Proposed Redesign of Nelly Custis Park

AURORA HIGHLANDS CIVIC ASSOCIATION

NEIGHBORHOOD CONSERVATION PROGRAM

ARLINGTON COUNTY

NOVEMBER 8, 2017

ARLINGTON
VIRGINIA

Purpose

Review proposed redesign of Nelly Custis Park

Decide whether to approve the design to allow project to proceed to the next phase (construction documents)

Project Goals and Budget

Storm water management to correct existing drainage problems

Removal of invasive species

Improve circulation for accessibility and park use

Additional school aged play equipment

New site furnishings

Additional plantings for shade and beautification

Total budget: $798K

Construction budget: $550K plus 10% reserve

Project Timeline

Summer 2017 – Design

November 2017 – Civic Association decision

December 2017 to July 2018 – Drawings, permitting and bid solicitation

Fall 2018 – County Board approval of construction contract

Fall 2018 – Winter/Spring 2019 - Construction

Design Process

Established a Design Working Group (DWG) of 8 neighborhood volunteers

County recommended different parks to visit to look at play equipment, furnishings and other features

Before first meeting, members of the DWG visited many parks in the area

DWG held three meetings – June, August and October

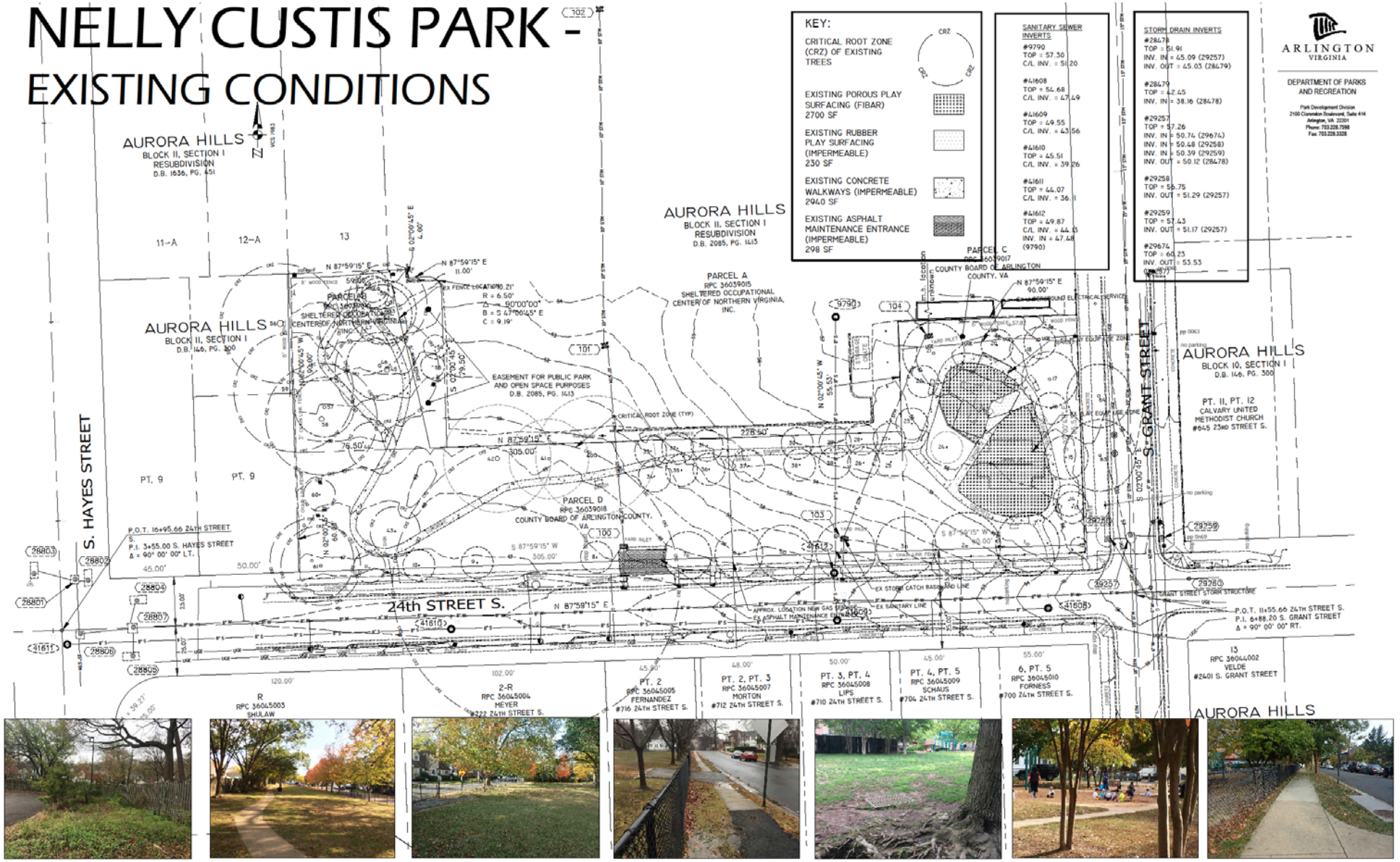
Design Meetings

June – Overall vision, existing conditions and design constraints, current usage, future uses, types of play equipment, possible plantings, budget priorities (nice-to-have vs. must-have)

