

# ELMAR ST SE/SW ENGINEERING REPORT

## ROBINSON TRUST SIDEWALK PROGRAM

July 28, 2022

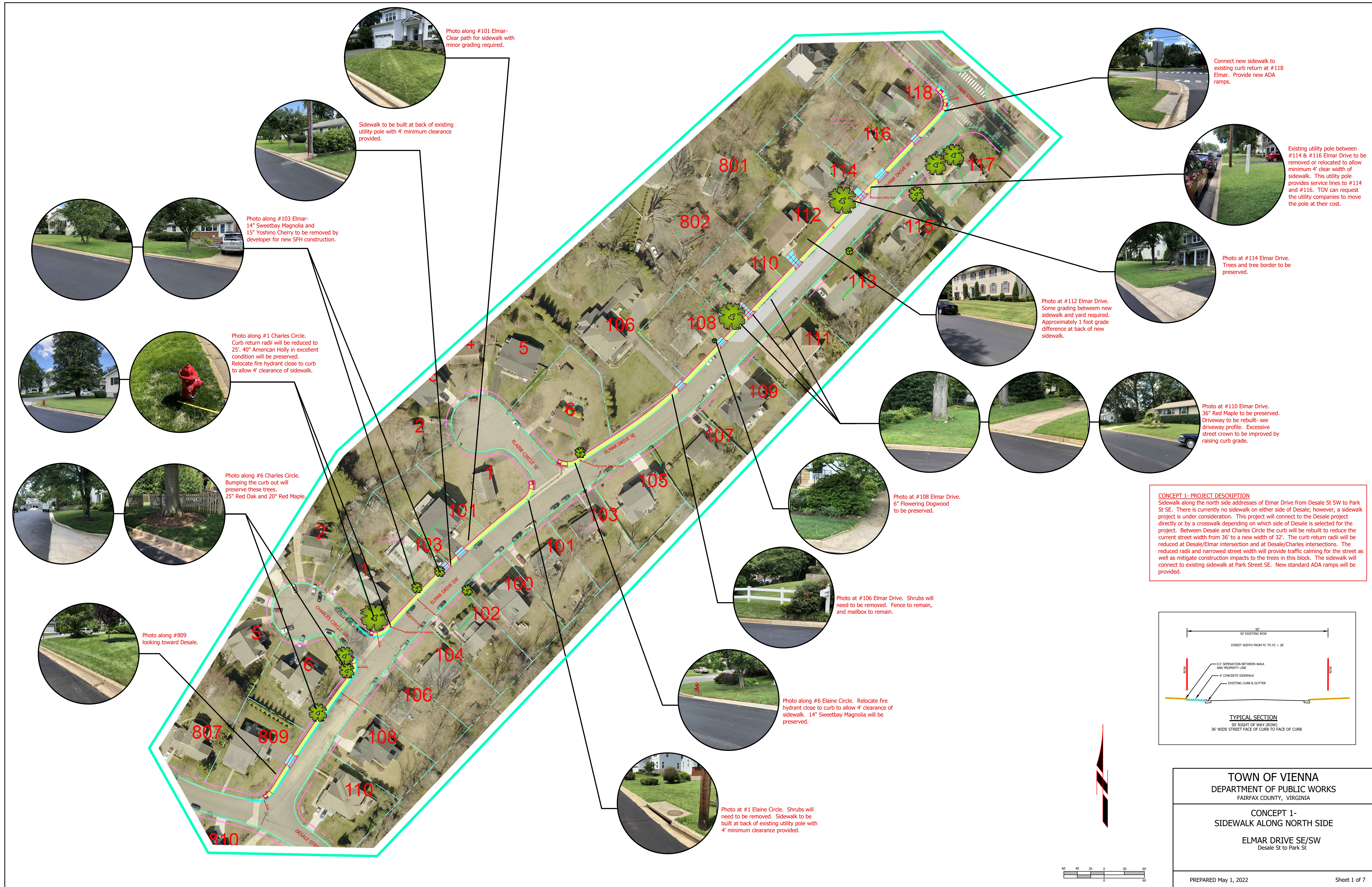
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The new sidewalk will connect to existing sidewalk at Park Street. The curb return radii will be reduced to 25' and a current standard ADA ramp will be provided.



