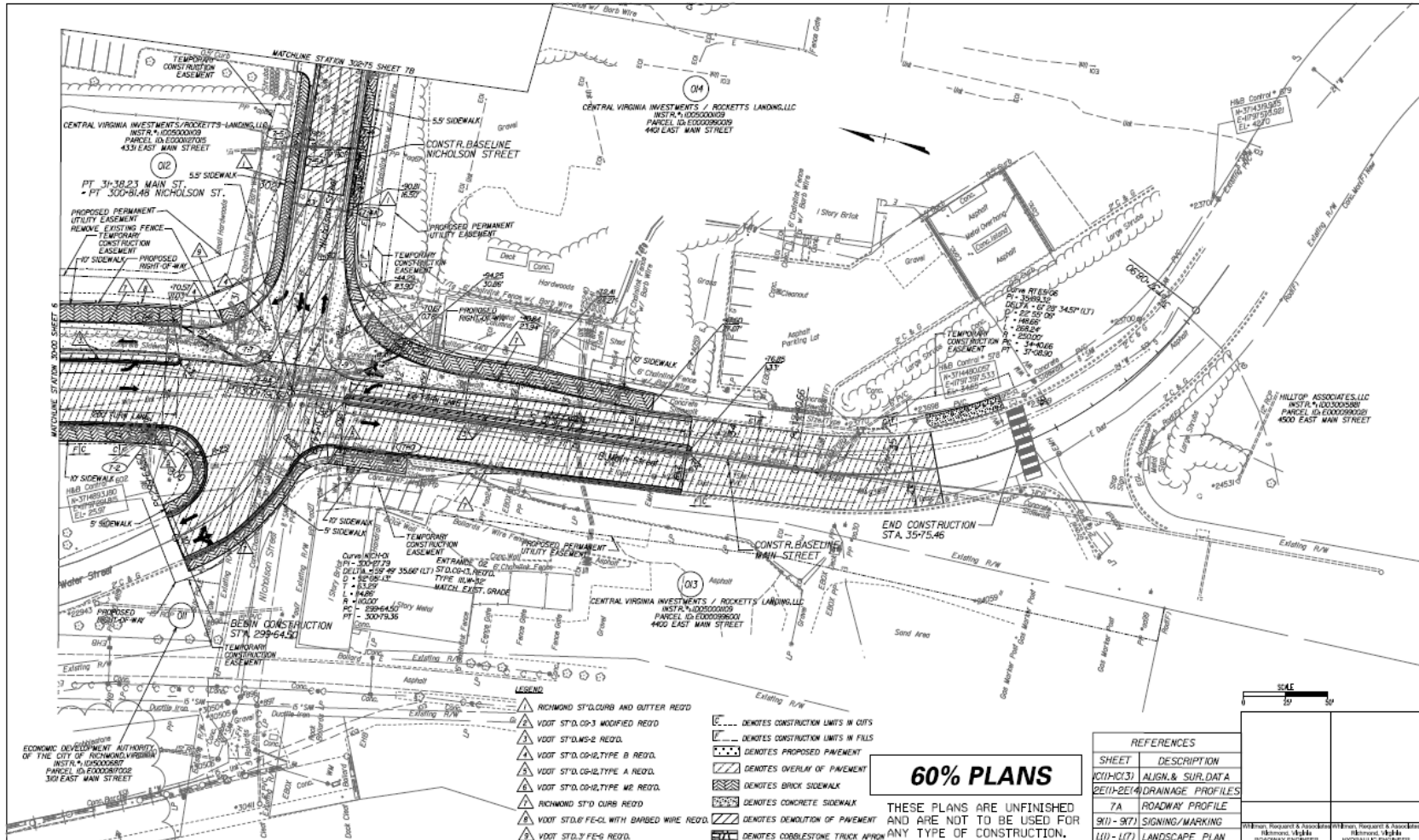
ISSUED BY: [Name]

DATE: JUNE 2018

SHEET: 6

PROJECT NO: 0-2870B





60% PLANS

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- LEGEND**
- ▲ RICHMOND STD CURB AND GUTTER RECD
 - ▲ VDOT STD. CD-3 MODIFIED RECD
 - ▲ VDOT STD. CD-2 RECD
 - ▲ VDOT STD. CD-12, TYPE B RECD.
 - ▲ VDOT STD. CD-12, TYPE A RECD.
 - ▲ VDOT STD. CD-12, TYPE W2 RECD.
 - ▲ RICHMOND STD CURB RECD
 - ▲ VDOT STD. FE-CL WITH BARBED WIRE RECD.
 - ▲ VDOT STD. J FE-CL RECD.

- DENOTES CONSTRUCTION LIMITS IN CUTS
- DENOTES PROPOSED PAVEMENT
- DENOTES OVERLAY OF PAVEMENT
- DENOTES BRICK SIDEWALK
- DENOTES CONCRETE SIDEWALK
- DENOTES DEMOLITION OF PAVEMENT
- DENOTES COBBLESTONE TRUCK APPROX

REFERENCES	
SHEET	DESCRIPTION
101-10131	ALIGN & SURF DATA
2011-2014	DRAINAGE PROFILES
7A	ROADWAY PROFILE
901 - 907	SIGNING/MARKING
101 - 107	LANDSCAPE PLAN

NOTES

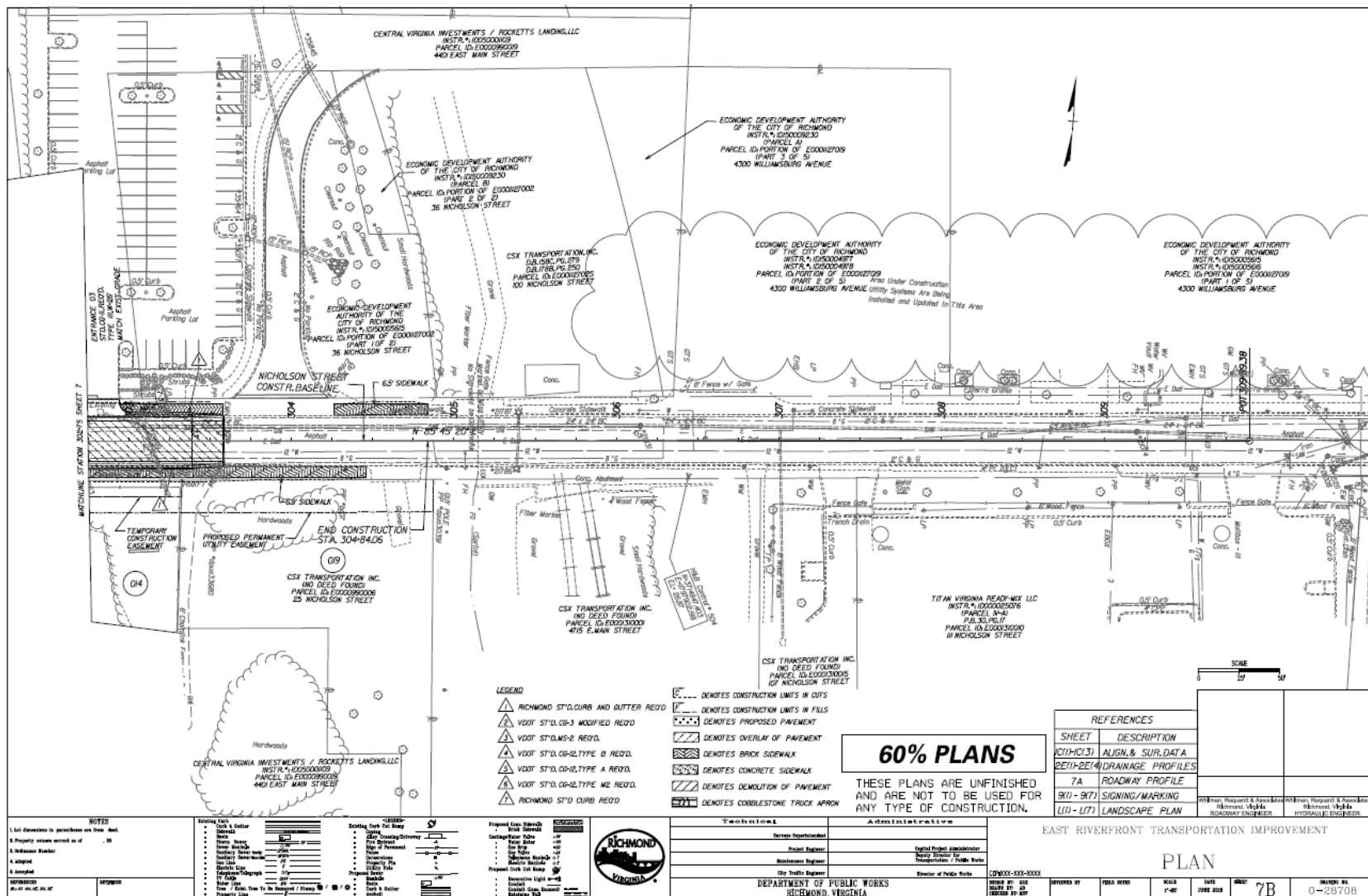
1. See dimensions in parentheses on sheet 5B.
2. Property address shown on sheet 5B.
3. Reference Number
4. Elevation
5. Elevation