August – County presented design alternatives, DWG coalesced around one play area alternative and identified choices for rest of park. DWG had several questions and clarifications and requested a 3rd meeting before presenting design to community

October – DWG generally supported design presented, made several decisions on certain furnishings and fixtures, requested more data about efficacy of proposed storm water mitigation measures

NELLY CUSTIS PARK -
EXISTING CONDITIONS



PARK EASEMENT AREA

INTERIOR VIEW EAST

ASPHALT ENTRANCE AND OLD ELM

24TH ST VIEW EAST

EROSION AND CATCH BASIN

PLAYGROUND

S.GRANT STREET VIEW NORTH, STORM DRAIN

Proposed Design

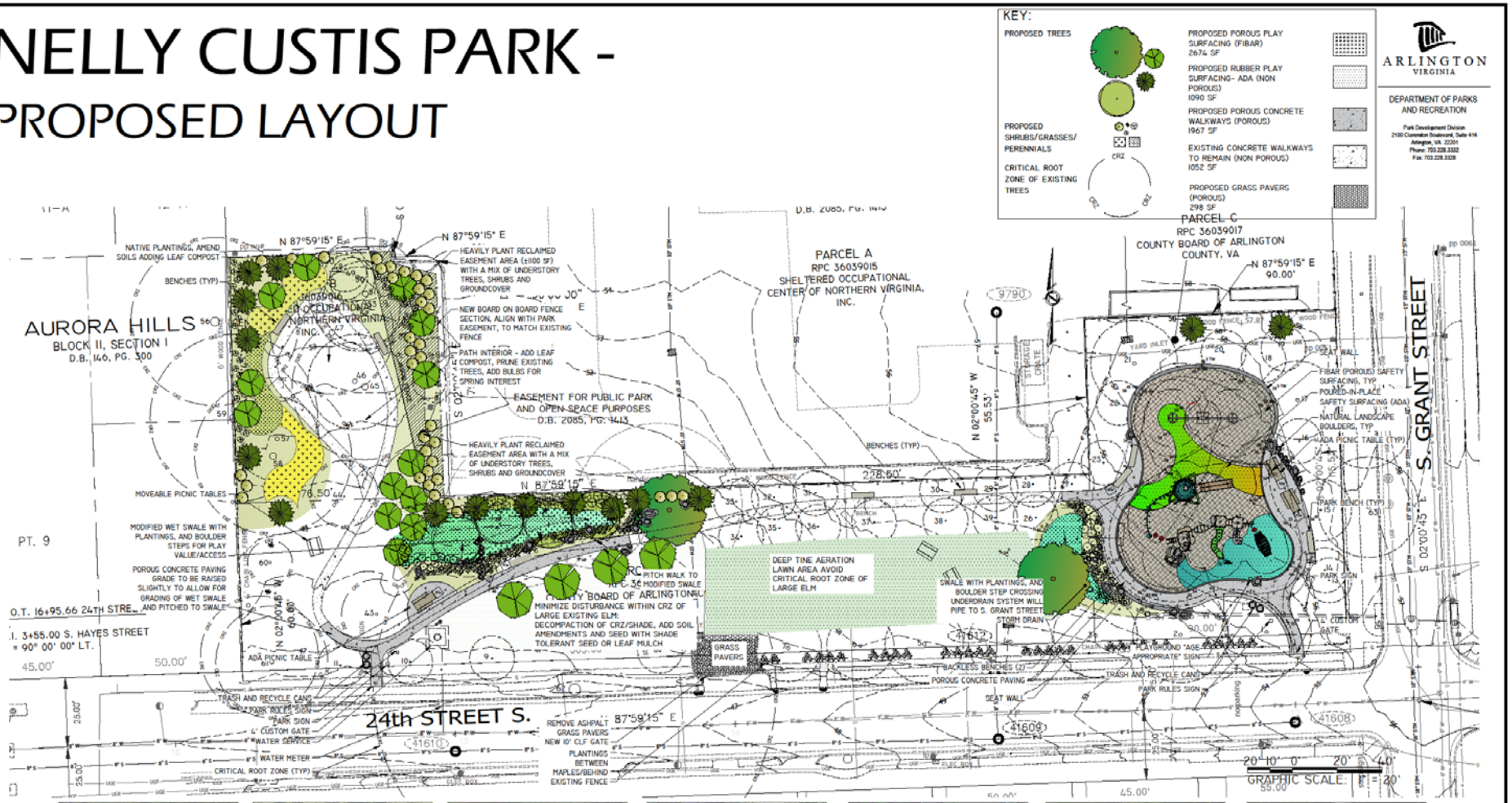
Park loosely divided into three zones:

Play area on the east side of the park

A central open grassy area with plantings to the north along the park border with Linden

A contemplative gathering area on the west side of the park

NELLY CUSTIS PARK -
PROPOSED LAYOUT




PARK BENCH

PARK RULES SIGN


RECYCLE AND TRASH CANS

PARK SIGN


PICNIC TABLE


BOULDERS AND SEAT WALL

AGE APPROPRIATE SIGN

Play Area Renovation

New play equipment meets ADA compliance and playground safety standards

More efficient layout increases useable play area close to 40%

Stormwater management underneath the playground area decreases runoff to 24th Street South