The sidewalk against the curb will be maintained across the frontage of #117 to preserve the existing trees (2- 30" Crepe Myrtles).



At the location of the 2 utility pole between #115 and #117 the sidewalk would be built adjacent to existing curb without utility strip. The 20" Black Gum Tree will be preserved.



At #113 the shrubs on either side of the driveway and the 10" Flowering Dogwood are in the R/W and will need to be removed for the new sidewalk.



At the location of the utility pole between #111 and #113 the sidewalk would be built adjacent to existing curb without utility strip.



At the location of the utility pole and guy anchor along the frontage of #109 the sidewalk would be built adjacent to existing curb without utility strip.



At #107 the shrubs in the TOV R/W will need to be removed to construct the new sidewalk.



At the location of the utility pole between #103 and #105 the sidewalk would be built adjacent to existing curb without utility strip.

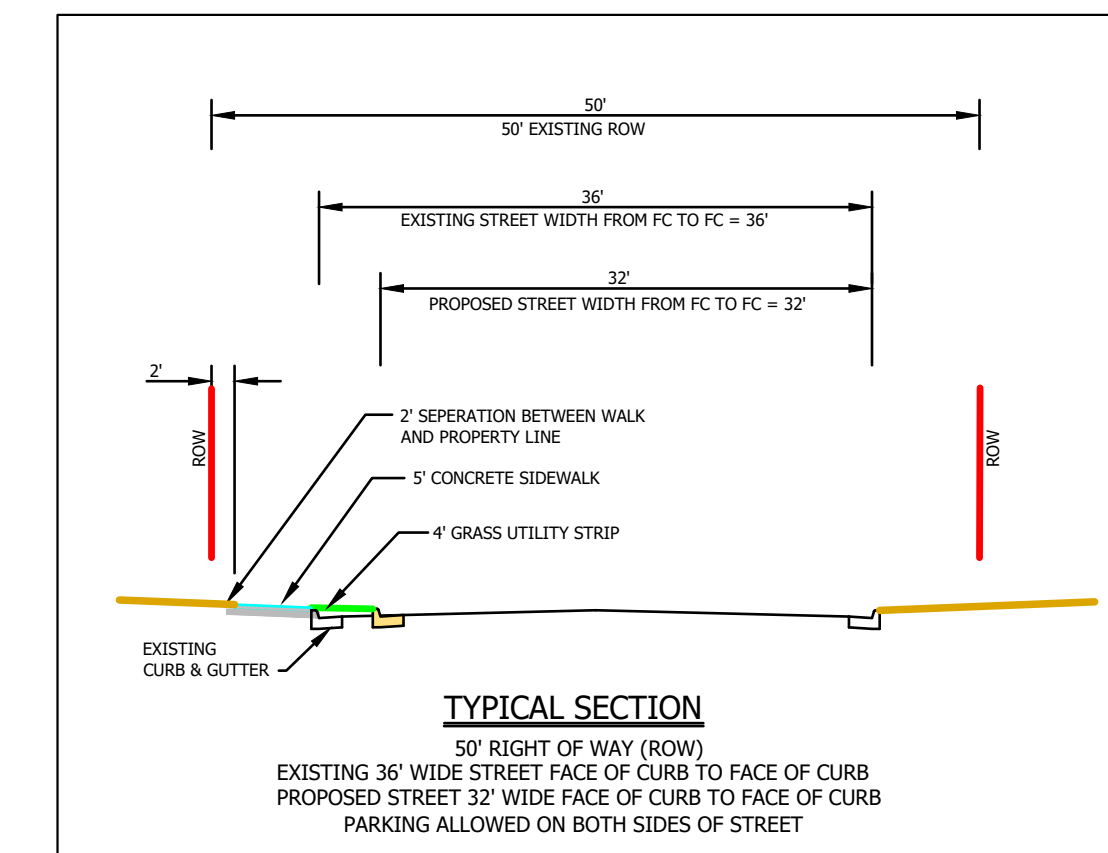


The new sidewalk will end at the Desale intersection with a new ADA ramp and smaller curb return radii of 25' provided.



