

Forest Hill Avenue Improvement Project

Introduction



Forest Hill Avenue Improvement Project

Presenters:

Archie Drudge, Stantec
and Kevin T. Newcomb,
City of Richmond,
Department of Public
Works

Date: Feb. 7, 2013
UDC Meeting



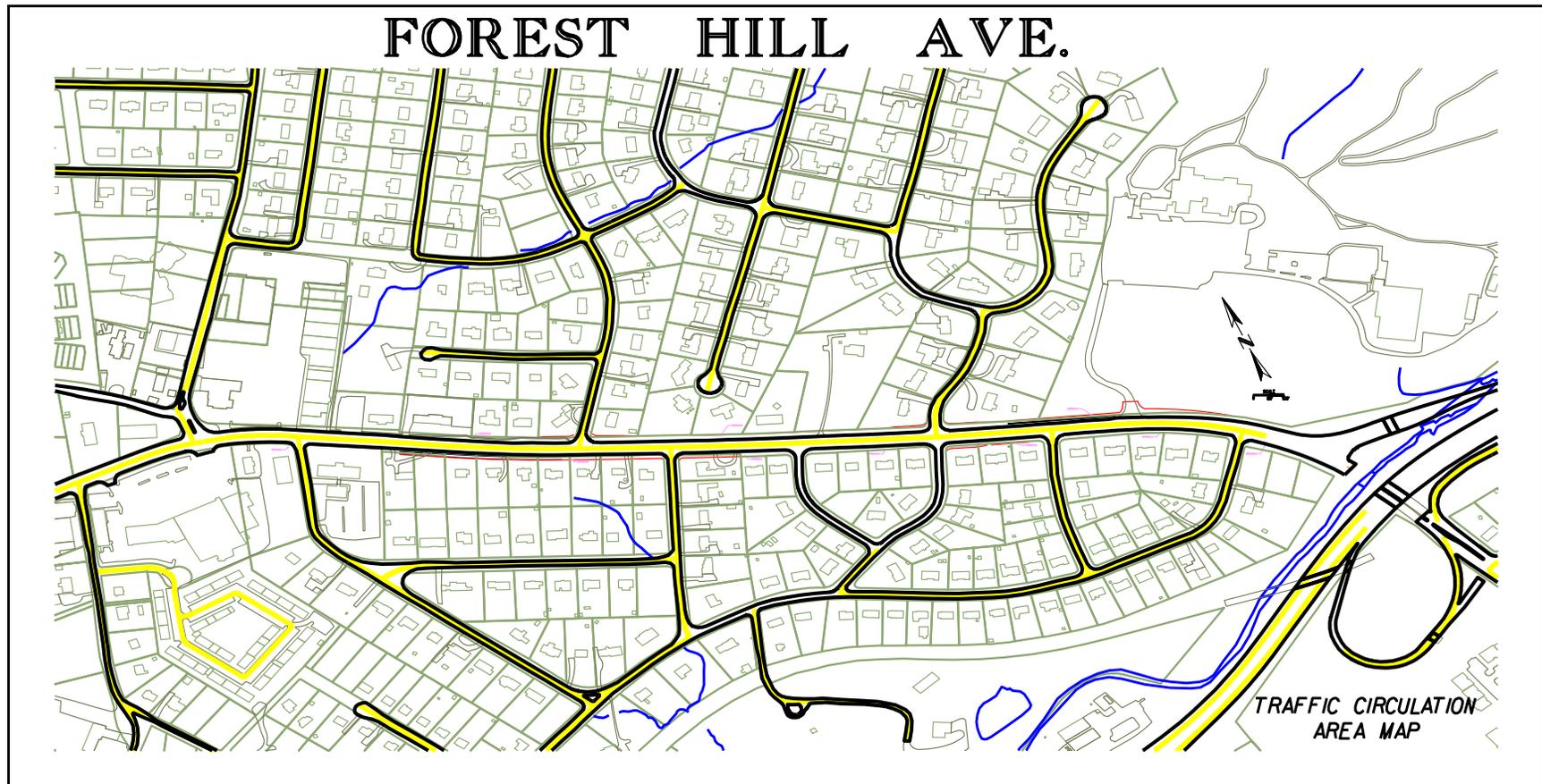
One Team. Infinite Solutions



Stantec

Forest Hill Avenue Improvement Project

Project Area; From: Hathaway Road To: Powwhite Parkway



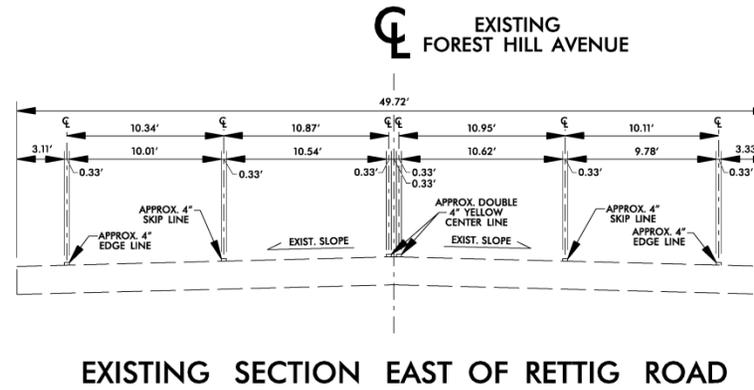
Forest Hill Avenue Improvement Project

History / Existing Conditions

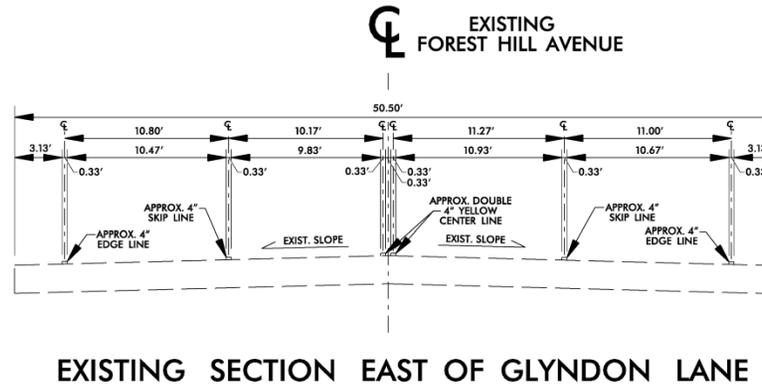
- No sidewalks, no pedestrian crossings, no consideration for bikes
- The City owns most of the Right of Way the which improvements are proposed – the right of way varies from 70-90 feet +/-.
- City Master Plan Project
- Principal Arterial Roadway Classification
- 216 accidents within the Project Limits, during the three year study period – 95 were mid-block accidents
- Existing Traffic Volumes – counts May 2009 confirming function and classification – 33,000 ADT
- Projected 2030 Traffic Volumes – 44,400 ADT

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Existing Condition Lane Width



Width varies 49-50 feet, includes pavement & shoulders



Forest Hill Avenue Improvement Project

Annual Crash Total Analysis – Excerpt T3 Study

LOCATION	RE	ANG	HO	SUBTOTAL	GRAND TOTAL
Grand Total 2006-2008	98	54	16	168	216
Intersection	54	34	10	98	121
Mid-Block	44	20	6	70	95

Legend:

RE Rear end

ANG Angle

HO Head on

SSOD Sideswipe opposite direction

SSSD Sideswipe same direction

OTH Other

FOOR Fixed object off road

DR Deer

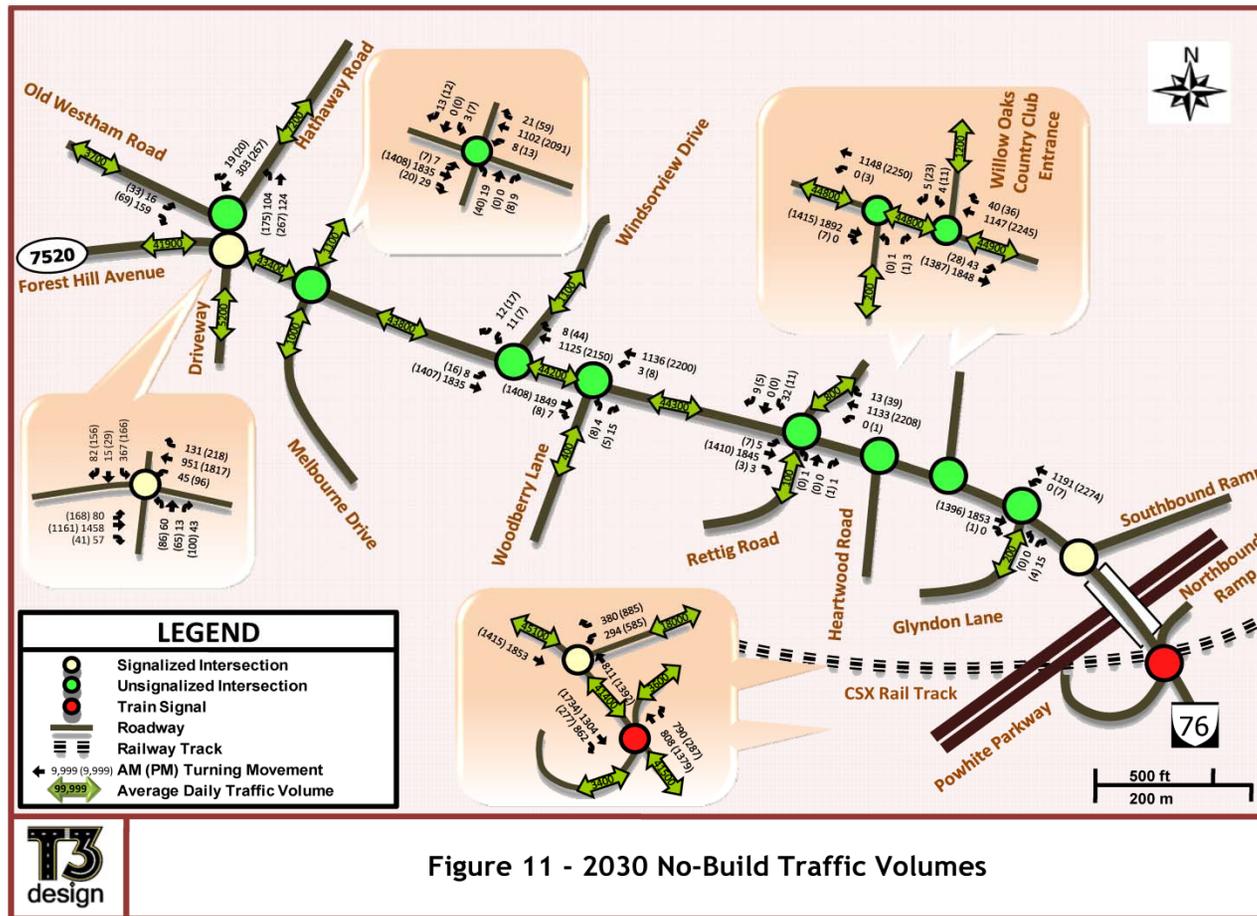
FOIR Fixed object in road

N/C Non-Collision

Forest Hill Avenue Improvement Project

Projected ADT 2030

Forest Hill Widening Project Traffic Study



Forest Hill Avenue Improvement Project

Project Goals

Pedestrian Safety:

- Provide refuge for pedestrians, handicap / wheelchair person and adults with strollers
- Provide sidewalks, crosswalks and designated bike lanes

Landscaping/ Gateways:

- Landscaped medians enhance livability
- Provide identifiable gateways and focal points of the community
- Treed / Landscaped medians and roadside trees create tree canopies over travel lanes therefore creating a perception of narrow travel lanes and reducing vehicular speed on median vs. a flushed median

Environmental Benefits:

- Provides noise, storm water run off and air quality benefits

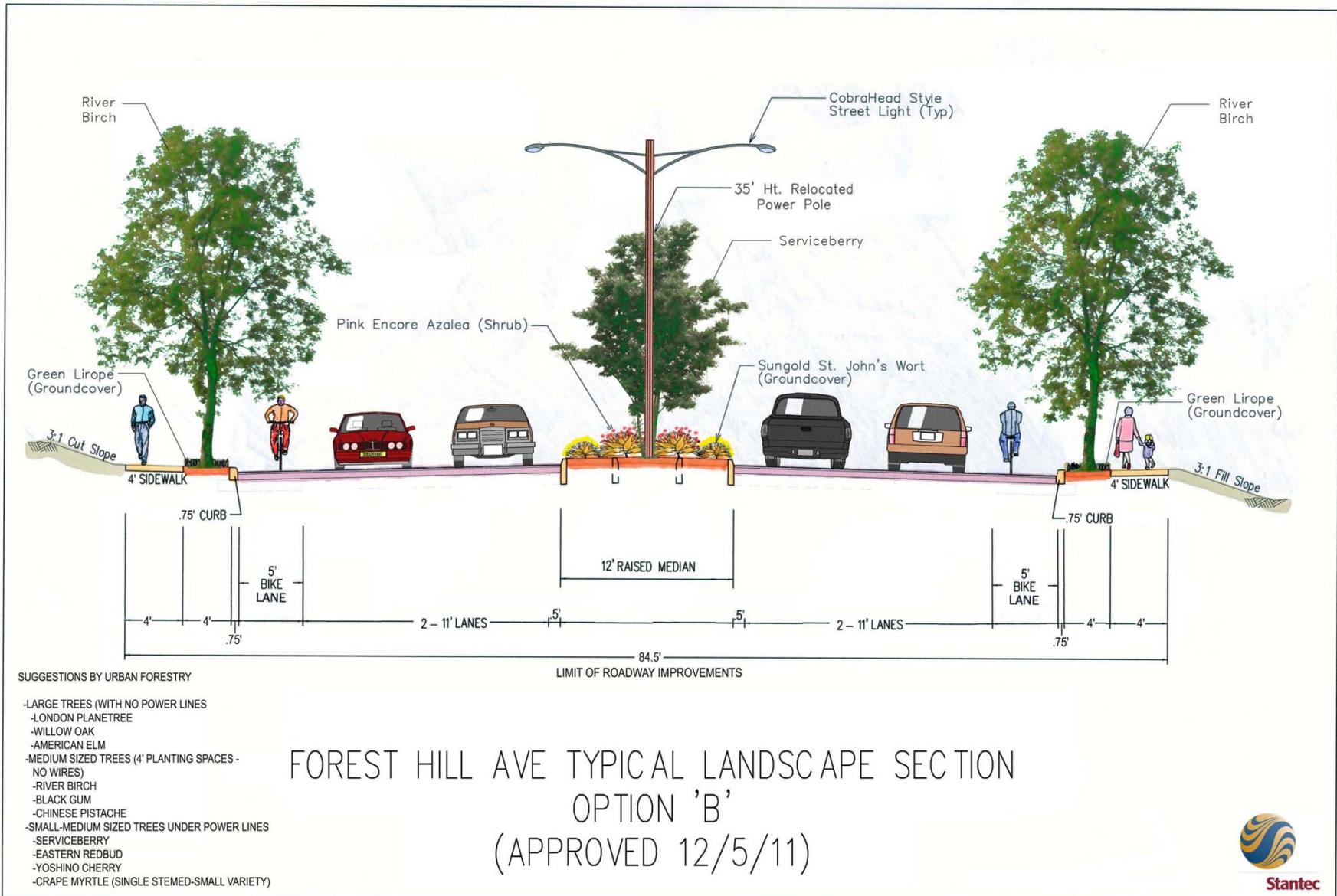
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Vehicular Safety:

- Medians permit separate left turn lanes. This reduces rear end crashes from through vehicles and angle crashes (drivers not holding up through traffic are more likely to wait for a safe gap in opposing traffic)
- Median separates opposing through traffic and reduces number of conflict points, thereby reducing head on and other types of crashes

Access Management:

- Allows safe access in/out of the properties. Directs local traffic to make turning movements at the median openings, where it is safe to make the turn



Forest Hill Avenue Improvement Project

Raised Median Benefits

- Pedestrian Safety
- Vehicular Safety
- Access Management
- Landscaping/ Gateways
- Environmental Benefits
- Efficient & positive traffic control & traffic flow

Forest Hill Avenue Improvement Project

Raised Median Research Data

Research indicates – Oregon Study

- Head-on crash rate for divided highways was 30% of the rate on undivided highways
- Intersection crash rate was 24% of the rate on undivided highways
- Total crash rates on divided highways were 42% less than on undivided highways
- On roads with traffic > 24,000 VPD reducing unrestricted left turns is key to reducing crashes

Research indicates – Florida Study

- Rates for vehicle crashes involving pedestrians on urban arterials are 5 times higher on undivided roads than on roadways with medians
- Pedestrian-vehicle crash rates were higher at mid-block on undivided highways than at mid-block in raised median sections

Forest Hill Avenue Improvement Project

In conclusion, this safer multi-modal roadway project includes:

- Adds 7,300 feet of new and improved sidewalks
- Creates a pedestrian connection from Hathaway Road to Powhite Parkway
- Adds 7,000 feet of new and improved bike lanes
- Creates 15 proposed crosswalk locations
- Makes the corridor handicap accessible with 28 new ramps
- Adds 145 +/- new trees at the improvements' edge
- Adds 81 +/- new trees in the median
- Adds additional groundcover and shrubbery within the medians
- Improves the bus stop locations
- Attempts to save existing mature trees
- Medians make crossing Forest Hill Avenue safer for all pedestrians
- Decreases noise, air, and water pollution