Elementary school playground – ages 5 to 12 – same as existing playground

Diverse playground equipment chosen to accommodate different age ranges and challenge within age demographic

Play equipment selected after DWG members visited and kid-tested play equipment around the region

NELLY CUSTIS PARK

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

KEY:

PROPOSED TREES

PROPOSED SHRUBS/GRASSES/ PERENNIALS

CRITICAL ROOT ZONE OF EXISTING TREES

CRZ

PROPOSED POROUS PLAY SURFACING (FIBAR)
2674 SF

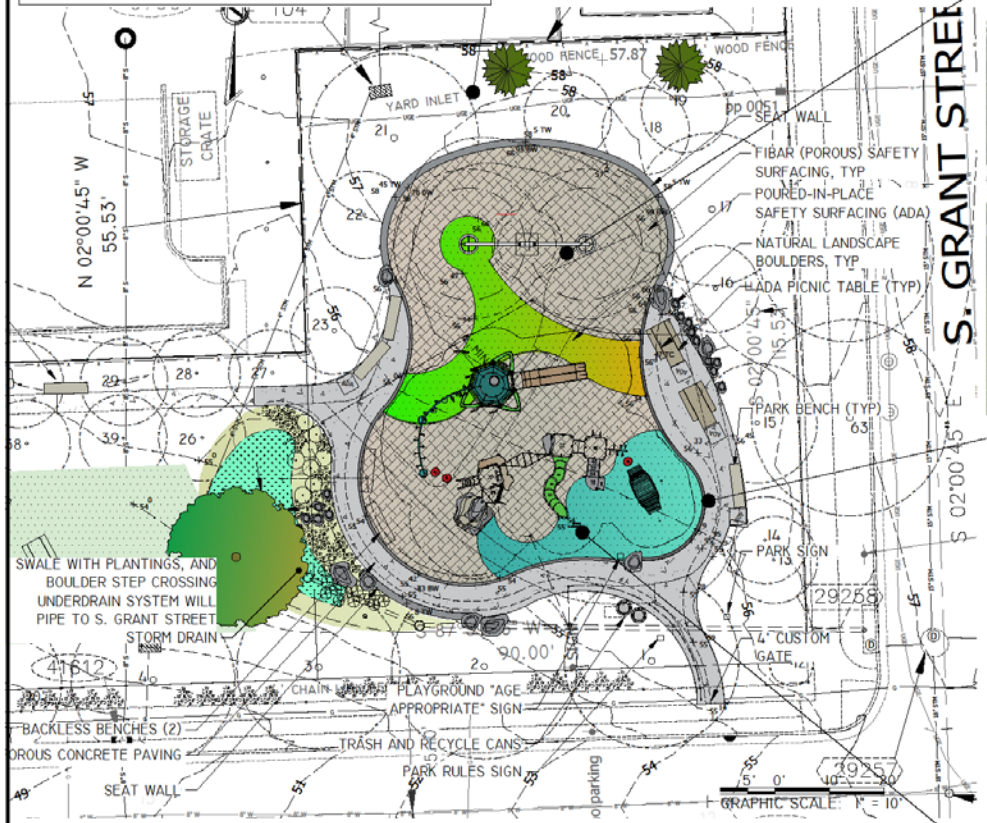
PROPOSED RUBBER PLAY SURFACING- ADA (NON POROUS)
1090 SF

PROPOSED POROUS CONCRETE WALKWAYS (POROUS)
1967 SF

EXISTING CONCRETE WALKWAYS TO REMAIN (NON POROUS)
1052 SF

PROPOSED GRASS PAVERS (POROUS)
298 SF

DYNAMO SWING

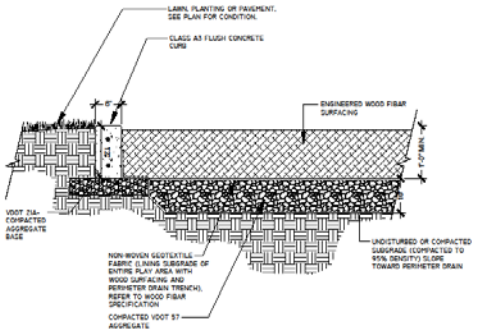


PLAYGROUND AREA ENLARGEMENT

PLAYGROUND VIEW - LAYOUT

PLAYGROUND VIEW SOUTH TO NORTH

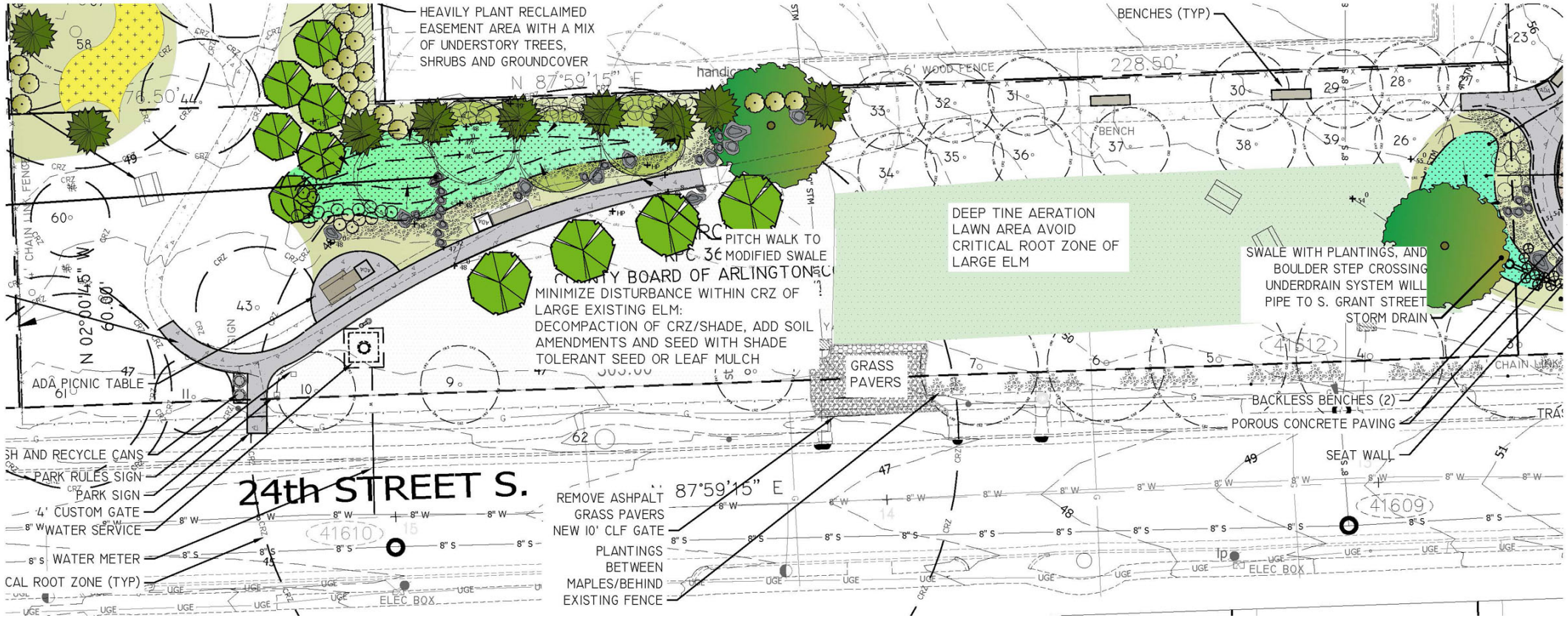
- New playground in area of existing playground
- Play area subsurface treated as a stormwater management facility
- Vegetated swale, seat walls and boulders, serves as separation between the playground/west side of the park. Large oak tree to be planted on west side of swale for shade



POROUS PLAY SURFACING (FIBAR)

Central Grassy Area Design Detail

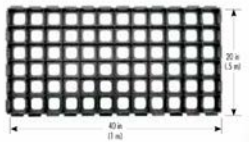
- Outside the critical root zone (CRZ) of the old elm tree, the lawn will undergo a process of “Deep-Tine Aeration”
- Within the CRZ of the elm tree, and around the street trees, the soil aerated with an “Air Spade” which uncompacts the soil, improving root health within that area