At the location of the utility pole between #102 and #100 the sidewalk would be built adjacent to existing curb without utility strip. The branches of the Leyland Cypress will need to be trimmed or the tree, or the tree can be removed.

**CONCEPT 2- PROJECT DESCRIPTION**  
Sidewalk along the south side of Elmar Drive from Desale St SW to Park St SE. There is currently no sidewalk on either side of Desale; however, a sidewalk project is under consideration. This project will connect to the Desale project directly or by a crosswalk depending on which side of Desale is selected for the project. The street width will be reduced from 36' to 32' for the length of the project. This will allow the new sidewalk to route in front of the utility poles. The curb return radii at the Desale intersection and at the Park Street intersection will be reduced. The narrower street width and reduced curb return radii will provide traffic calming to the street and reduce project impacts on existing properties and trees as there will be a 2' separation from the back of walk to the R/W. The sidewalk will connect to existing sidewalk at Park Street SE. New standard ADA ramps will be provided.



**TOWN OF VIENNA**  
DEPARTMENT OF PUBLIC WORKS  
FAIRFAX COUNTY, VIRGINIA

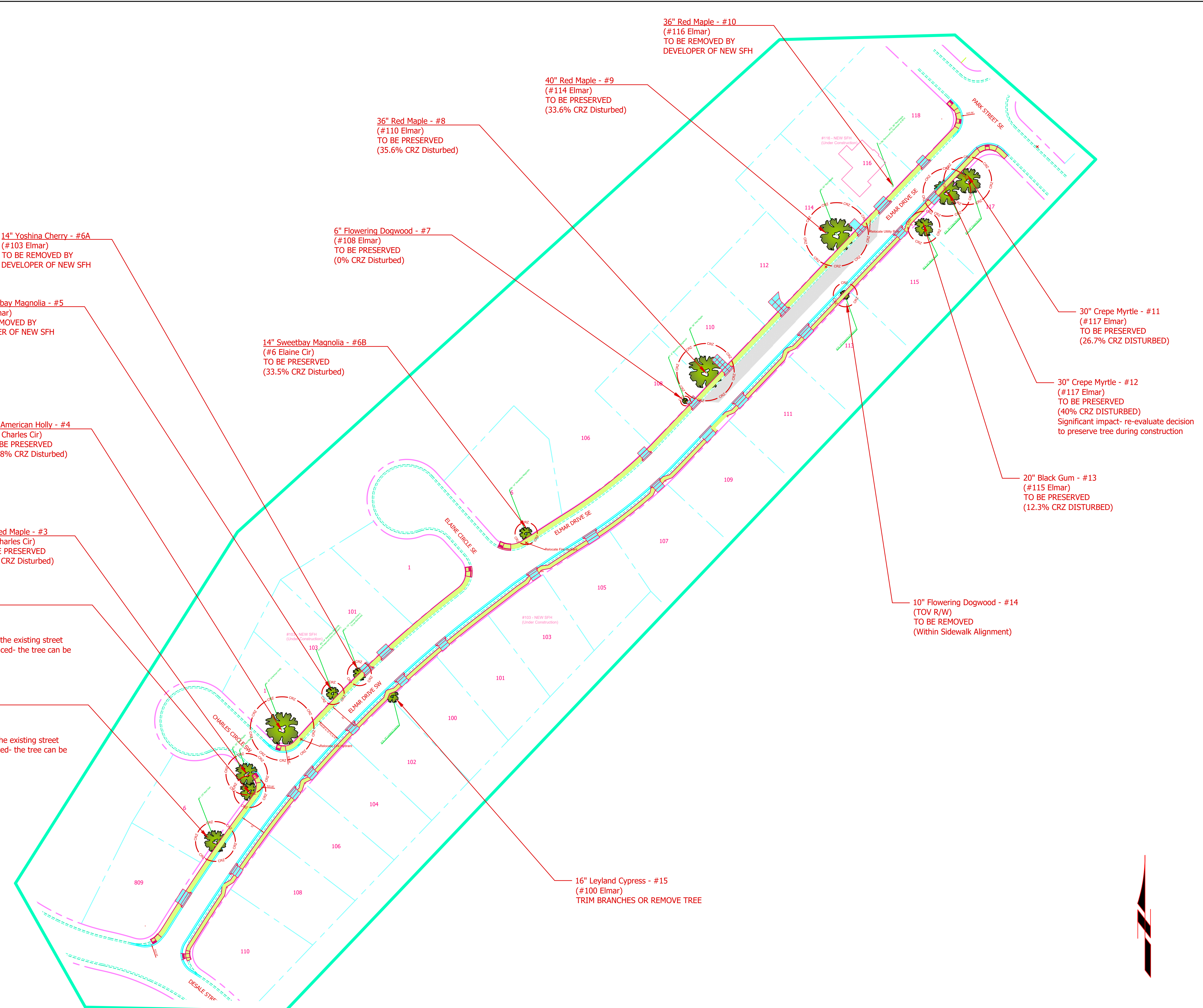
**CONCEPT 2-  
SIDEWALK WITH UTILITY STRIP ALONG SOUTH SIDE  
AND REBUILD STREET TO 32' FC TO FC**