Existing City	Proposed City	Proposed City
1. 1/2" x 1/2" x 1/2"	1. 1/2" x 1/2" x 1/2"	1. 1/2" x 1/2" x 1/2"
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100. 1/2" x 1/2" x 1/2"	100. 1/2" x 1/2" x 1/2"	100. 1/2" x 1/2" x 1/2"



Technician		Administrative	
Project Engineer		Project Engineer	
Senior Engineer		Senior Engineer	
Assistant Engineer		Assistant Engineer	
Surveyor		Surveyor	
Inspector		Inspector	
Technician		Technician	

EAST RIVERFRONT TRANSPORTATION IMPROVEMENT						
PLAN						
NO.	DATE	BY	CHKD	APP'D	SCALE	REVISION
1	JUNE 2008				1"=40'	
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- LEGEND**
- ▲ RICHMOND ST/CLUBB AND CUTTER REED
 - ▲ VDOT ST'D. CG-3 MODIFIED REED
 - ▲ VDOT ST'D. MS-2 REED
 - ▲ VDOT ST'D. CG-2/TYPE B REED
 - ▲ VDOT ST'D. CG-2/TYPE A REED
 - ▲ VDOT ST'D. CG-2/TYPE ME REED
 - ▲ RICHMOND ST'D CURB REED
- DENOTES CONSTRUCTION LIMITS IN CUTS
 [] DENOTES CONSTRUCTION LIMITS IN FILLS
 [] DENOTES PROPOSED PAVEMENT
 [] DENOTES OVERLAP OF PAVEMENT
 [] DENOTES BRICK SIDEWALK
 [] DENOTES CONCRETE SIDEWALK
 [] DENOTES DEMOLITION OF PAVEMENT
 [] DENOTES COBBLESTONE TRUCK APPROX

60% PLANS

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

REFERENCES	
SHEET	DESCRIPTION
1011-HCI(3)	ALIGN. & SURF. DATA
2011-2E1(4)	DRAINAGE PROFILES
7A	ROADWAY PROFILE
3(1) - 3(7)	SIGNING/MARKING
1(1) - 1(7)	LANDSCAPE PLAN

NOTES

1. Lot dimensions to be confirmed on final plat.
2. Property owner address as of 1/15/18.
3. Suburban Ranker.
4. 4.5/20/18
5. 1/15/18

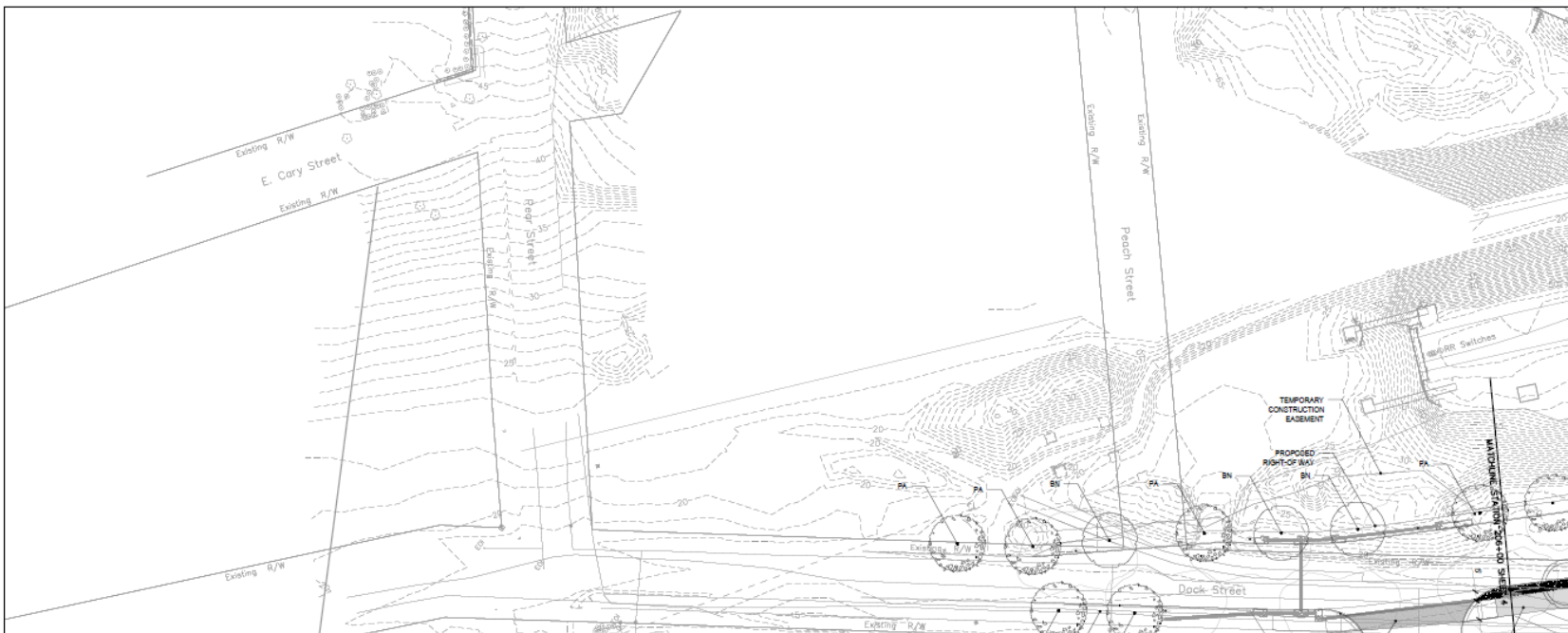
Symbol	Description
[Symbol]	Asphalt
[Symbol]	Concrete
[Symbol]	Grass
[Symbol]	Gravel
[Symbol]	Soil
[Symbol]	Water
[Symbol]	Utility
[Symbol]	Structure
[Symbol]	Tree
[Symbol]	Plant
[Symbol]	Light
[Symbol]	Sign
[Symbol]	Marker
[Symbol]	Survey
[Symbol]	Other

Symbol	Description
[Symbol]	Asphalt
[Symbol]	Concrete
[Symbol]	Grass
[Symbol]	Gravel
[Symbol]	Soil
[Symbol]	Water
[Symbol]	Utility
[Symbol]	Structure
[Symbol]	Tree
[Symbol]	Plant
[Symbol]	Light
[Symbol]	Sign
[Symbol]	Marker
[Symbol]	Survey
[Symbol]	Other

TECHNICAL		ADMINISTRATIVE	
Project Engineer	Project Engineer	City Traffic Engineer	Director of Public Works
Project Engineer	Project Engineer	City Traffic Engineer	Director of Public Works
Project Engineer	Project Engineer	City Traffic Engineer	Director of Public Works
Project Engineer	Project Engineer	City Traffic Engineer	Director of Public Works

EAST RIVERFRONT TRANSPORTATION IMPROVEMENT					
PLAN					
SHEET NO.	TOTAL SHEETS	DATE	SCALE	PROJECT NO.	ISSUE NO.
7B	7B	JUNE 2018	1"=40'	150001-1533-XXXX	0-2B70B