- Maintenance gate replaced by smaller gate and existing asphalt replaced by porous grass pavers
- Vegetated swales (ie raingardens) and boulders constructed along edge of the play area and north property border with Linden Resources
- Benches installed along the new porous concrete walk and existing walkways remaining, moveable and ADA accessible picnic tables and additional screening plantings along both fences

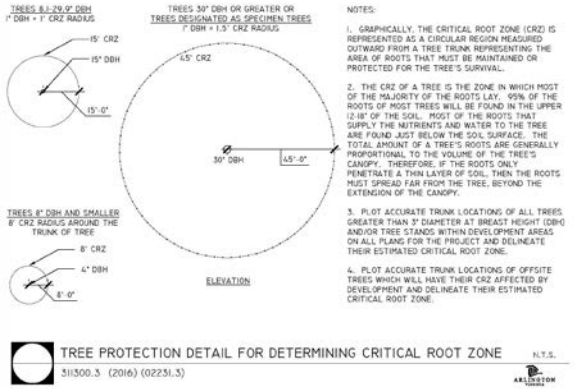


GEOBLOCK® & GEOBLOCK®5150

GRASS PAVERS FOR OCCASIONAL TRAFFIC

The industry's strongest and most proven, high-performance turf protection systems address all vehicle loading and stormwater requirements. The GEOBLOCK® & GEOBLOCK®5150 systems' engineered base material supports loading up to H-20, is highly permeable to maximize stormwater percolation and, with topsoil infill, offers an optimal growing medium for vegetation.





Contemplative Area Design Details

Benches, moveable picnic tables and plantings to allow for small gatherings away from the hustle and bustle of the playground

Increased size by of easement re-aligning fence with the easement border along the Linden parking lot. Wooden fence section going north/south will be replaced by similar board fence

Concrete path loop will be retained

Plantings, including a mix of deciduous and evergreen trees, shrubs and perennials will be planted in the easement and along the fence borders

Re-incorporates 1100 sf of parkland outside of existing board fence

Creates a “contemplative” area planted with mix of native trees, shrubs and perennials.

Includes two years of establishment with watering and mulching.