**ELMAR DRIVE SE/SW**  
Desale St to Park St

PREPARED May 28, 2022







14" Yoshina Cherry - #6A  
(#103 Elmar)  
TO BE REMOVED BY  
DEVELOPER OF NEW SFH

15" Sweetbay Magnolia - #5  
(#103 Elmar)  
TO BE REMOVED BY  
DEVELOPER OF NEW SFH

40" American Holly - #4  
(#1 Charles Cir)  
TO BE PRESERVED  
(29.8% CRZ Disturbed)

26" Red Maple - #3  
(#6 Charles Cir)  
TO BE PRESERVED  
(18% CRZ Disturbed)

20" Red Maple - #2  
(#6 Charles Cir)  
TO BE PRESERVED  
(36.7% CRZ Disturbed)  
Since most of the grading will be within the existing street  
pavement the impact on the tree is reduced- the tree can be  
preserved.

25" Red Oak - #1  
(#6/TOV- Joint Owned Tree)  
TO BE PRESERVED  
(38.7% CRZ Disturbed)  
Since most of the grading will be within the existing street  
pavement the impact on the tree is reduced- the tree can be  
preserved.

36" Red Maple - #8  
(#110 Elmar)  
TO BE PRESERVED  
(35.6% CRZ Disturbed)

6" Flowering Dogwood - #7  
(#108 Elmar)  
TO BE PRESERVED  
(0% CRZ Disturbed)

14" Sweetbay Magnolia - #6B  
(#6 Elaine Cir)  
TO BE PRESERVED  
(33.5% CRZ Disturbed)

40" Red Maple - #9  
(#114 Elmar)  
TO BE PRESERVED  
(33.6% CRZ Disturbed)

36" Red Maple - #10  
(#116 Elmar)  
TO BE REMOVED BY  
DEVELOPER OF NEW SFH

30" Crepe Myrtle - #11  
(#117 Elmar)  
TO BE PRESERVED  
(26.7% CRZ DISTURBED)

30" Crepe Myrtle - #12  
(#117 Elmar)  
TO BE PRESERVED  
(40% CRZ DISTURBED)  
Significant impact- re-evaluate decision  
to preserve tree during construction

20" Black Gum - #13  
(#115 Elmar)  
TO BE PRESERVED  
(12.3% CRZ DISTURBED)

10" Flowering Dogwood - #14  
(TOV R/W)  
TO BE REMOVED  
(Within Sidewalk Alignment)