Forest Hill Avenue Improvement Project

Citizen Input

- Created website
- Created dedicated email address for questions/ comments

Public Input Meeting History

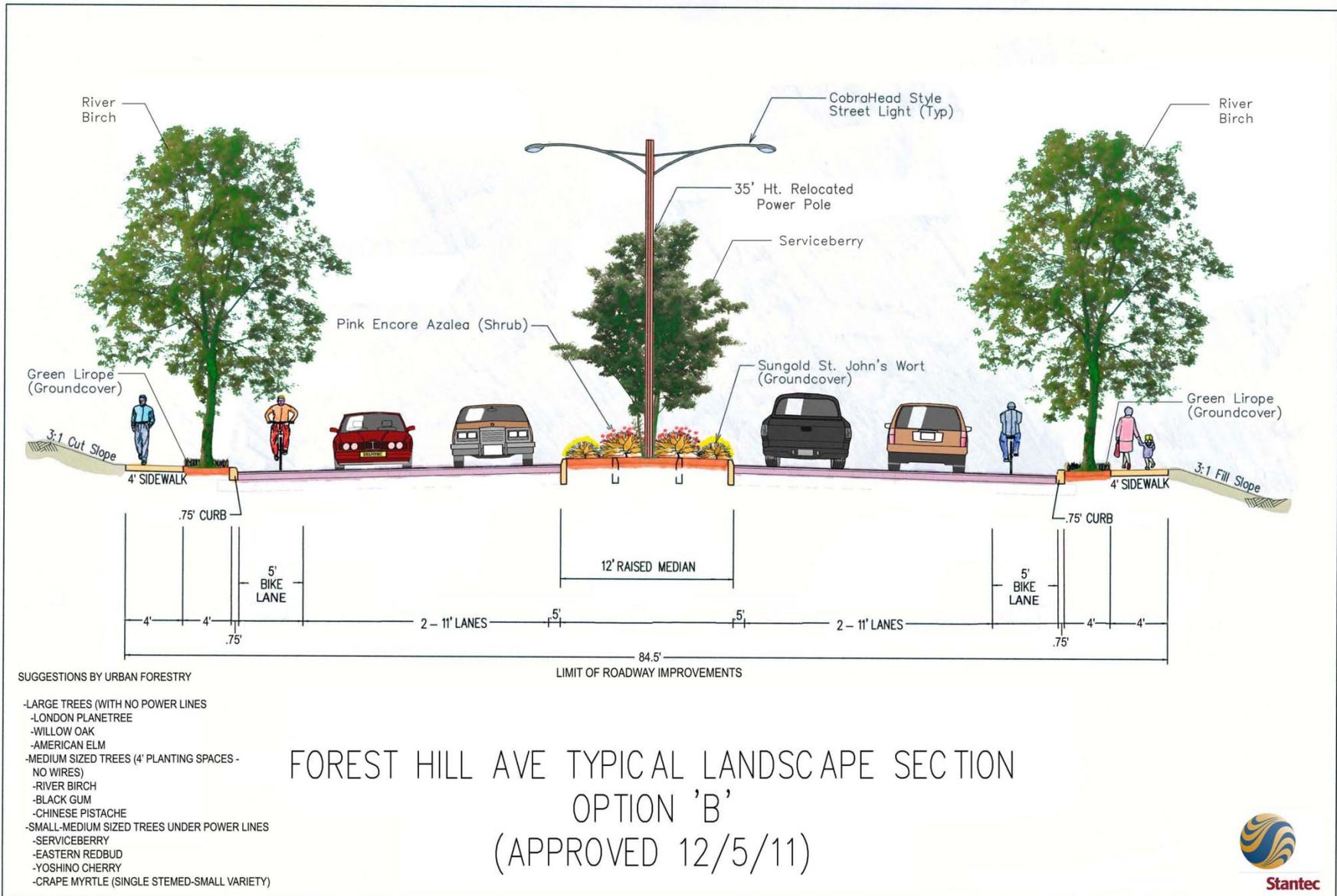
DPW Staff met with Willow Oaks Country Club	3/18/2008
Forest Hill Widening Initial Public Introduction	5/12/2008
CIM - (Citizen Information Meeting)	12/17/2009
2nd CIM - (Citizen Information Meeting)	11/10/2010
3rd CIM - (Citizen Information Meeting)	3/17/2011
Public Review of Project Documents	7/13/2011
CPC Conceptual Approval	7/18/2011
Stakeholder Meeting	9/21/2011
Stakeholder Meeting	10/26/2011
CPC Informal Approval of Option "B"	12/05/2011
Forest Hill Ave. Landscape Committee Meetings	
With Jo Ann Charlesworth, Chairman, 3/26/2012 thru 5/16/2012	

Forest Hill Avenue Improvement Project

Changes Based on Citizen, UDC and CPC Input

- Reduce speed limit to 35 mph
- Reduce Roadway footprint (from 92.5 to 84.5)
- Remove right turn lanes
- Reduce median width (from 15 ft. to 12 ft.)
- Widen Bike Lane to 5 ft.
- Added median crossover at Woodbury (access to the south)
- Extend bike lanes east to Fairlee Ave. and west to Hathaway Rd.
- Revised drainage to eliminate SW Basin, by using Filterra Units
- Added right turn lane at Hathaway Road
- Add synchronized light at Melbourne Dr. to work with Hathaway