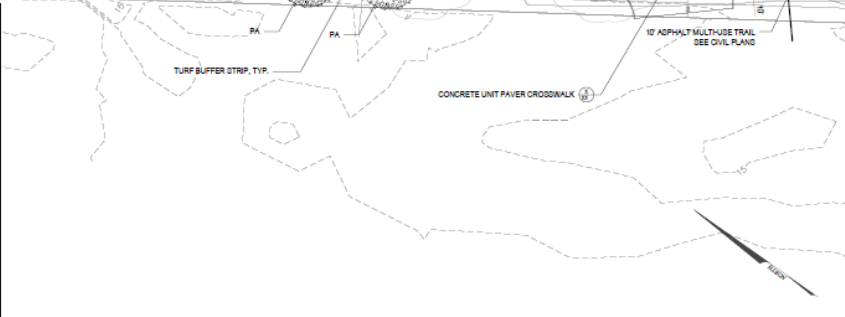




Plant Key

Shumard Oak <i>Quercus shumardii</i>	Scarlet Maple <i>Acer rubrum</i>	Allegheny Serviceberry <i>Amelanchier laevis</i>	Eastern Redbud <i>Cercis canadensis</i>	Russian Sage <i>Perovskia atriplicifolia 'Little Spire'</i>	Purple Coneflower <i>Echinacea purpurea 'Magnus'</i>	Culver's Root <i>Veronicastrum virginicum 'Album'</i>	Swamp Milkweed <i>Asclepias incarnata</i>	Cayenne <i>Nicotiana glauca 'Walker's Low'</i>	Dwarf Joe Pye Weed <i>Eupatorium dubium 'Little Joe'</i>	Orange Coneflower <i>Rudbeckia fulgida</i>	Snowdrop Windflower <i>Anemone pulsatilla</i>	Blue Star Anemone <i>Anemone x 'Blue Ice'</i>	Shenandoah Switch Grass <i>Panicum virgatum</i>	Prairie Fire Switchgrass <i>Panicum virgatum 'Prairie Fire'</i>	Cap Breeze Switchgrass <i>Panicum Cap Breeze</i>	White Muhly Grass <i>Muhlenbergia capillaris 'White Cloud'</i>	Prairie Dropseed <i>Sporobolus heterolepis</i>	East Frieslander Salvia <i>Salvia nemorosa 'East Frieslander'</i>	Big Blue Linum <i>Linum muscat 'Big Blue'</i>	Turf Grass			
Greenispire Linden <i>Tilia cordata 'Greenispire'</i>	Willow Oak <i>Quercus phellos</i>	Pee Wee Oakleaf Hydrangea <i>Hydrangea quercifolia 'Pee Wee'</i>	Red Spire Dwarf Winterberry Holly <i>Ilex verticillata 'Red Spire'</i>	Gold Drop Cinchola <i>Potentilla fruticosa 'Gold Drop'</i>	Little Princess Spirea <i>Spirea japonica 'Little Princess'</i>	Little Henry Dwarf Sweetgum <i>Liquidambar styraciflua 'Little Henry'</i>	Shamrock Inkberry <i>Ilex glabra 'Shamrock'</i>	Shenandoah Switch Grass <i>Panicum virgatum</i>	Prairie Fire Switchgrass <i>Panicum virgatum 'Prairie Fire'</i>	Cap Breeze Switchgrass <i>Panicum Cap Breeze</i>	White Muhly Grass <i>Muhlenbergia capillaris 'White Cloud'</i>	Prairie Dropseed <i>Sporobolus heterolepis</i>	East Frieslander Salvia <i>Salvia nemorosa 'East Frieslander'</i>	Big Blue Linum <i>Linum muscat 'Big Blue'</i>	Turf Grass	Shenandoah Switch Grass <i>Panicum virgatum</i>	Prairie Fire Switchgrass <i>Panicum virgatum 'Prairie Fire'</i>	Cap Breeze Switchgrass <i>Panicum Cap Breeze</i>	White Muhly Grass <i>Muhlenbergia capillaris 'White Cloud'</i>	Prairie Dropseed <i>Sporobolus heterolepis</i>	East Frieslander Salvia <i>Salvia nemorosa 'East Frieslander'</i>	Big Blue Linum <i>Linum muscat 'Big Blue'</i>	Turf Grass

<p>1. Use standard symbols for trees and shrubs.</p> <p>2. Right-of-way lines are shown as dashed lines.</p> <p>3. Utility lines are shown as solid lines.</p> <p>4. Elevation is shown in feet.</p> <p>5. Contour interval is 5 feet.</p>	<p>6. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>7. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>8. Temporary Construction Easement is shown as a dotted line.</p> <p>9. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>10. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>11. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>12. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>13. Temporary Construction Easement is shown as a dotted line.</p> <p>14. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>15. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>16. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>17. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>18. Temporary Construction Easement is shown as a dotted line.</p> <p>19. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>20. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>21. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>22. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>23. Temporary Construction Easement is shown as a dotted line.</p> <p>24. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>25. Existing Right-of-Way (R/W) is shown as a dashed line.</p>
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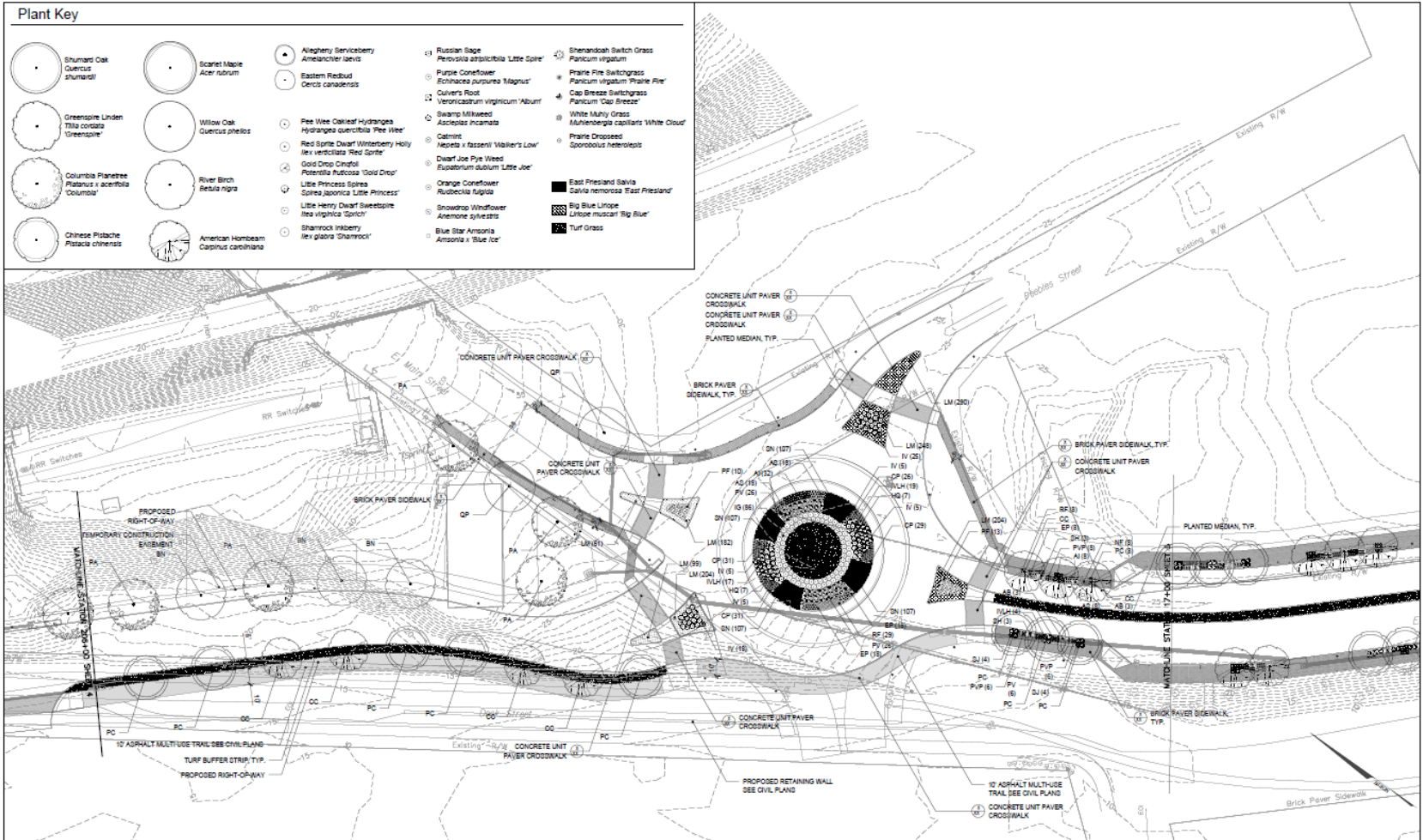
<p>26. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>27. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>28. Temporary Construction Easement is shown as a dotted line.</p> <p>29. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>30. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>31. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>32. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>33. Temporary Construction Easement is shown as a dotted line.</p> <p>34. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>35. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>36. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>37. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>38. Temporary Construction Easement is shown as a dotted line.</p> <p>39. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>40. Existing Right-of-Way (R/W) is shown as a dashed line.</p>	<p>41. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>42. Existing Right-of-Way (R/W) is shown as a dashed line.</p> <p>43. Temporary Construction Easement is shown as a dotted line.</p> <p>44. Proposed Right-of-Way (R/W) is shown as a solid line.</p> <p>45. Existing Right-of-Way (R/W) is shown as a dashed line.</p>
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Plant Key