Design Features

Gates

- Customized gates with tree motifs, modified at west park entrance
- 10 ft. maintenance gate raised 12 to 18” off the ground

Concrete Path

- ADA compliant at park entrances and around playground
- Porous concrete around play area and lower park entrance
- Route of western path adjusted to allow for swale and plantings in center
- Continuous loop in the contemplative area will be retained

Site Furnishings

- Standard park benches, fixed, moveable and ADA compliant picnic tables
- New park signage
- Natural landscape boulders throughout site
- Budget permitting: water line, hose bib and water fountain on west side

NELLY CUSTIS PARK -

ADDITIONAL IMAGES and SUGGESTED PLANTINGS *

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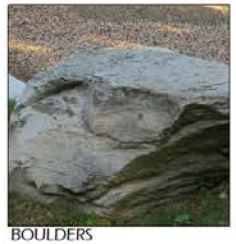
CUSTOM GATE (MODIFIED FOR LOWER PARK AREA)

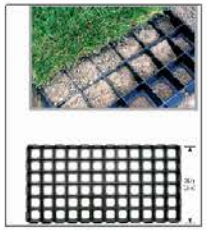

ENGINEERED WOOD FIBER (FIBAR)


POURED-IN-PLACE ADA RUBBER SURFACING


BOULDERS


BOULDER STEPS

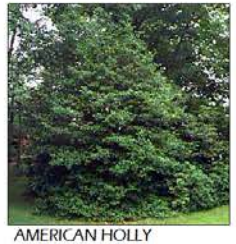

DEEP TINE AERATION


GRASS PAVE - GEOBLOCK

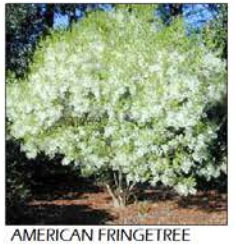

WILLOW OAK


BALD CYPRESS


RIVER BIRCH


AMERICAN HOLLY


AMELANCHIER


AMERICAN FRINGETREE


SWAMP MAGNOLIA

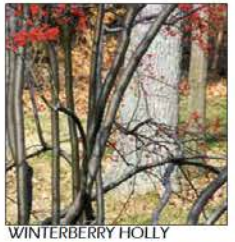

ARONIA


WITCHHAZEL


OAKLEAF HYDRANGEA


VIBURNUM DENTATUM


HIGHBUSH BLUEBERRY


WINTERBERRY HOLLY


ELDERBERRY


BAPTISIA


BUTTERFLY WEED


JOE PYE WEED


IRIS


CAREX PENNSYLVANICA


ERAGROSTIS


RIVER OATS

*additional varieties may be included in final planting design, to be determined

Dog Management

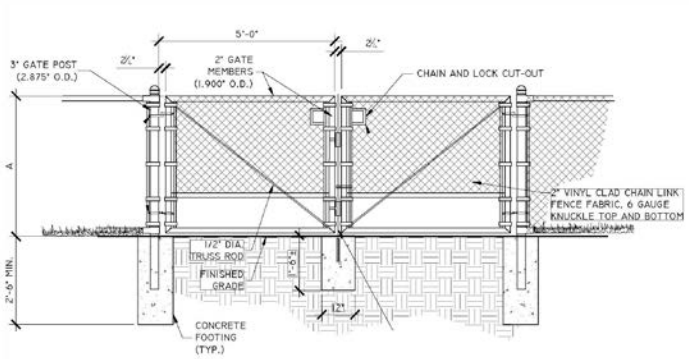
DWG addressed issue proactively due to heavy usage by children and small size of park

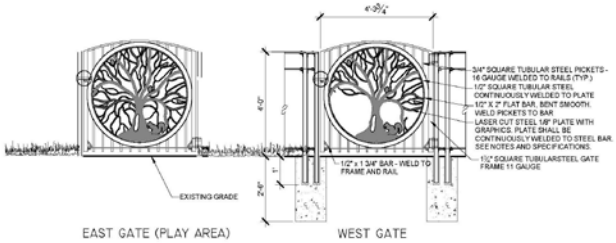
Dogs on leash welcomed in central and western areas of the park, not allowed in the playground

Improved park signage

Swales, plantings and boulders to create separation from play area

Gates will have ”open” features to discourage dogs off leash





Storm Water Management Features

Use of porous concrete around play area

Playground area used as pre-treatment for water quality measures and flows through pipes to the vegetated swale along west side of play area, connected to S. Grant St. drainage outlet

In central grassy area, use of deep tine aeration (with sand fill) and planting of deep-rooted grass

Vegetated swale along portion of back fence with Linden

Soil aeration and addition of soil amendments in critical root zone of large elm tree

Planting of shade-tolerant grass and additional aeration of all street trees to reduce compaction.

Plantings of trees and shrubs throughout the park

Storm Water Management

DWG asked for a storm water report to assess the extent to which the proposed measures will "fix" the existing problem (i.e., ponding and erosion).