Road Signal Phasing

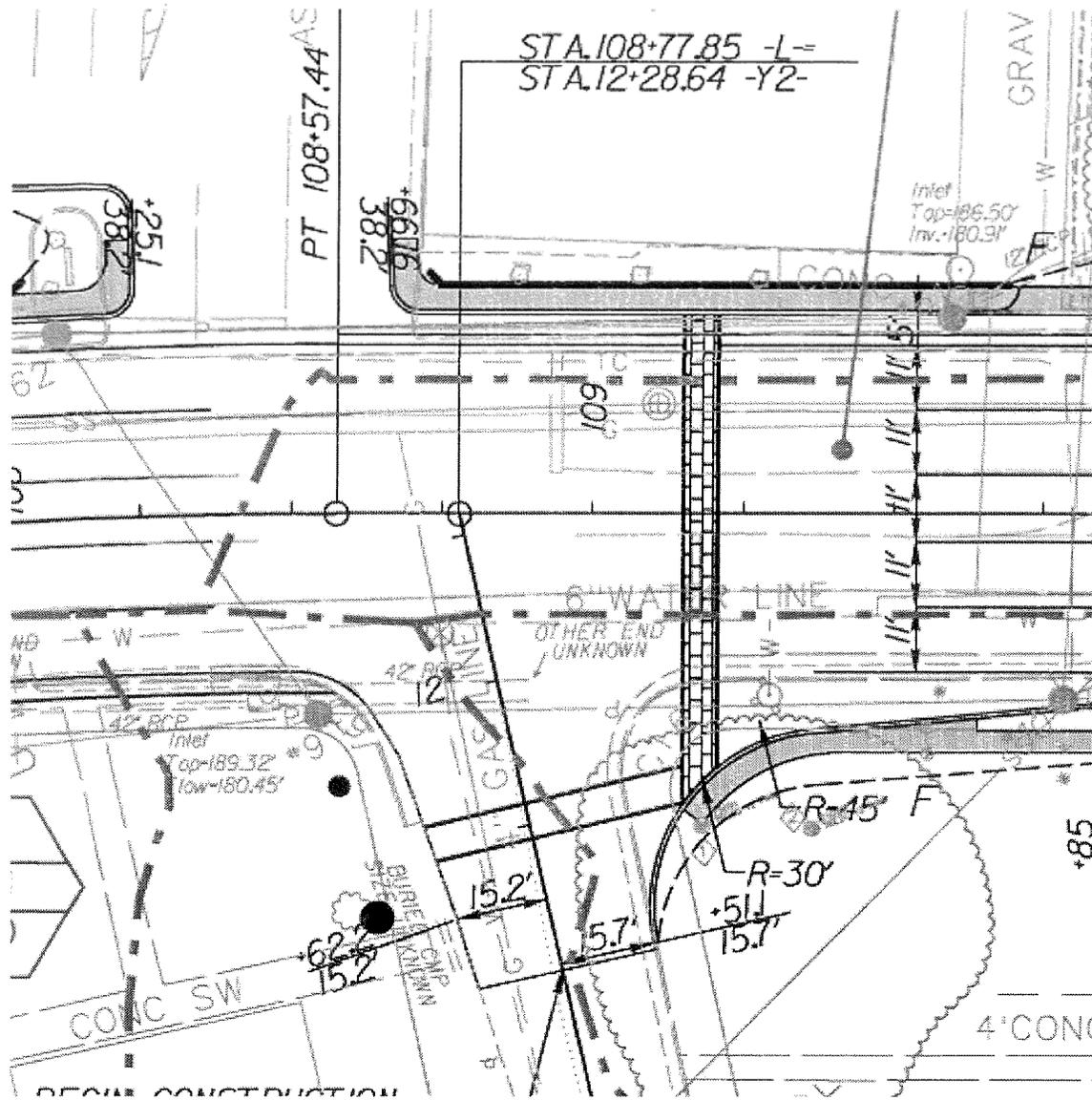


Forest Hill Avenue Improvement Project

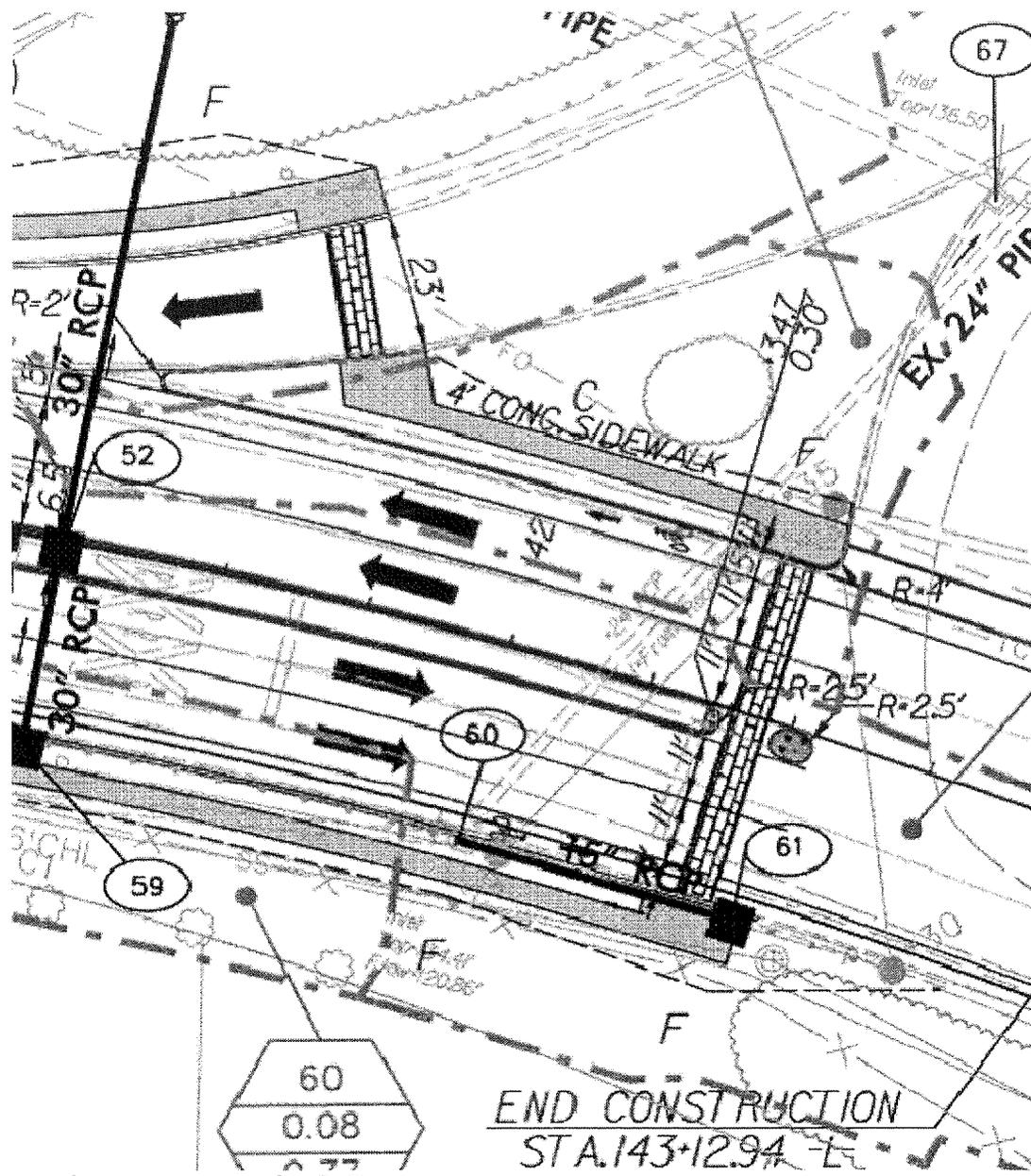
Based on Recommendations and Suggestions from the City Planning Commission of the informal approval;

The Department of Public Works has responded to the CPC request as follows.

- Added Brick / Textured Pavers to the Proposed Crosswalks on Forest Hill Avenue at four locations
 - Melbourne Drive
 - Windsorview Drive
 - Rettig Road
 - Powwhite Parkway Off Ramp



Melbourne Drive



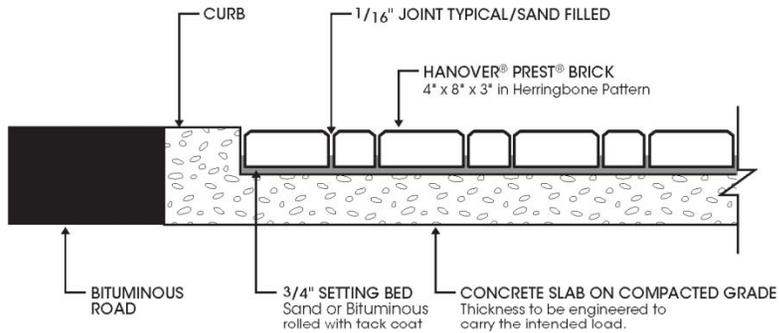
Powwhite Parkway

Forest Hill Avenue Improvement Project

- CPC Members and Citizens have ask that the crosswalk pavers be done with a contrasting colored pavers to make them more visible and a more sense of place and identification.
- The DPW Standard paver is Holland Autumn Red, however of options can be considered.

Hanover® Prest® Brick Crosswalk Detail

Concrete Base with curb (depressed slab)



Joints must be filled with sand and compacted with a vibrating plate compactor.
 Concrete slab and subgrade must be engineered by other to carry the intended load.
 All edges must be restrained.

Please Note: Sizes shown are nominal. Products are made to fit metric modules.

HANOVER®
Architectural Products
 5000 Hanover Road, Hanover, PA 17331
 717.637.0500 fax 717.637.7145
 www.hanoverpavers.com

9.28.09



Shown in Charcoal and Red/Charcoal Blend

Traditional® Prest® Brick with Natural Finish 67

4' x 8' x 2-3/8" Stacked Colors



Shown in Quarry Red

Thickness	pcs. per s.t.	s.t. per sf/ft²		lbs. per cube	
		pcs. per s.t.	s.t. per cube	s.t. per truck	lbs. per cube
1 1/2"	4.5	24.89	672	149.34	2688.12
2 3/8"	4.5	20	540	120	1680
3"	4.5	16	432	96	1248

Sizes shown are nominal. Products are made to fit metric modules.

Hanover's blended colors consist of several shades and will include some blended and some solid pieces.