- | | | | | |
|----------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|
| Shumard Oak
<i>Quercus shumardii</i> | Scarlet Maple
<i>Acer spicatum</i> | Allegheny Serviceberry
<i>Amelanchier alnifolia</i> | Russian Sage
<i>Perovskia atrorubra</i> Little Spire | Shenandoah Switch Grass
<i>Panicum virgatum</i> |
| Greenstone Linden
<i>Tilia cordata</i>
Greenstone | Willow Oak
<i>Quercus phellos</i> | Red Spider Dwarf
<i>Wintersherry Holly</i>
<i>Ilex verticillata</i> Red Spider | Purple Coneflower
<i>Echinacea purpurea</i> Magnus | Prairie Fire Switchgrass
<i>Panicum virgatum</i> Prairie Fire |
| Columbia Planetree
<i>Platanus x acerifolia</i>
Columbia | River Birch
<i>Betula nigra</i> | Gold Drop
<i>Cindrol</i>
<i>Potentilla fruticosa</i> Gold Drop | Culvers Root
<i>Vernicacrum virginicum</i> Abundant | Cap Breeze Switchgrass
<i>Panicum Cap Breeze</i> |
| Chinese Platane
<i>Platanus chinensis</i> | American Hornbeam
<i>Carpinus caroliniana</i> | Little Princess
<i>Spiraea</i>
<i>Spiraea japonica</i> Little Princess | Swamp Milkweed
<i>Asclepias incarnata</i> | White Muhly Grass
<i>Muhlenbergia capillaris</i> White Cloud |
| | | Little Henry Dwarf
<i>Sweetopsis</i>
<i>Ilex virginica</i> Little Henry | Catmint
<i>Nepeta x faassenii</i> Walker's Low | Prairie Dropseed
<i>Sporobolus heterostachyus</i> |
| | | Shamrock
<i>Ilex glabra</i> Shamrock | Dwarf Joe Pye Weed
<i>Eubotrium dulcium</i> Little Joe | |
| | | Blue Star
<i>Amorpha</i>
<i>Amorpha x blue ice</i> | Orange Coneflower
<i>Rubecula fulgida</i> | |
| | | Snowdrop
<i>Windflower</i>
<i>Anemone sylvatica</i> | East Prinsland
<i>Salvia nemorosa</i> East Prinsland | |
| | | | Big Blue
<i>Liriodie muscari</i> Big Blue | |
| | | | Turf Grass | |



- NOTES
1. See drawings in sections for details.
 2. Approximate scale: 1" = 20'
 3. All dimensions are in feet.
 4. All elevations are in feet.
 5. All plantings are to be installed by the contractor.
 6. All plantings are to be installed by the contractor.
 7. All plantings are to be installed by the contractor.
 8. All plantings are to be installed by the contractor.
 9. All plantings are to be installed by the contractor.
 10. All plantings are to be installed by the contractor.

Symbol	Description
	Plant
	Paver
	Walkway
	Retaining Wall
	Utility
	Other



Project Name	Client
EAST RIVERFRONT TRANSPORTATION IMPROVEMENT	DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA

EAST RIVERFRONT TRANSPORTATION IMPROVEMENT

LPDA

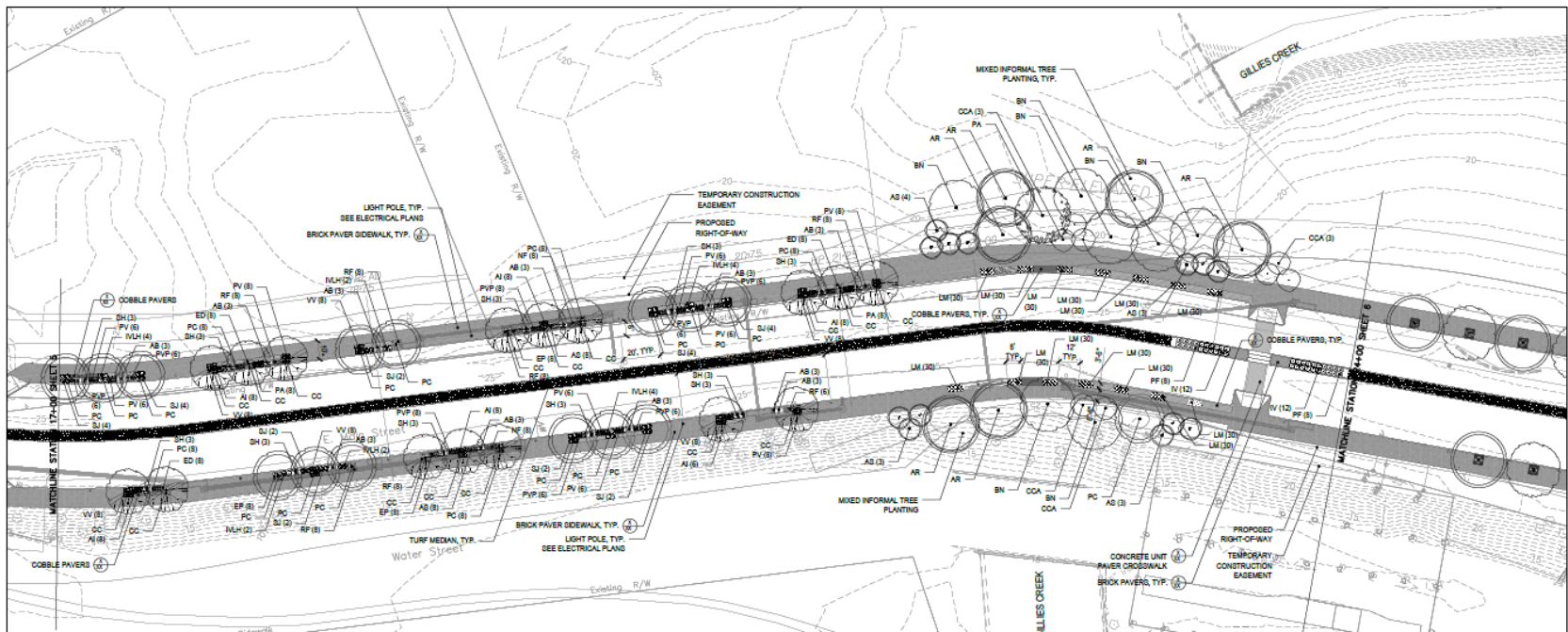
DATE: 10/15/2024

SCALE: 1" = 20'

PROJECT NO: 2024-001

ISSUE NO: 0-XXXX





Plant Key

- | | | | | |
|---------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------|
| Shumard Oak
<i>Quercus shumardii</i> | Scarlet Maple
<i>Acer rubrum</i> | Allegheny Serviceberry
<i>Amelanchier laevis</i> | Rustier Sage
<i>Penstemon stipitiformis</i> Little Gale* | Shenandoah Switch Grass
<i>Panicum virgatum</i> |
| Greenstripe Linden
<i>Tilia cordata</i> "Greenstripe" | Willow Oak
<i>Quercus phellos</i> | Eastern Redbud
<i>Cercis canadensis</i> | Purple Coneflower
<i>Echinacea purpurea</i> "Magnus" | Prairie Fire Switchgrass
<i>Panicum virgatum</i> "Prairie Fire" |
| Columbia Planetree
<i>Platanus x acerifolia</i> "Columbar" | River Birch
<i>Betula nigra</i> | Pee Wee Oakleaf Hydrangea
<i>Hydrangea quercifolia</i> "Pee Wee" | Culver's Root
<i>Veronicastrum virginicum</i> "Abund" | Cap Breeze Switchgrass
<i>Panicum "Cap Breeze"</i> |
| Chinese Pistache
<i>Platanus chinensis</i> | American Hornbeam
<i>Carpinus caroliniana</i> | Red Spindle Dwarf Winterberry
<i>Hollya x verticillata</i> "Red Spindle" | Swamp Milkweed
<i>Asclepias incarnata</i> | White Muhly Grass
<i>Muhlenbergia capillaris</i> "White Cloud" |
| | | Gold Drop Cindifol
<i>Potentilla fruticosa</i> "Gold Drop" | Catsmint
<i>Nepeta x ruscifolia</i> "Walker's Low" | Prairie Droseed
<i>Sporobolus heterolepis</i> |
| | | Little Princess Spirea
<i>Spiraea japonica</i> "Little Princess" | Dwarf Joe Pye Weed
<i>Eupatorium altissimum</i> "Little Joe" | East Piedmont Galvia
<i>Galvia nemorosa</i> "East Piedmont" |
| | | Little Henry Dwarf Sweetpire
<i>Itea virginica</i> "Spark" | Orange Coneflower
<i>Rudbeckia fulgida</i> | Big Blue Liriope
<i>Liriope muscari</i> "Big Blue" |
| | | Shamrock Inkberry
<i>Ilex glabra</i> "Shamrock" | Snowdrop Windflower
<i>Anemone sylvatica</i> | Turf Grass |
| | | Blue Star Anemone
<i>Anemone x Blue Ice</i> | | |

NOTES:
 1. Let Applicant be prepared to pay for and install all improvements shown on this plan.
 2. Applicant shall be responsible for all utility relocation and protection.
 3. Applicant shall be responsible for all utility relocation and protection.
 4. Applicant shall be responsible for all utility relocation and protection.
 5. Applicant shall be responsible for all utility relocation and protection.