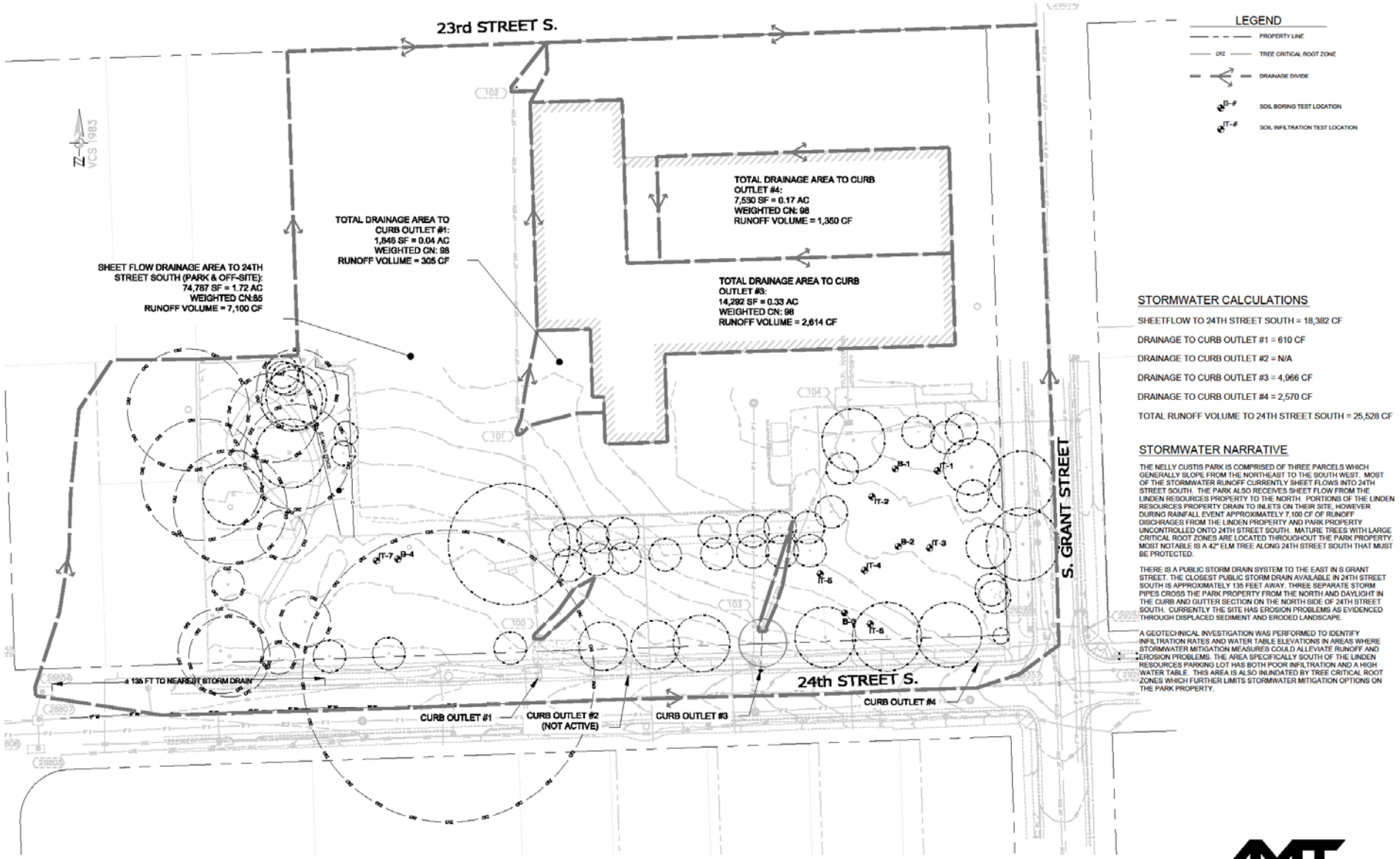
Primary source of storm water problem is run off from the Linden Resources parking lot.

"Fixing" the problem would require changes to the Linden parking lot. Cannot guarantee a "fix" within the confines of the park.

AHCA and County staff have reached out to Linden to initiate discussions about possible actions including applying to the County Stormwise Program for funding to address parking lot issues.

Solutions within the park are limited by the critical root zones of existing trees and lack of a drainage infrastructure on 24th St. South or S. Hayes.

Pipe capacity issue will be corrected at curb opening #3 (on SWM exhibit, next slide)



STORMWATER CALCULATIONS

SHEETFLOW TO 24TH STREET SOUTH = 18,382 CF

DRAINAGE TO CURB OUTLET #1 = 610 CF

DRAINAGE TO CURB OUTLET #2 = N/A

DRAINAGE TO CURB OUTLET #3 = 4,966 CF

DRAINAGE TO CURB OUTLET #4 = 2,570 CF

TOTAL RUNOFF VOLUME TO 24TH STREET SOUTH = 25,528 CF

STORMWATER NARRATIVE

THE NELLY CUSTIS PARK IS COMPRISED OF THREE PARCELS WHICH GENERALLY SLOPE FROM THE NORTHEAST TO THE SOUTH WEST. MOST OF THE STORMWATER RUNOFF CURRENTLY SHEET FLOWS INTO 24TH STREET SOUTH. THE PARK ALSO RECEIVES SHEET FLOW FROM THE LINDEN RESOURCES PROPERTY TO THE NORTH. PORTIONS OF THE LINDEN RESOURCES PROPERTY DRAIN TO INLETS ON THEIR SITE, HOWEVER DURING RAINFALL EVENT APPROXIMATELY 7,100 CF OF RUNOFF DISCHRAGES FROM THE LINDEN PROPERTY AND PARK PROPERTY UNCONTROLLED ONTO 24TH STREET SOUTH. MATURE TREES WITH LARGE CRITICAL ROOT ZONES ARE LOCATED THROUGHOUT THE PARK PROPERTY. MOST NOTABLE IS A 42" ELM TREE ALONG 24TH STREET SOUTH THAT MUST BE PROTECTED.