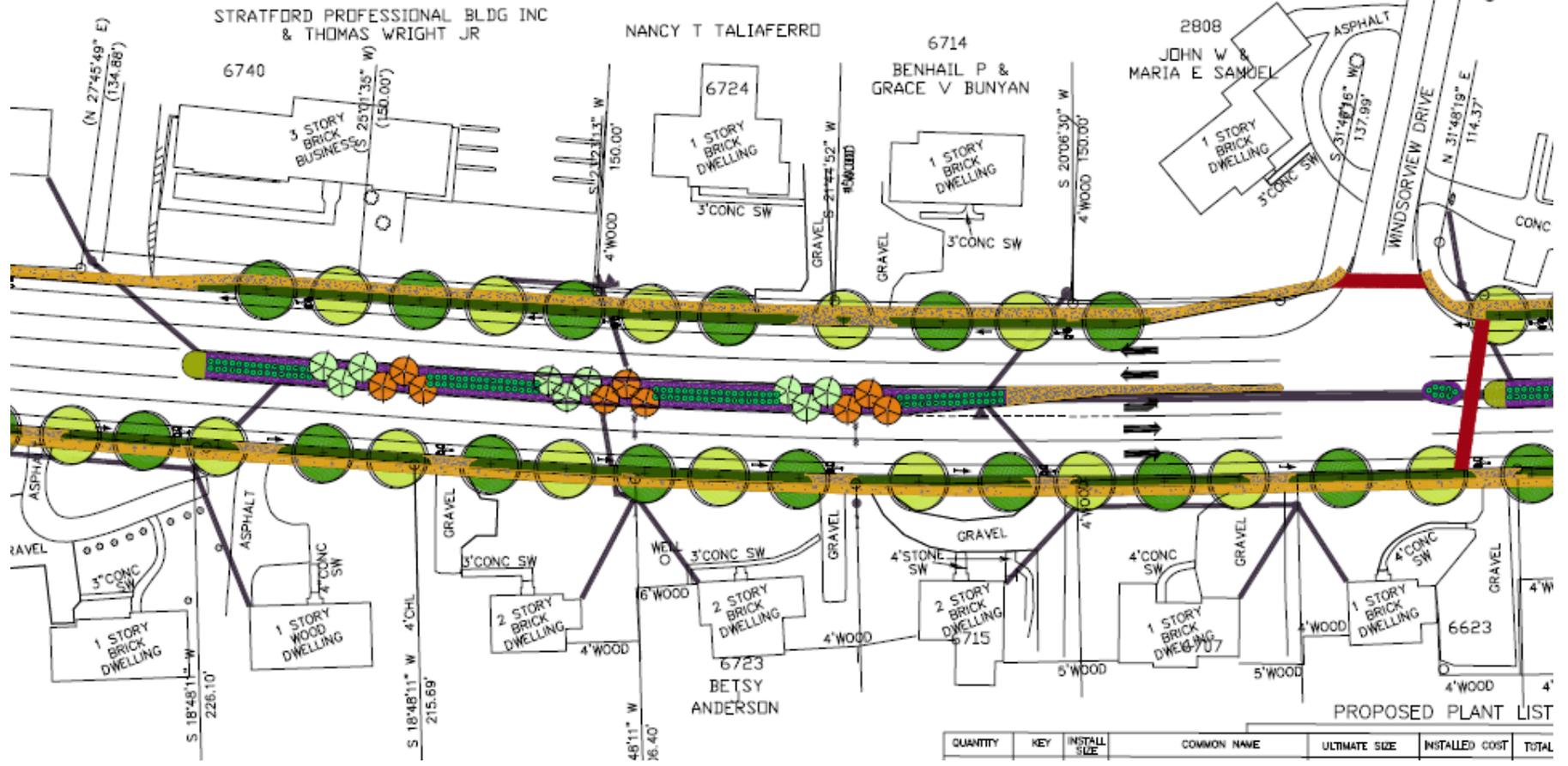
Forest Hill Avenue Improvement Project

- DPW created a Forest Hill Avenue Citizens Landscape Committee to review and make recommendations to the Proposed Landscape Plans, the Group meet several times from March 26, 2012 thru May 16, 2012

PC

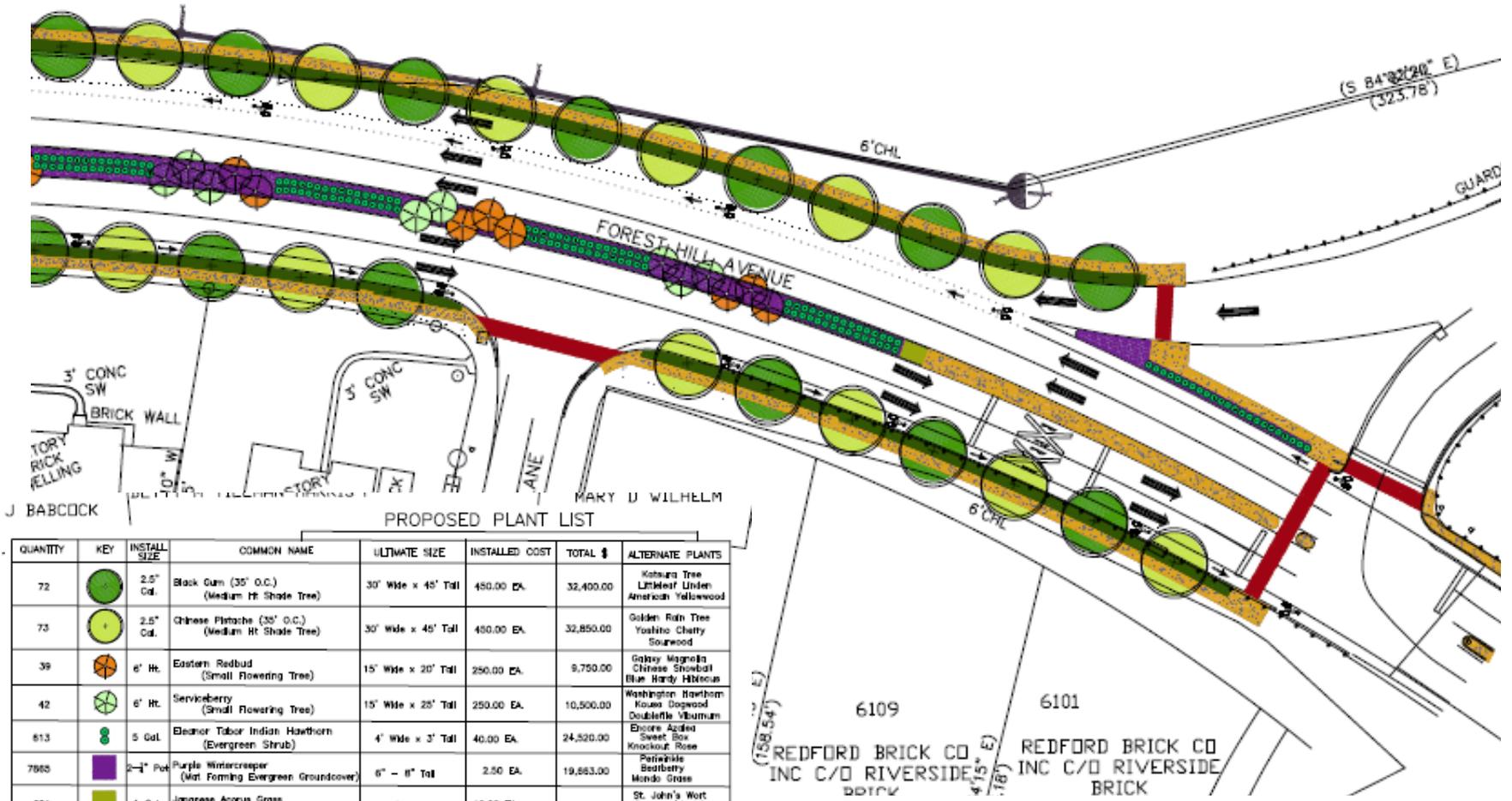
QUANTITY	KEY	INSTALL SIZE	COMMON NAME	ULTIMATE SIZE	INSTALLED COST	TOTAL
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PROPOSED PLANT LIST



PROPOSED PLANT LIST

QUANTITY	KEY	INSTALL SIZE	COMMON NAME	ULTIMATE SIZE	INSTALLED COST	TOTAL
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J BABCOCK

PROPOSED PLANT LIST

QUANTITY	KEY	INSTALL SIZE	COMMON NAME	ULTIMATE SIZE	INSTALLED COST	TOTAL \$	ALTERNATE PLANTS
72		2.5' Gal.	Black Gum (35' O.C.) (Medium Ht Shade Tree)	30' Wide x 45' Tall	450.00 EA.	32,400.00	Kobara Tree Limeleaf Under American Yellowwood
73		2.5' Gal.	Chinese Pistache (35' O.C.) (Medium Ht Shade Tree)	30' Wide x 45' Tall	450.00 EA.	32,850.00	Golden Rain Tree Yoshino Cherry Sourwood
39		6' Ht.	Eastern Redbud (Small Flowering Tree)	15' Wide x 20' Tall	250.00 EA.	9,750.00	Galaxy Magnolia Chinese Snowball Blue Hardy Hibiscus
42		6' Ht.	Serviceberry (Small Flowering Tree)	15' Wide x 25' Tall	250.00 EA.	10,500.00	Washington Hawthorn Kousa Dogwood Doublefile Viburnum
613		5 Gal.	Bladder Tabor Indian Hawthorn (Evergreen Shrub)	4' Wide x 3' Tall	40.00 EA.	24,520.00	Encore Azalea Sweet Box Knockout Rose
7865		2-4" Pot	Purple Wintercreeper (Mat Forming Evergreen Groundcover)	6" - 8" Tall	2.50 EA.	19,663.00	Petawake Seaiberry Mondo Grass
621		1 Gal.	Japanese Acorus Grass (Variegated Evergreen Groundcover)	12" Tall	10.00 EA.	6,210.00	St. John's Wort German Iris like Variegated Urtica
12,000 SF		SEED or SOO	Grass Strip Between Curb & Sidewalk	N/A	N/A	TBD	