Symbol	Description	Symbol	Description
	Proposed Right-of-Way		Temporary Construction Easement
	Brick Paved Sidewalk		Cobble Paved Sidewalk
	Mixed Informal Tree Planting		Light Pole
	Turf Grass		Concrete Unit Paver Crosswalk

Technical	Administrative
Name: _____ Title: _____ Date: _____	Name: _____ Title: _____ Date: _____

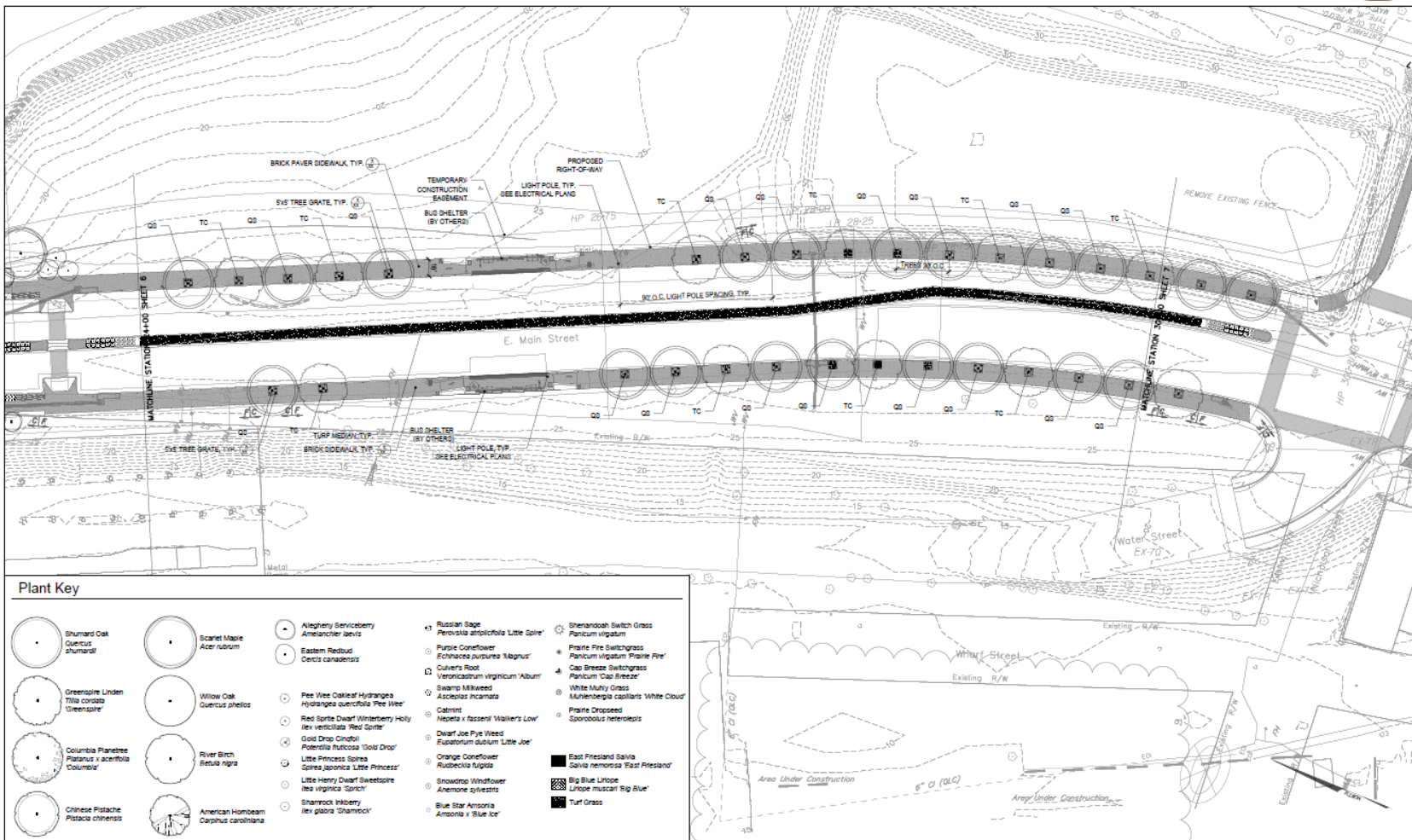
EAST RIVERFRONT TRANSPORTATION IMPROVEMENT

LAND DEVELOPMENT AND PLANNING
 1000 COMMONWEALTH BLVD., SUITE 200
 RICHMOND, VA 23220

DEPARTMENT OF PUBLIC WORKS
 RICHMOND, VIRGINIA

SHEET NO. 0-XXXXX
 DATE: 06/20/2014





Plant Key

- | | | | | |
|--------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
| Shumard Oak
<i>Quercus shumardii</i> | Scarlet Maple
<i>Acer rubrum</i> | Allegheny Serviceberry
<i>Amenanther leavis</i> | Purple Coneflower
<i>Echinacea purpurea 'Magnus'</i> | Shenandoah Switch Grass
<i>Panicum virgatum</i> |
| Greenstone Linden
<i>Tilia cordata 'Greenstone'</i> | Willow Oak
<i>Quercus phellos</i> | Eastern Redbud
<i>Cercis canadensis</i> | Culvers Root
<i>Veronica virginicum 'Album'</i> | Prairie Fire Switchgrass
<i>Panicum virgatum 'Prairie Fire'</i> |
| Columbia Fraxinus
<i>Platanus x acerifolia 'Columbia'</i> | River Birch
<i>Betula nigra</i> | Red Spruce
<i>Juniperus horizontalis 'Red Spruce'</i> | Swamp Milkweed
<i>Asclepias incarnata</i> | Cap Breeder
<i>Panicum 'Cap Breeder'</i> |
| Chinese Pistache
<i>Pistacia chinensis</i> | American Hornbeam
<i>Carpinus caroliniana</i> | Red Spruce Dwarf
<i>Juniperus horizontalis 'Red Spruce Dwarf'</i> | White Muttly Grass
<i>Muhlenbergia capillaris 'White Cloud'</i> | Prairie Dropped
<i>Sporobolus heterostachyus</i> |
| | | Gold Drop
<i>Potentilla fruticosa 'Gold Drop'</i> | East Fringed Salvia
<i>Salvia nemorosa 'East Fringed'</i> | |
| | | Little Princess
<i>Salix japonica 'Little Princess'</i> | Big Blue Linco
<i>Liriodendron 'Big Blue'</i> | |
| | | Little Henry Dwarf
<i>Sweetgale 'Little Henry Dwarf'</i> | Turf Grass | |
| | | Shamrock
<i>Ilex glabra 'Shamrock'</i> | | |

NOTES

1. All trees to be planted in the 6' O.C. (O.C. = On Center) spacing unless otherwise noted.

2. All trees to be planted in the 6' O.C. (O.C. = On Center) spacing unless otherwise noted.

3. All trees to be planted in the 6' O.C. (O.C. = On Center) spacing unless otherwise noted.

4. All trees to be planted in the 6' O.C. (O.C. = On Center) spacing unless otherwise noted.

Symbol	Description	Quantity	Notes
	Shumard Oak	10	
	Scarlet Maple	10	
	Allegheny Serviceberry	10	
	Purple Coneflower	10	
	Shenandoah Switch Grass	10	
	Greenstone Linden	10	
	Willow Oak	10	
	Eastern Redbud	10	
	Culvers Root	10	
	Prairie Fire Switchgrass	10	
	Columbia Fraxinus	10	
	River Birch	10	
	Red Spruce	10	
	Swamp Milkweed	10	
	Cap Breeder	10	
	White Muttly Grass	10	
	Prairie Dropped	10	
	Gold Drop	10	
	East Fringed Salvia	10	
	Big Blue Linco	10	
	Turf Grass	10	
	Little Princess	10	
	Little Henry Dwarf	10	
	Shamrock	10	

Plant/Structure	Quantity	Notes
Shumard Oak	10	
Scarlet Maple	10	
Allegheny Serviceberry	10	
Purple Coneflower	10	
Shenandoah Switch Grass	10	
Greenstone Linden	10	
Willow Oak	10	
Eastern Redbud	10	
Culvers Root	10	
Prairie Fire Switchgrass	10	
Columbia Fraxinus	10	
River Birch	10	
Red Spruce	10	
Swamp Milkweed	10	
Cap Breeder	10	
White Muttly Grass	10	
Prairie Dropped	10	
Gold Drop	10	
East Fringed Salvia	10	
Big Blue Linco	10	
Turf Grass	10	
Little Princess	10	
Little Henry Dwarf	10	
Shamrock	10	

EAST RIVERFRONT TRANSPORTATION IMPROVEMENT

LPDA
LAND PLANNING AND DESIGN ASSOCIATES, P.C.
1000 COMMONWEALTH AVENUE, SUITE 200
RICHMOND, VIRGINIA 23220
TEL: (804) 771-1100
WWW.LPDA.COM

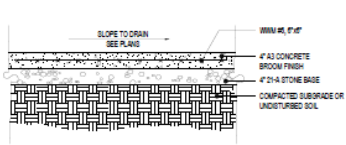
DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