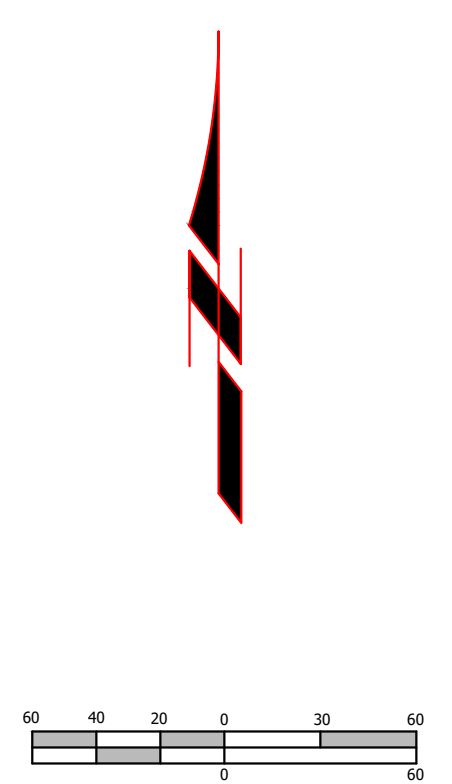
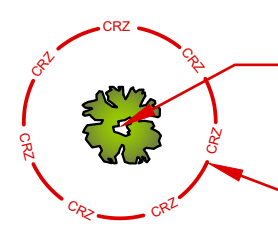
16" Leyland Cypress - #15  
(#100 Elmar)  
TRIM BRANCHES OR REMOVE TREE

**CONCEPT 1**  
DPW believes that all trees can be preserved by construction of Concept 1. Disturbance to the tree roots of the trees between Desale and Charles Circle will be reduced by the reconstruction of the curb and sidewalk mostly within the existing street pavement. For the trees along the remaining length of the project the grading behind the existing curb extends by approximately 8 feet from the curb.

**CONCEPT 2**  
Construction of Concept 2 will result in the removal of the 10" Flowering Dogwood which is within the alignment of the new sidewalk. Additionally the 16" Leyland Cypress along #100 Elmar will need to be trimmed and possibly removed.

**CRITICAL ROOT ZONE (CRZ)**  
This drawing plots the critical root zone (CRZ) of existing trees. 1" of tree diameter dbh (diameter breast height) equals 1' radius of CRZ.

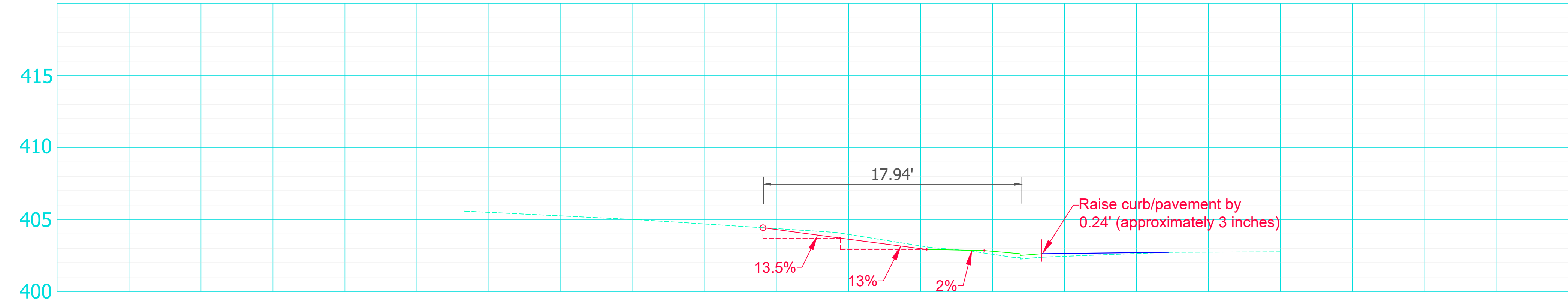
(TOV R/W) indicates that the tree is on Town of Vienna right of way based upon field measurement.