GRAND TOTAL \$135,893.00
 NIC: Topsoil, Grading, Mulch, Watering

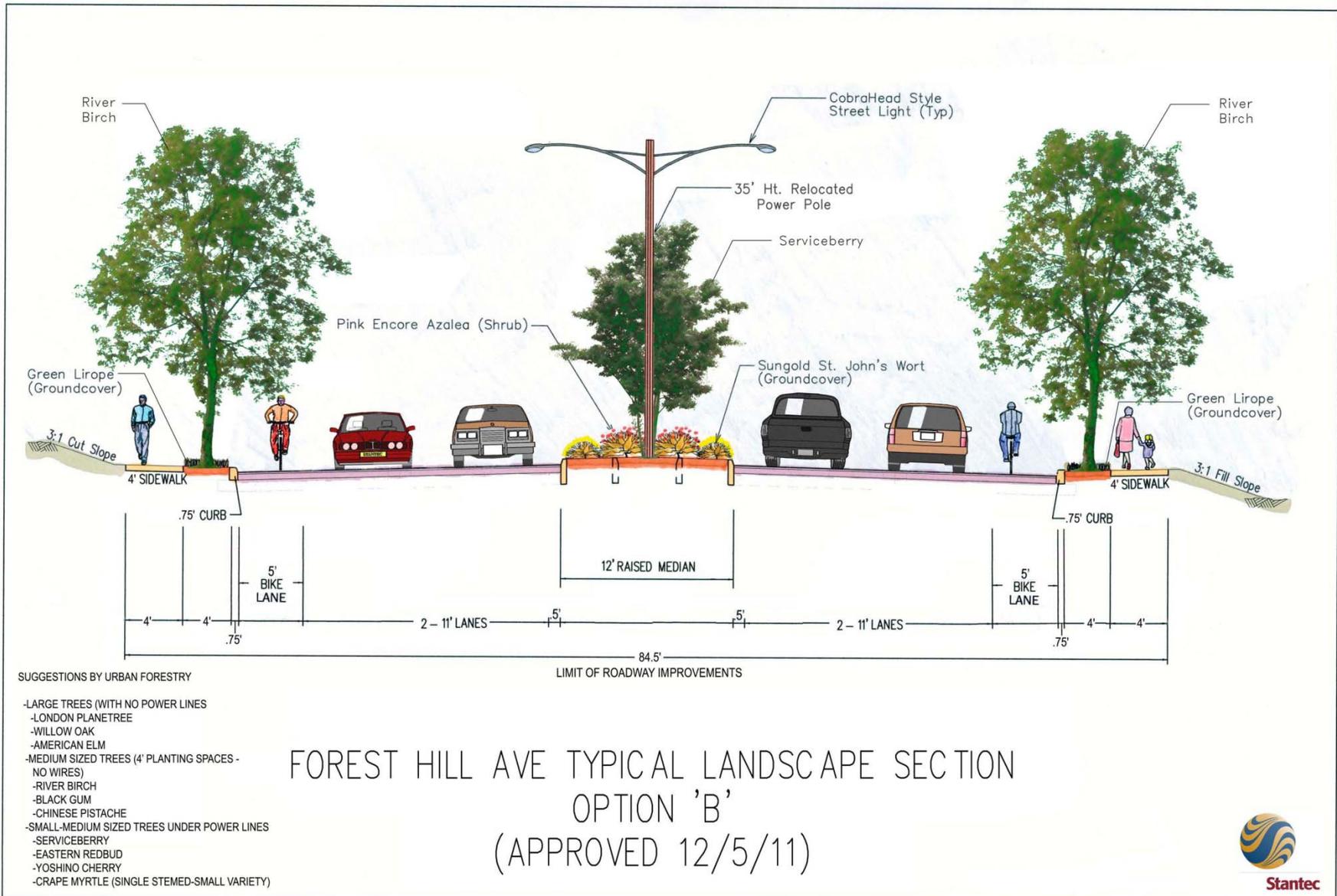
6109
 REDFORD BRICK CO
 INC C/O RIVERSIDE
 BDRV (158.54' E) 4' (15.0' E) 1.78'

6101
 REDFORD BRICK CO
 INC C/O RIVERSIDE
 BRICK

Forest Hill Avenue Improvement Project

Utility Relocations;

- The Department of Public Works has requested funding from the MPO to cover the cost of relocating all overhead utilities lines underground, however funding has not been approved.
- DPW has meet with Dominion Power, Verizon and Comcast Utility Providers, and all have agreed to bring their service connections from the median **to the landscape / utility buffer through underground conduits** and then overhead to the users. This decision was agreed to during a City Staff review meeting 12/12/12, and well received by the City Planning members in attendance.



Forest Hill Avenue Improvement Project

- Citizens requested the City look into alternate materials for the construction of the proposed retaining walls along Forest Hill Avenue.
- The Granite color would be the first choose of the DPW Staff.







Thomasville Facility Contact:
5952 Lincoln Highway East
Thomasville, PA 17364
717.792.4700

RETAINING WALL COLOR GUIDE
THOMASVILLE, PA PRODUCTION FACILITY

Available Colors:



Auburn



Driftwood



Granite



Smoke

Available Products:

KEYSTONE
CENTURY WALL®



KEYSTONE
HALF-CENTURY



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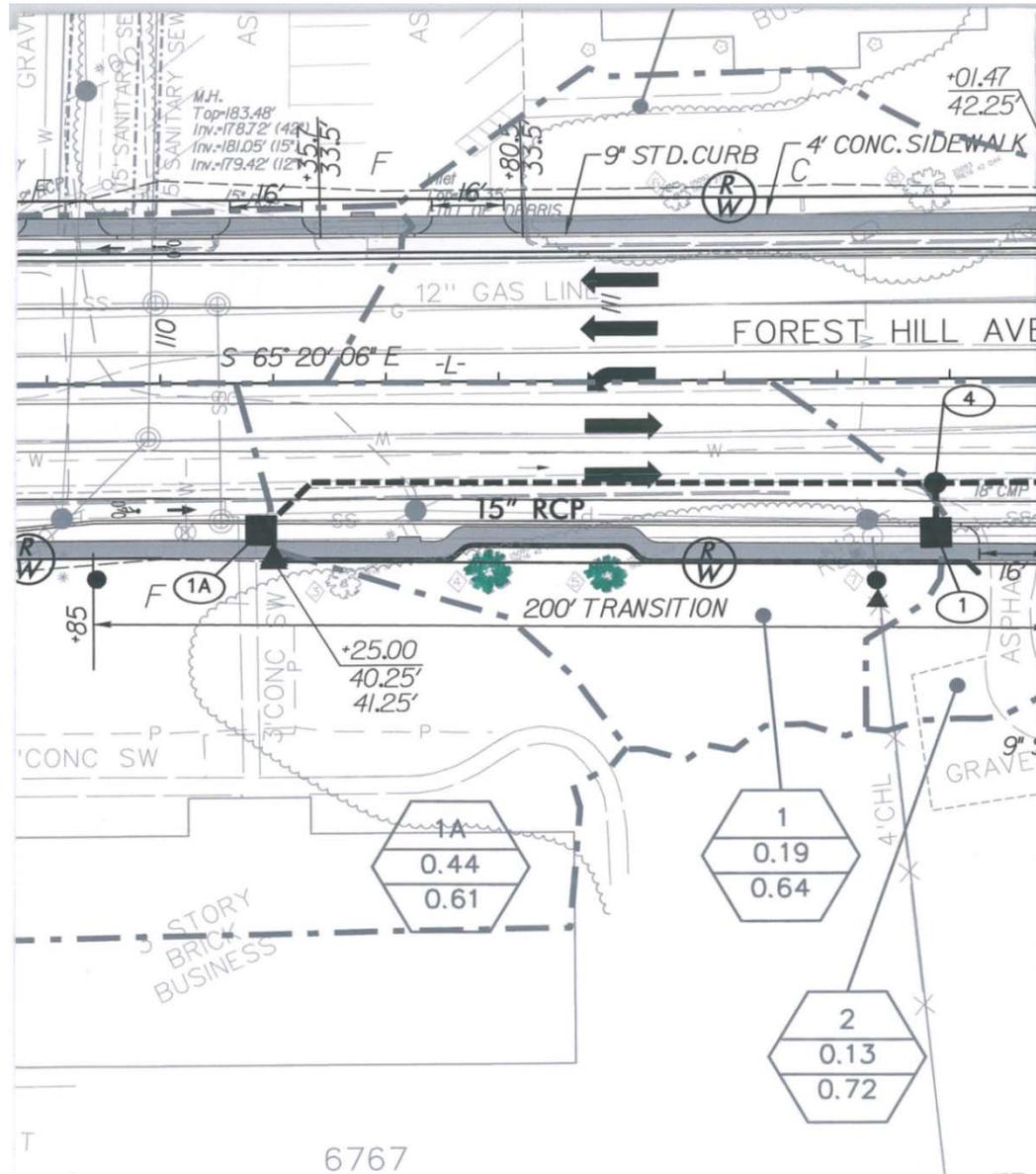
- Citizens concerns with safety issues when crossing Forest Hill Avenue within designated crosswalks, are there some type of signs or signals that would alert motorist of pedestrians crossing.