THERE IS A PUBLIC STORM DRAIN SYSTEM TO THE EAST IN S GRANT STREET. THE CLOSEST PUBLIC STORM DRAIN AVAILABLE IN 24TH STREET SOUTH IS APPROXIMATELY 135 FEET AWAY. THREE SEPARATE STORM PIPES CROSS THE PARK PROPERTY FROM THE NORTH AND DAYLIGHT IN THE CURB AND GUTTER SECTION ON THE NORTH SIDE OF 24TH STREET SOUTH. CURRENTLY THE SITE HAS EROSION PROBLEMS AS EVIDENCED THROUGH DISPLACED SEDIMENT AND ERODED LANDSCAPE.

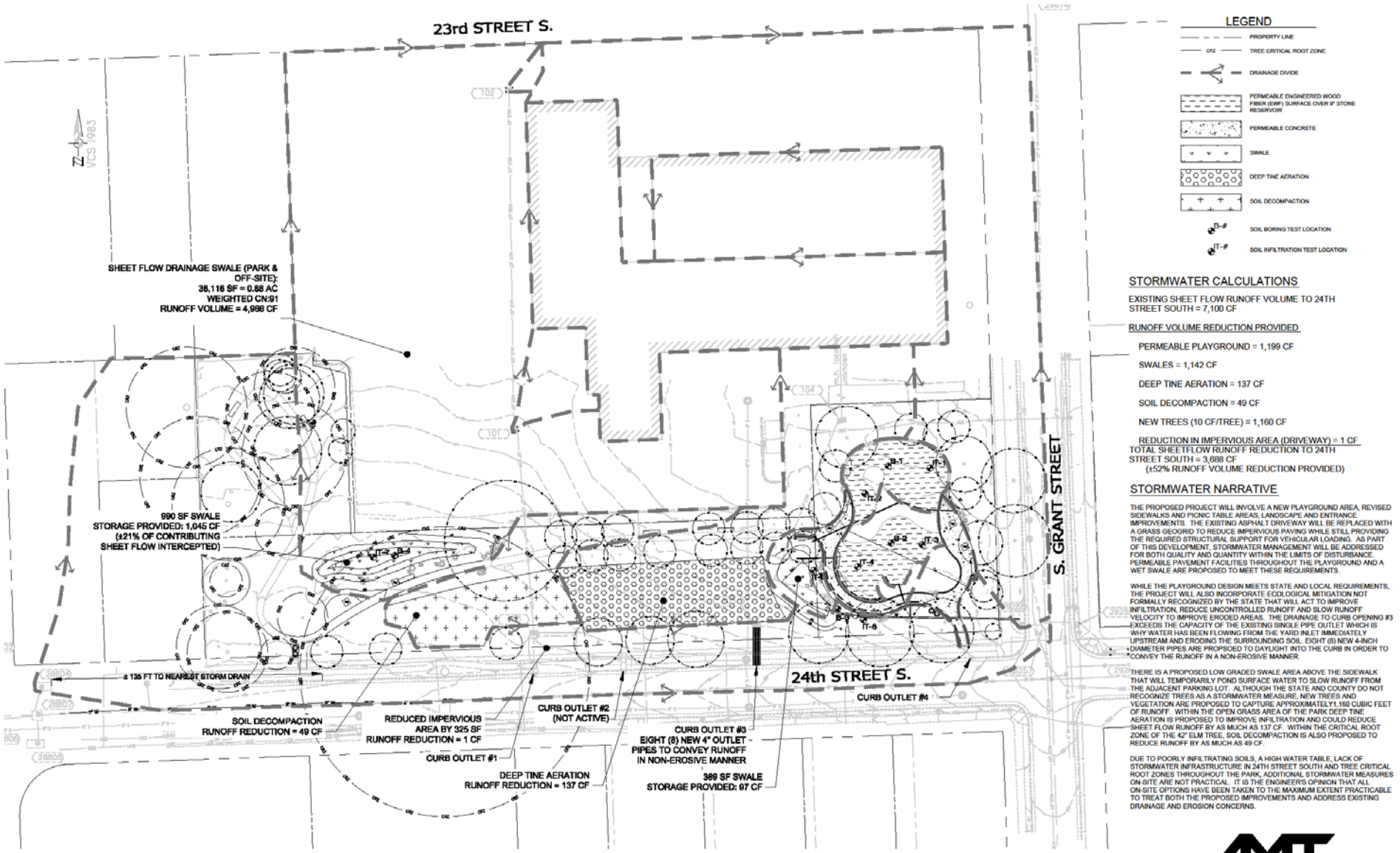
A GEOTECHNICAL INVESTIGATION WAS PERFORMED TO IDENTIFY INFILTRATION RATES AND WATER TABLE ELEVATIONS IN AREAS WHERE STORMWATER MITIGATION MEASURES COULD ALLEVIATE RUNOFF AND EROSION PROBLEMS. THE AREA SPECIFICALLY SOUTH OF THE LINDEN RESOURCES PARKING LOT HAS BOTH POOR INFILTRATION AND A HIGH WATER TABLE. THIS AREA IS ALSO INUNDATED BY TREE CRITICAL ROOT ZONES WHICH FURTHER LIMITS STORMWATER MITIGATION OPTIONS ON THE PARK PROPERTY.