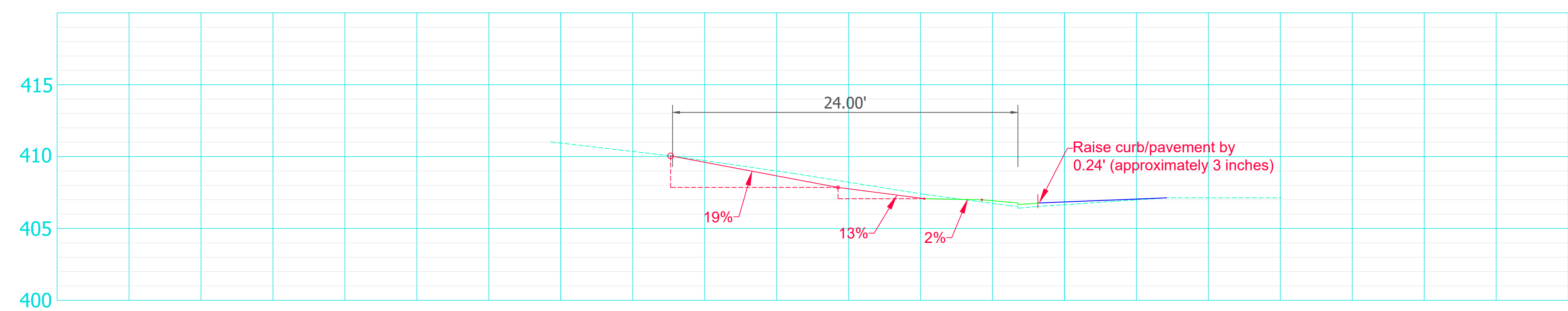
<b>TOWN OF VIENNA</b> DEPARTMENT OF PUBLIC WORKS FAIRFAX COUNTY, VIRGINIA
<b>CRITICAL ROOT ZONE (CRZ)</b> CONCEPTS 1 AND 2
<b>ELMAR DRIVE SE/SW</b> Desale Street to Park Street
PREPARED JULY 27, 2022



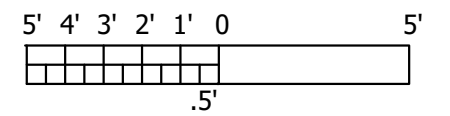
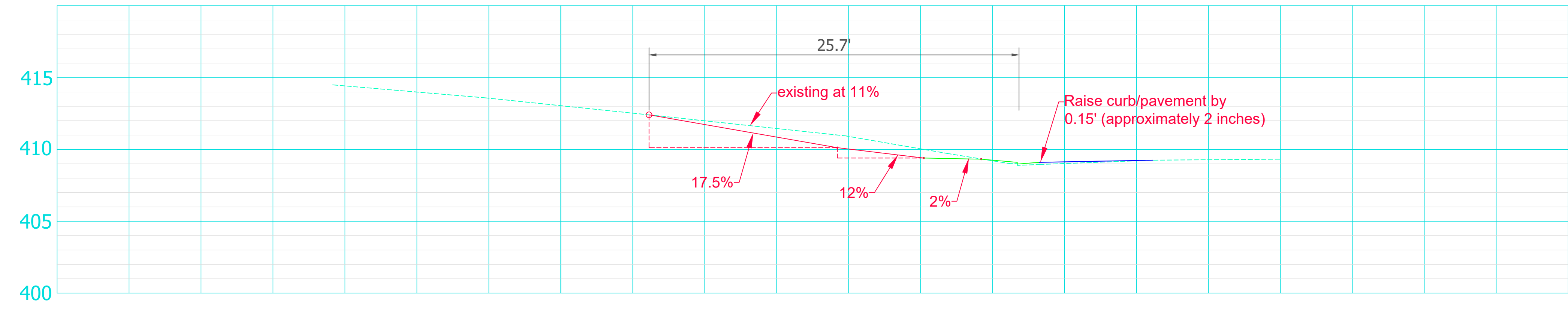
DRIVEWAY PROFILE #114 Elmar Drive SE