DATE: 08/14/14
SCALE: AS SHOWN
SHEET NO: 0-XXXXX

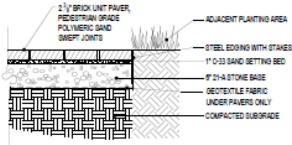




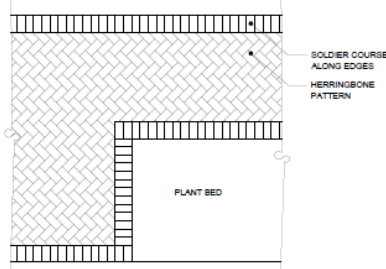
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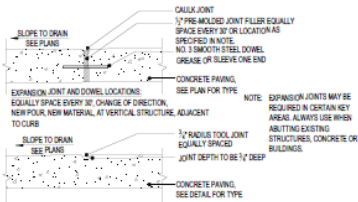
1 4" CONCRETE
1" = 1"



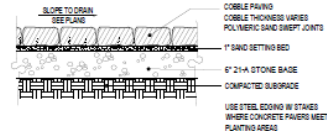
4 CLAY BRICK UNIT PAVERS
1" = 1"



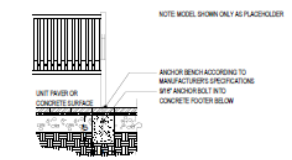
8 BRICK PAVING PATTERN
1/2" = 1'



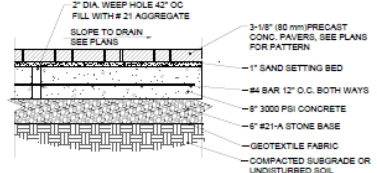
2 CONCRETE JOINTS - EXPANSION AND CONTROL
NTS



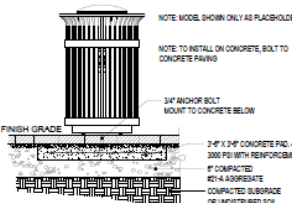
5 COBBLE PAVING
1" = 1"



6 BENCH
3/4" = 1"



3 CONCRETE UNIT PAVERS - (CROSSWALKS)
1" = 1"



7 TRASH RECEPTACLE
3/4" = 1"

NOTES

1. See Section 1000 for details on the bid.
2. See Section 1000 for details on the bid.
3. See Section 1000 for details on the bid.
4. See Section 1000 for details on the bid.
5. See Section 1000 for details on the bid.
6. See Section 1000 for details on the bid.
7. See Section 1000 for details on the bid.
8. See Section 1000 for details on the bid.
9. See Section 1000 for details on the bid.
10. See Section 1000 for details on the bid.

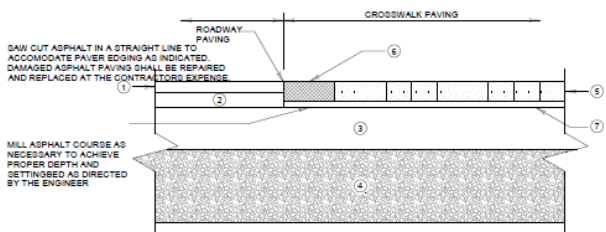
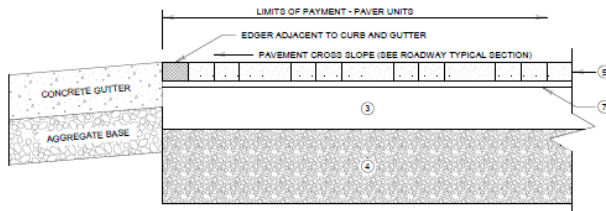
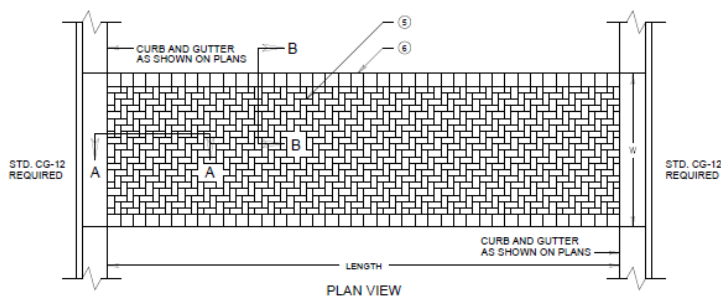
Quantity	Description	Unit	Notes
1.00	4" Concrete	Sq. Yd.	
1.00	4" Stone Base	Sq. Yd.	
1.00	2" Brick Unit Paver	Sq. Yd.	
1.00	1" Sand Setting Bed	Sq. Yd.	
1.00	4" Stone Base	Sq. Yd.	
1.00	2" x 2" Concrete Pad	Sq. Yd.	
1.00	6" Compact #21-A Aggregate	Sq. Yd.	
1.00	3/4" Anchor Bolt	Each	



Department	Division	Project	Location
Public Works	Construction	East Riverfront Transportation Improvement	Richmond, Virginia

Project Name	Project Number	Scale	Date
EAST RIVERFRONT TRANSPORTATION IMPROVEMENT	CP-2000-000-0000	AS SHOWN	0-XXXX

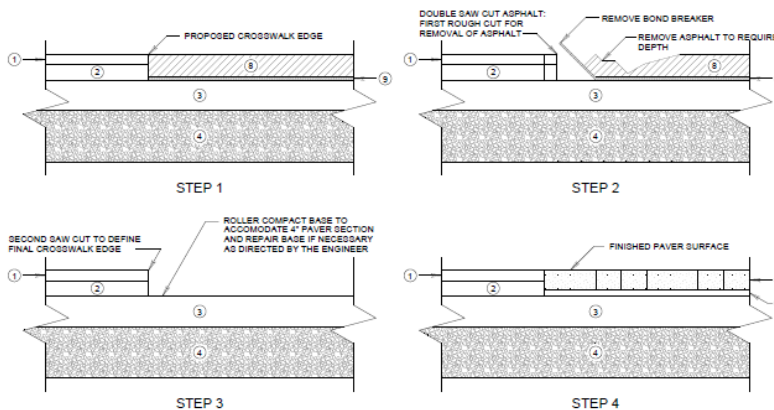




NOTES:

- COLOR OF PAVING UNITS SHALL MATCH THE COLOR DESCRIPTION IN THE ATTACHED SPECIAL PROVISIONS FOR UNIT PAVERS OR AS INDICATED ON THE PLANS. A SAMPLE OF THE PAVING UNITS TO BE USED SHALL BE SUBMITTED AND THE FINAL COLOR SELECTION SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT.
- PAVING WORK WILL BE PLUMB AND TRUE TO LINE AND GRADE AND SHALL BE INSTALLED TO PROPERLY COINCIDE WITH ADJACENT WORK AND ELEVATIONS. THE CUTTING OF THE PAVERS SHALL BE CLEAN WITH NO APPARENT SPALLS OR BREAKS.
- PAVING UNITS SHALL BE PLACED AND VIBRATED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WITH A MINIMUM OF THREE PASSES OVER THE PAVERS.
- PATTERN FOR PAVING UNITS SHALL BE A HERRINGBONE PATTERN WITH 90° ANGLES TO THE CONCRETE EDGE RESTRAINT OR LONGITUDINAL EDGE UNLESS OTHERWISE NOTED ON THE PLANS.
- JOINTS (EXCEPT FOR EXPANSION-JOINTS) BETWEEN PAVING UNITS SHALL BE HAND TIGHT, SAND SWEEP, AND A MAXIMUM OF 1/4" WIDE FOR BOTH CONCRETE AND BRICK.
- JOINTS AROUND ALL APPURTENANCES SUCH AS MANHOLES AND WATER METERS THAT EXTEND INTO OR THROUGH THE CROSSWALK SHALL BE FILLED WITH 1/2" JOINT FILLER AND SEALED WITH SILICONE JOINT SEALANT ACCORDING TO STANDARD PR-2.
- EXISTING PAVEMENT TO BE REMOVED WILL BE REMOVED BY SAW CUTTING AND EXCAVATING AS NECESSARY FOR THE PLACEMENT OF THE BASE MATERIAL AND WILL BE REPLACED BY NEW MATERIAL AS DIRECTED BY THE ENGINEER.
- HIGH WATER TABLE, WET SOILS OR POOR SOILS MAY REQUIRE ADDITIONAL DRAINAGE AS SHOWN ON PLANS OR DIRECTED BY THE ENGINEER.