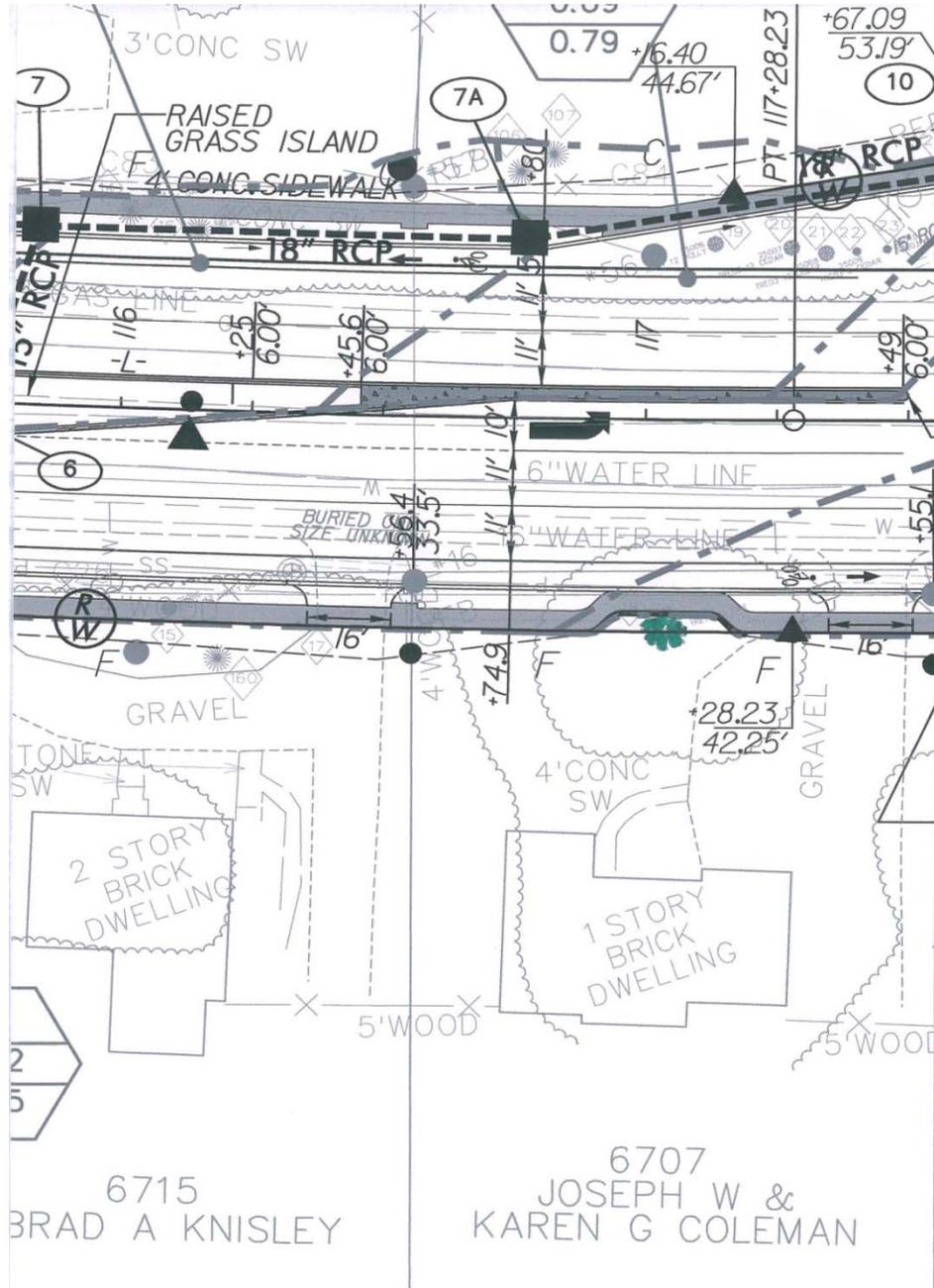
W11-2

Forest Hill Avenue Improvement Project

- Citizens and residents along the Forest Hill Avenue corridor are concerned about the roadways impact on the mature trees that line the existing roadway. The City staff has addressed these concerns with many of changes that have been made throughout the citizen input phase of the design process.



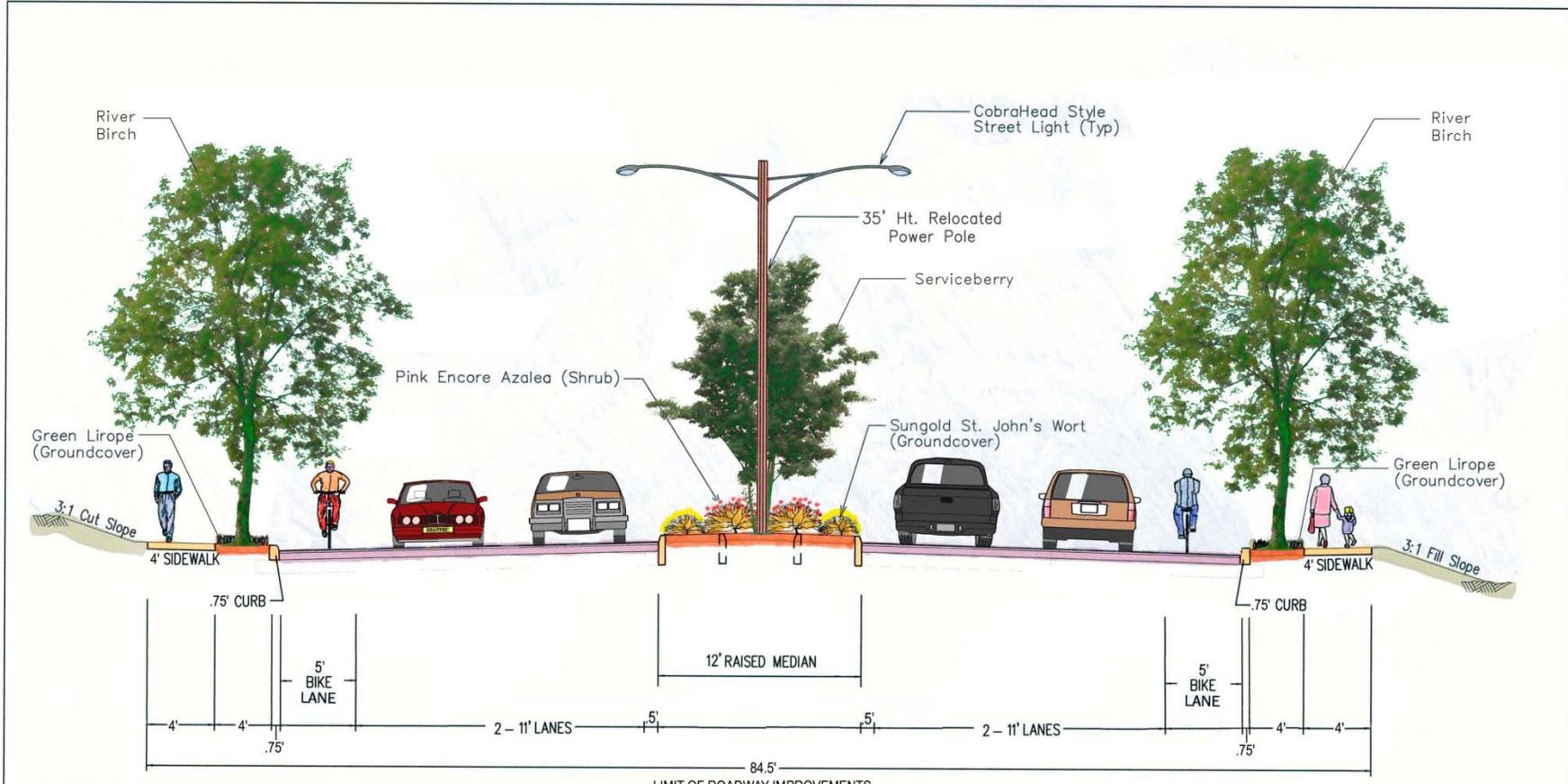
Tree Save Areas
 Number of trees saved = 71



Tree Save Areas

Forest Hill Avenue Improvement Project

- Citizen groups ask if there were other options that could be considered for street lighting other than Cobra Heads, however that is the preferred style of the City.