NELLY CUSTIS PARK DRAINAGE STUDY - PRE-DEVELOPMENT

ARLINGTON COUNTY, VIRGINIA
NOVEMBER 2017

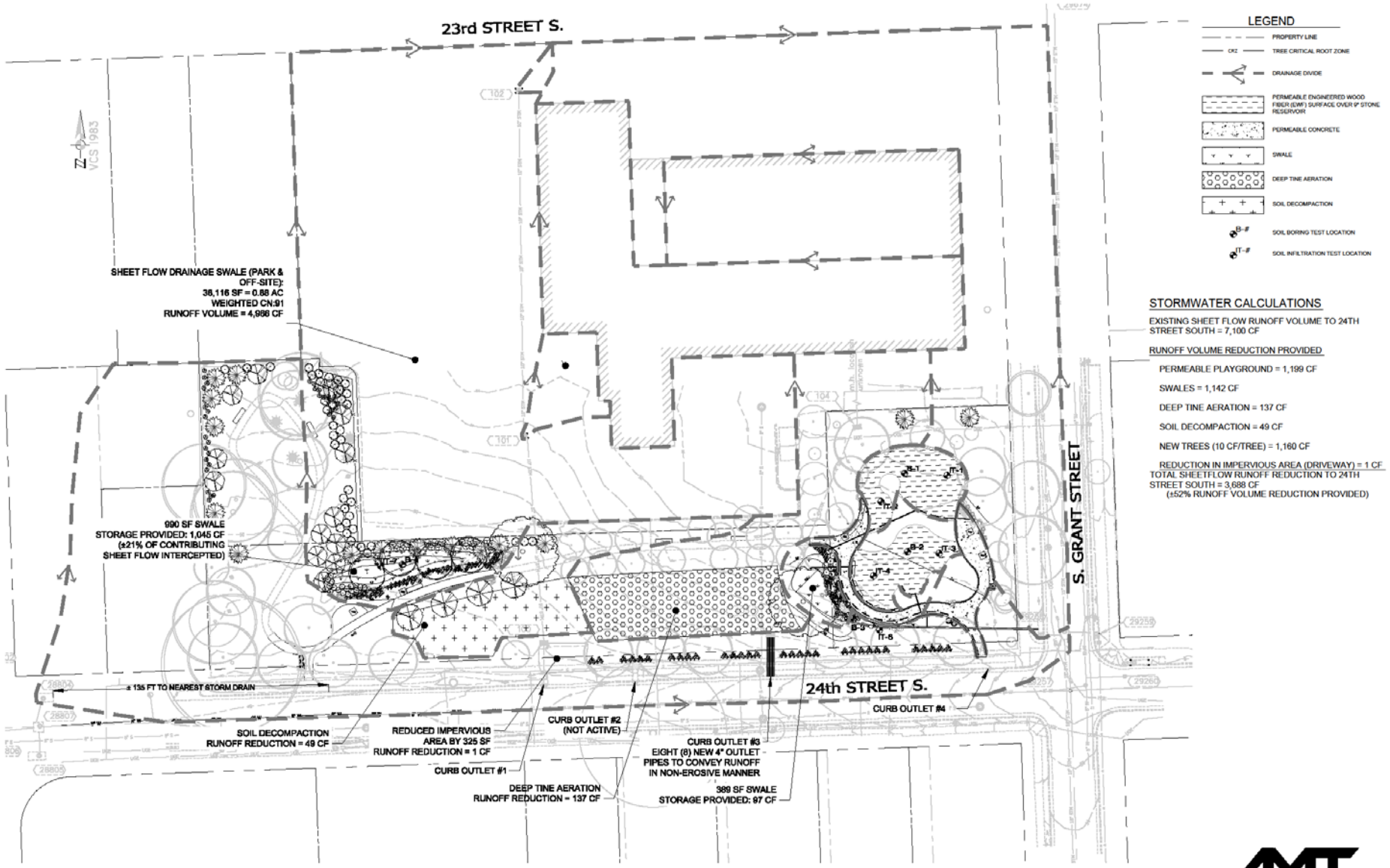
0 20 40
SCALE: 1" = 20'

A. Morton Thomas and Associates, Inc.
14555 Avion Parkway, Suite 150, Chantilly, VA 20151
Tel: 703.817.1373 www.amtengineering.com



NELLY CUSTIS PARK DRAINAGE STUDY - POST-DEVELOPMENT

ARLINGTON COUNTY, VIRGINIA
NOVEMBER 2017



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Conclusion

Proposed design meets the community's desire to expand useable play area and age-diversify the play equipment.

Proposed design maintains and even expands the amount of open space and makes it more user friendly by adding site furnishings and plantings.

Proposed design includes significant measures to mitigate storm water problems. AHCA has initiated steps to attempt to address external causes.