SUGGESTED SEQUENCE OF CONSTRUCTION



LEGEND:

- ASPHALT CONCRETE SURFACE COURSE
- ASPHALT CONCRETE INTERMEDIATE COURSE
- ASPHALT CONCRETE BASE COURSE
- AGGREGATE BASE
- 8" x 4" x 3/4" PAVERS - PAVING UNITS HAND TIGHT AND SAND SWEEP
- 8" x 8" x 3/4" PAVERS - INSTALL FLUSH WITH SAW CUT ASPHALT
- APPROXIMATELY 1" DEEP CONCRETE BEDDING SAND
- ASPHALT SURFACE OVERLAY
- GEOTEXTILE FABRIC (BOND BREAKER) UNDERLAY FOR EASY REMOVAL OF ASPHALT

DRAFT

1 UNIT PAVER CROSSWALK INSTALLATION

NOTES:

Let Material quantities on the Bill of Materials be based on the following:

1	Quantity	Unit
2	Quantity	Unit
3	Quantity	Unit
4	Quantity	Unit
5	Quantity	Unit
6	Quantity	Unit
7	Quantity	Unit
8	Quantity	Unit
9	Quantity	Unit

1	ASPHALT CONCRETE SURFACE COURSE	1.000	1.000
2	ASPHALT CONCRETE INTERMEDIATE COURSE	1.000	1.000
3	ASPHALT CONCRETE BASE COURSE	1.000	1.000
4	AGGREGATE BASE	1.000	1.000
5	8" x 4" x 3/4" PAVERS - PAVING UNITS HAND TIGHT AND SAND SWEEP	1.000	1.000
6	8" x 8" x 3/4" PAVERS - INSTALL FLUSH WITH SAW CUT ASPHALT	1.000	1.000
7	APPROXIMATELY 1" DEEP CONCRETE BEDDING SAND	1.000	1.000
8	ASPHALT SURFACE OVERLAY	1.000	1.000
9	GEOTEXTILE FABRIC (BOND BREAKER) UNDERLAY FOR EASY REMOVAL OF ASPHALT	1.000	1.000

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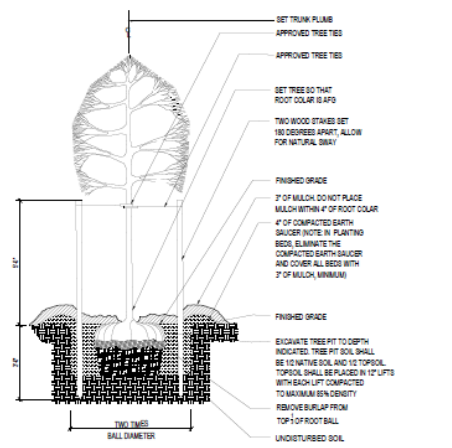
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Contract No.	100-100-XXXX
Division	100-100-XXXX
Section	100-100-XXXX
Sheet No.	100-100-XXXX
Scale	AS SHOWN
DATE	10/10/10
DESIGNED BY	100-100-XXXX
CHECKED BY	100-100-XXXX
APPROVED BY	100-100-XXXX

Project No.	100-100-XXXX
Contract No.	100-100-XXXX
Division	100-100-XXXX
Section	100-100-XXXX
Sheet No.	100-100-XXXX
Scale	AS SHOWN
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DESIGNED BY	100-100-XXXX
CHECKED BY	100-100-XXXX
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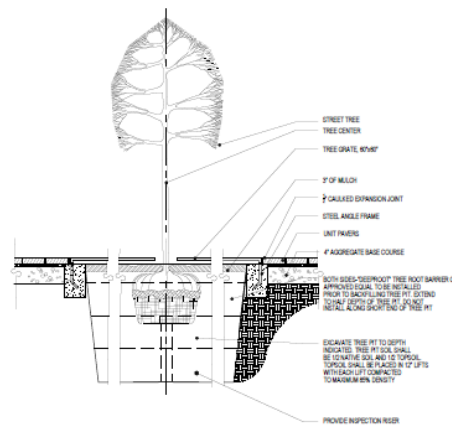
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Contract No.	100-100-XXXX
Division	100-100-XXXX
Section	100-100-XXXX
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DATE	10/10/10
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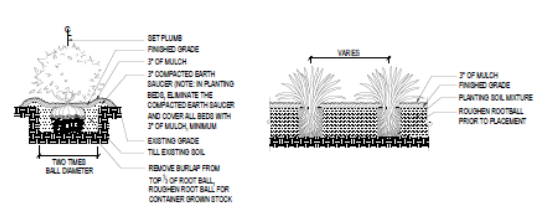
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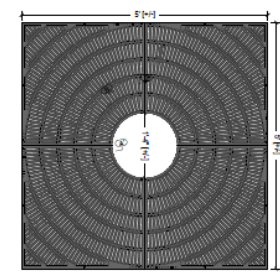
1 TREE PIT
1/2" = 1'-0"



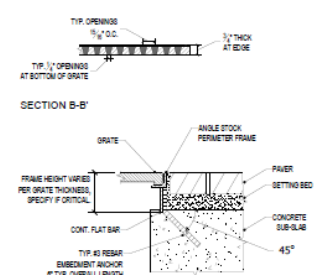
2 TREE PIT AND GRATE
NTS



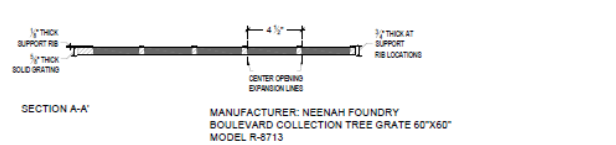
3 SHRUB AND PERENNIAL PLANTING DETAILS
1/2" = 1'-0"