SUGGESTIONS BY URBAN FORESTRY

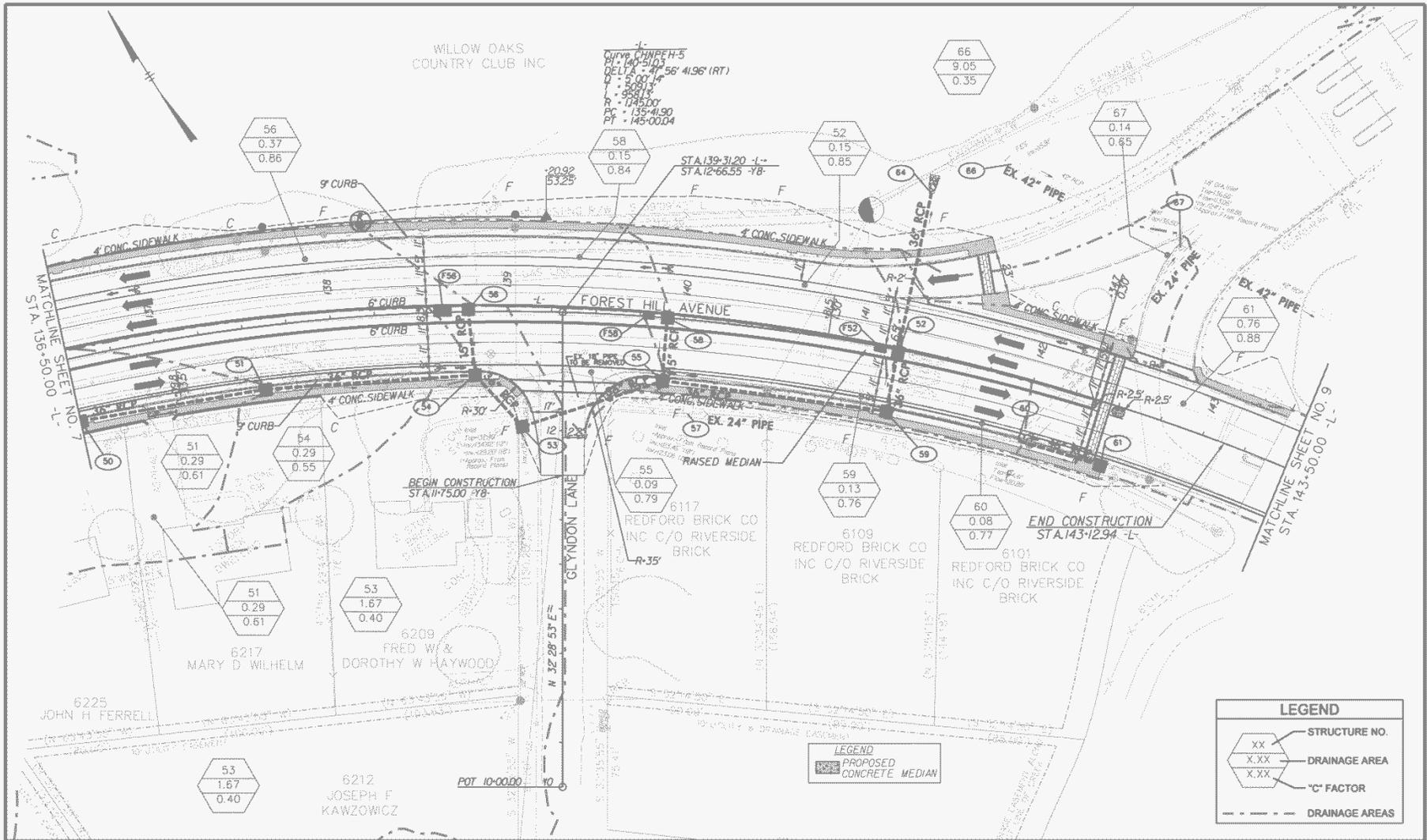
- LARGE TREES (WITH NO POWER LINES)
 - LONDON PLANETREE
 - WILLOW OAK
 - AMERICAN ELM
- MEDIUM SIZED TREES (4' PLANTING SPACES - NO WIRES)
 - RIVER BIRCH
 - BLACK GUM
 - CHINESE PISTACHE
- SMALL-MEDIUM SIZED TREES UNDER POWER LINES
 - SERVICEBERRY
 - EASTERN REDBUD
 - YOSHINO CHERRY
 - CRAPE MYRTLE (SINGLE STEMED-SMALL VARIETY)

FOREST HILL AVE TYPICAL LANDSCAPE SECTION
 OPTION 'B'
 (APPROVED 12/5/11)



Forest Hill Avenue Improvement Project

- From Citizen and DPU request, DPW has revised it's storm water drainage design to eliminate the SW Basin at the east end of the project near Glyndon Lane, by using Filterra Units to treat the storm water within the proposed drainage system design.



LEGEND	
XX	STRUCTURE NO.
X.XX	DRAINAGE AREA
X.XX	"C" FACTOR
---	DRAINAGE AREAS

LEGEND
 PROPOSED CONCRETE MEDIAN

FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Design Supervisor	Capital Project Administrator
Project Engineer	Special Engineer for Transportation / Public Works
Midlevel Engineer	Director of Public Works
City Traffic Engineer	

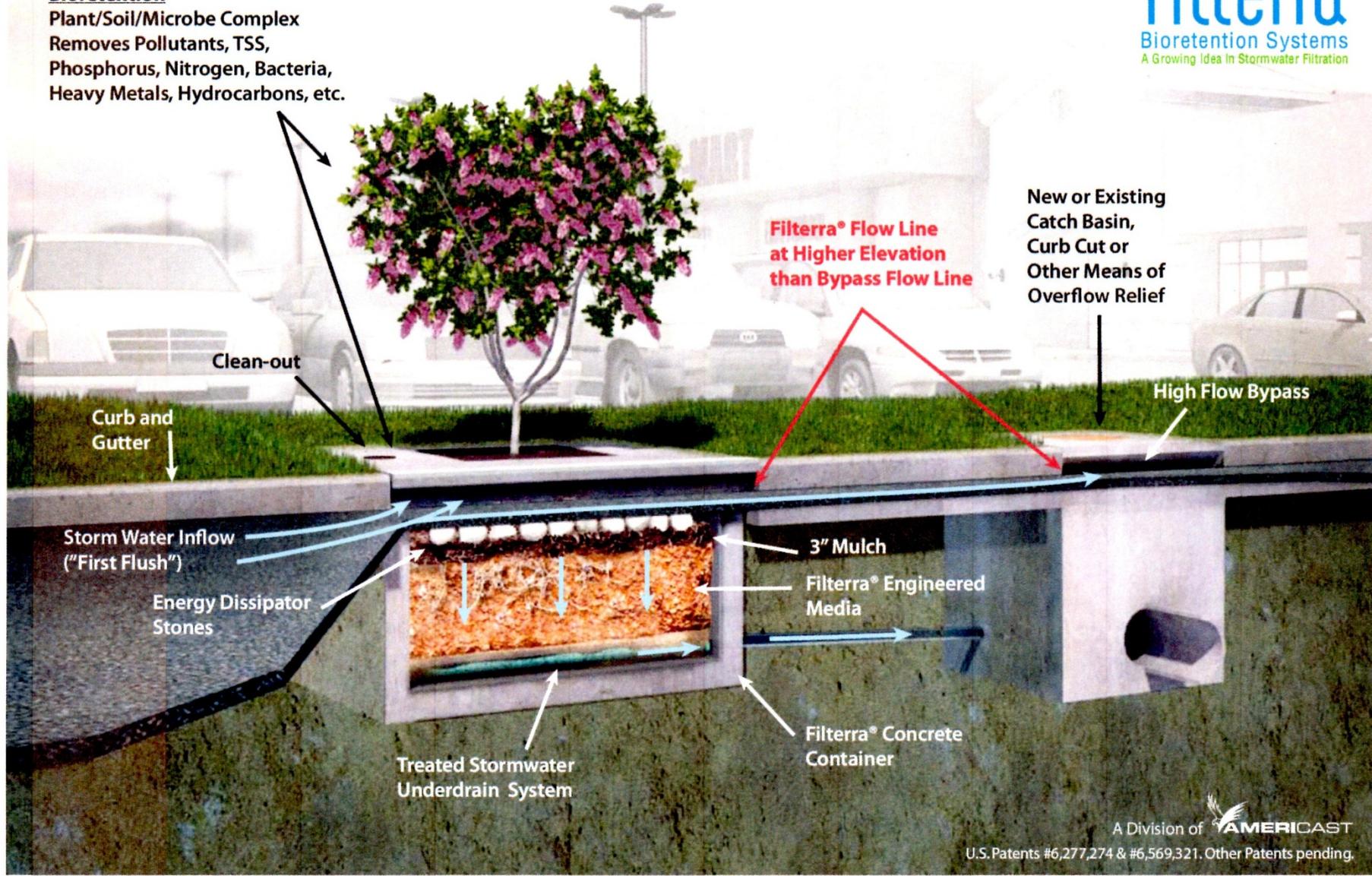
FOREST HILL AVENUE PLAN VIEW

DEPARTMENT OF PUBLIC WORKS
RICHMOND, VIRGINIA

CIP: XXX-XXX-XXX-XXX	DESIGN BY: STAFF	REVIEWED BY:	FIELD NOTES:	SCALE: AS SHOWN	DATE: 1/22/2013	DRAWING FILE NAME: 11080806-01-04-3.dwg	DRAWING NO: 6
	CHECKED BY: STAFF						

Bioretention

Plant/Soil/Microbe Complex
Removes Pollutants, TSS,
Phosphorus, Nitrogen, Bacteria,
Heavy Metals, Hydrocarbons, etc.



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Forest Hill Avenue Improvement Project

QUESTIONS