TREE GRATE
NOTE: MODEL SHOWN ONLY AS PLACEHOLDER



FRAME INSTALLATION

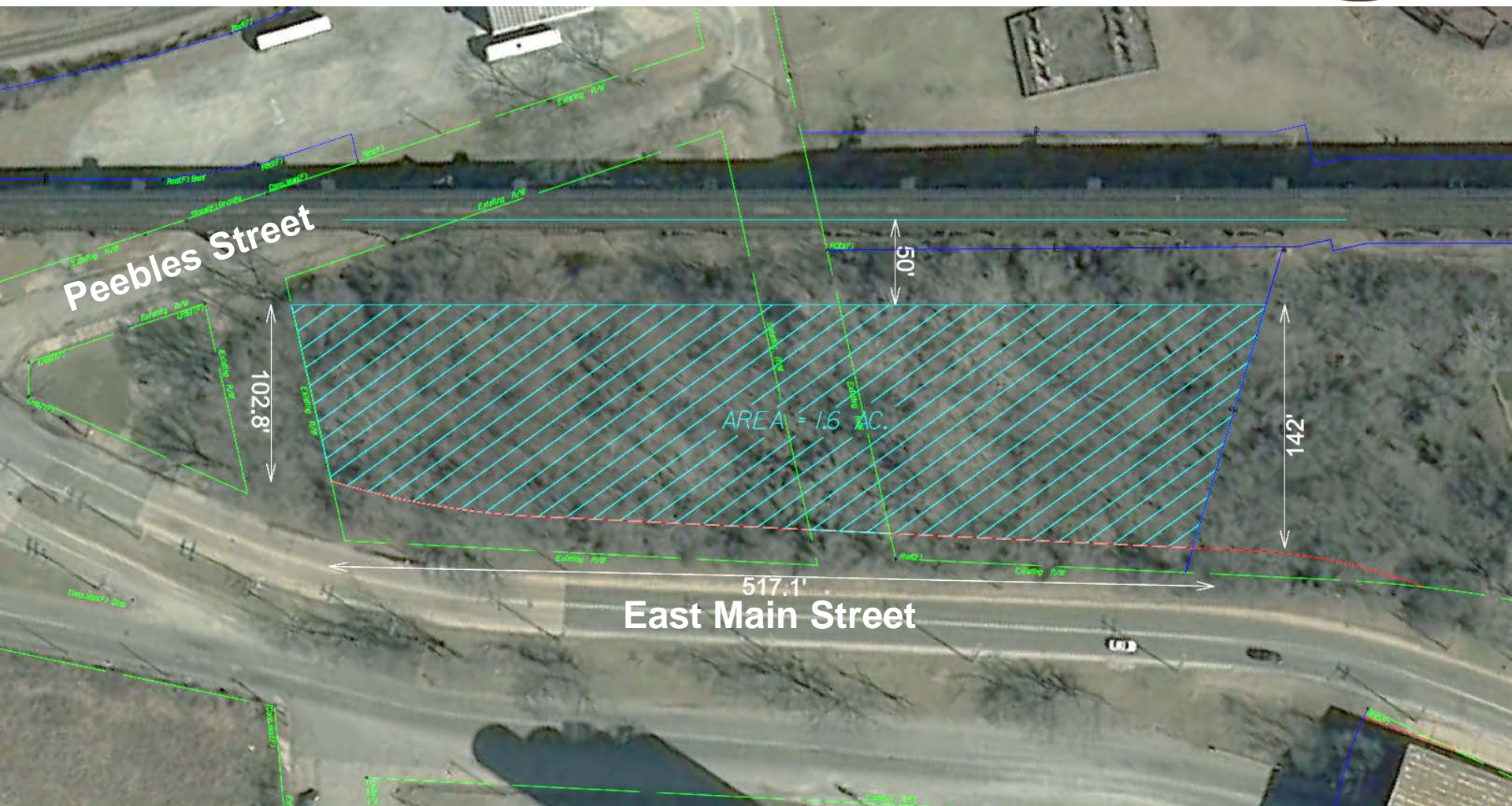


SECTION A-A
MANUFACTURER: NEEHAW FOUNDRY
BOULEVARD COLLECTION TREE GRATE 60"x60"
MODEL R-8713

East Riverfront Landscape Estimate of Probable Construction Cost			
Planting - General Richmond, Virginia Based on Pre-60% plans			
PLANT KEY	SCIENTIFIC NAME	COMMON NAME	QTY
Shade Trees			
AR	Acer rubrum	Scarlet Maple	4
AV	Asterias sp.	Star Birch	11
CC	Carpinus caroliniana	American Hornbeam	27
FC	Ficus sikkimensis	Chinese Fig	3
PA	Platanus x acerifolia Columbia	Columbia Planetree	21
OP	Quercus phellos	Willow Oak	3
CS	Quercus shumardii	Shumard Oak	25
TC	Tilia cordata 'Greenstar'	Greenspire Linden	14
Ornamental Small Trees			
AS	Azalea indica	Alabama Azalea	11
CCA	Cornus canadensis	Eastern Dogwood	3
Decorative Shrubs - Large - Small			
HO	Hydrangea quercifolia 'Pee Wee'	Pee Wee Oakleaf Hydrangea	15
RV	Rosa verticillata 'Red Spirit'	Red Spirit Dwarf Rose	63
WAL	Walden sp.	Little Henry Dwarf Sweetgum	63
PF	Potentilla fruticosa 'Gold drop'	Gold Drop Cinch	68
SP	Spirea japonica 'Little Princess'	Little Princess Spirea	48
Greenberg Shrubs			
ES	Erica sp.	Shamrock Hibery	86
Perennials and Grasses			
AB	Anemone x Blue Ice	Blue Star Anemone	39
AS	Anemone sylvestris	Snowdrop Windflower	69
AI	Anthriscus nemorosus	Sweeting Milkweed	69
EP	Echinacea purpurea 'Magnus'	Purple Coneflower	74
ED	Eupatorium altissimum Little Joe	Dwarf Joe Pye Weed	33
MC	Muhlenbergia capillaris 'White Cloud'	White Muffin Grass	89
NP	Nappa x leucosa 'Walker's Low'	Catmint	34
PC	Panicum Cap Breeze	Cap Breeze Switchgrass	174
PV	Panicum argatum	Sherandeah Switchgrass	63
PF	Panicum argatum 'Prairie Fire'	Prairie Fire Switchgrass	70
PA	Panicum sp.	Russian Sage	32
RF	Rudbeckia hirta	Orange Coneflower	101
SH	Saxifraga nemorosus 'East Friesland'	Flowering Saxif	438
SH	Sporobolus heterolepis	Prairie Dropseed	39
VV	Veronicastrum virginicum 'Mauve'	Coker's Root	48
Groundcover			
LM	Liriodendron 'Big Blue'	Big Blue Linnea	297

5 PLANT SCHEDULE

<p>NOTES:</p> <p>1. See Section 02000 for details.</p> <p>2. See Section 02000 for details.</p> <p>3. See Section 02000 for details.</p> <p>4. See Section 02000 for details.</p> <p>5. See Section 02000 for details.</p>	<p>DATE: 06/12/2018</p> <p>TIME: 10:00 AM</p> <p>PROJECT: EAST RIVERFRONT TRANSPORTATION IMPROVEMENT</p>	<p>DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA</p>	<p>EAST RIVERFRONT TRANSPORTATION IMPROVEMENT</p> <p>LPDA</p>	<p>0-XXXXX</p>
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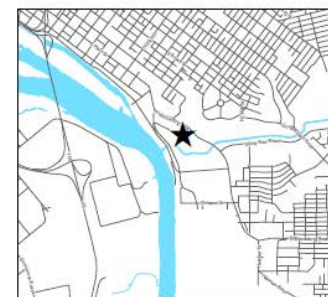
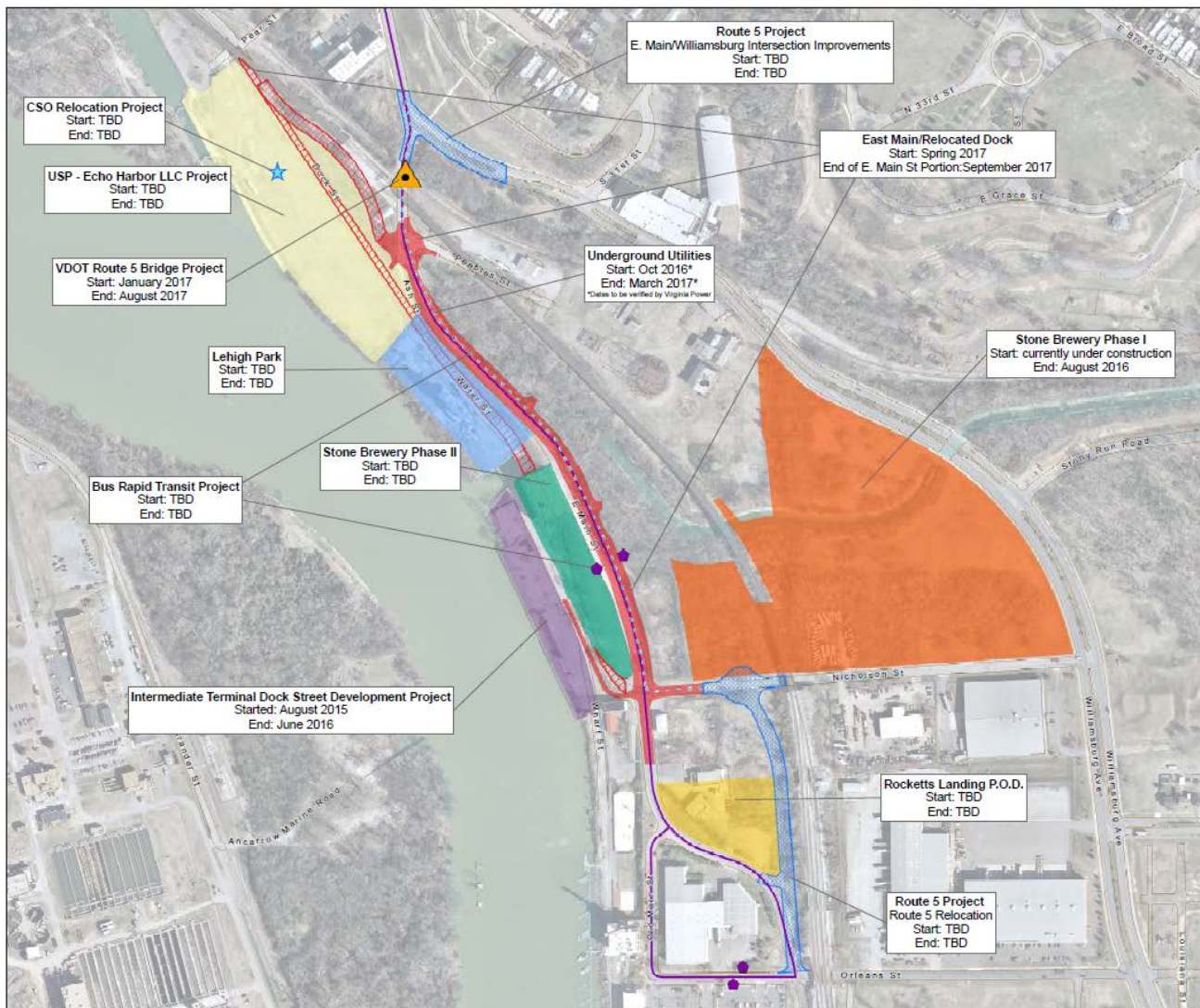
**Potential Area of Development
Near East Main Street and Peebles Street**





East Riverfront

Ongoing and Upcoming Projects
December 3, 2015



LOCATION REFERENCE

LEGEND

- VDOT Route 5 Bridge Project
- CSO Relocation Project
- Underground Utilities
- USP - Echo Harbor LLC Project
- Intermediate Terminal Dock Street Development Project
- Lehigh Park
- Rocketts Landing P.O.D.
- Route 5 Project
- Bus Rapid Transit Project**
 - BRT Stations
 - BRT Route
- Stone Brewery**
 - Phase I - Brewery and Distribution Center
 - Phase II - Bistro
- East Riverfront Transportation Projects**
 - Relocated Main St.
 - Relocated Dock St.
 - Dock St. and Water St. Closure