DRIVEWAY PROFILE #112 ELMAR DRIVE SE



DRIVEWAY PROFILE #110 Elmar Drive SE



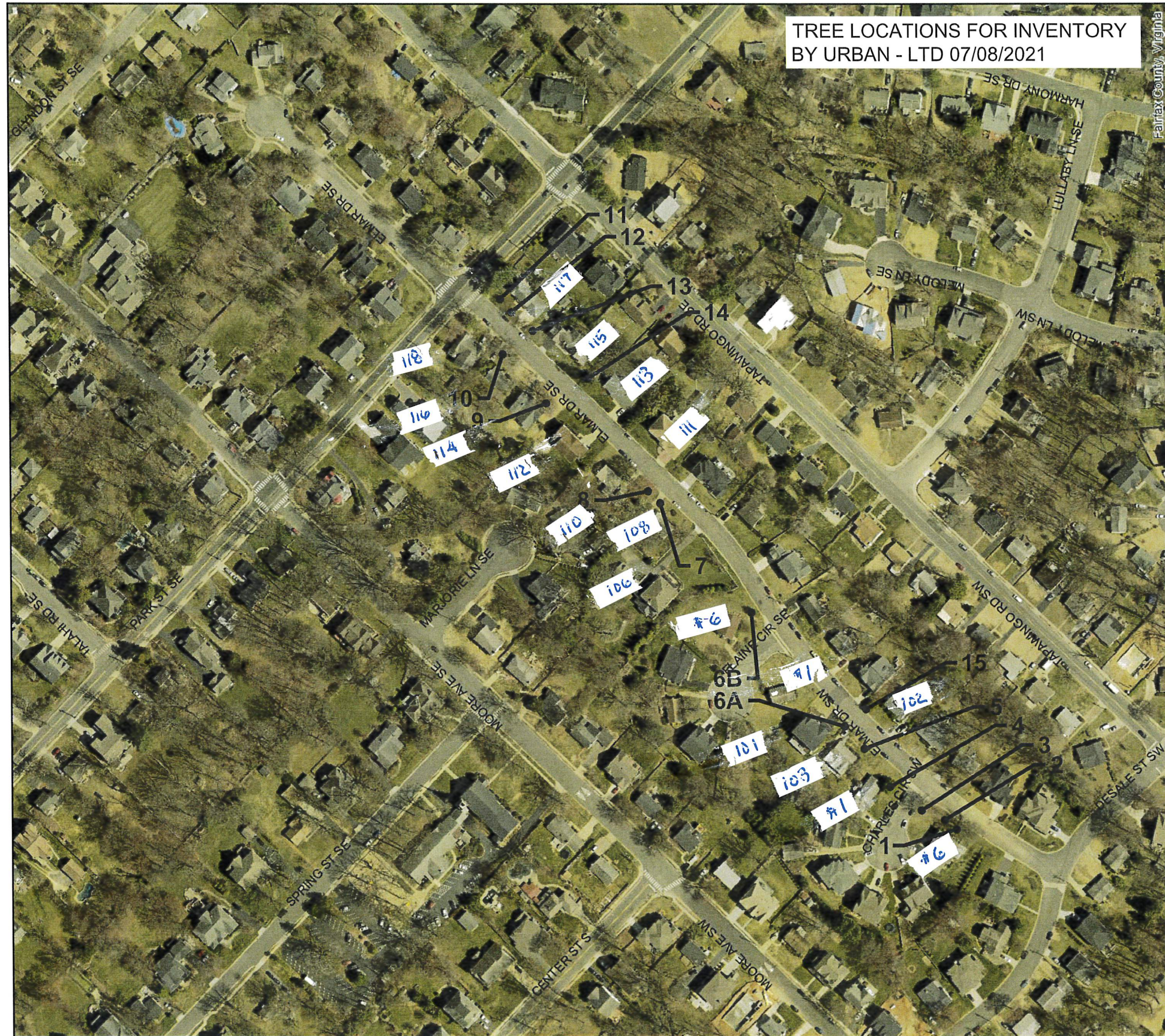


Analysis of Concept 1- Elmar Dr SE/SW

Analysis of Concept 2- Elmar Dr SE/SW

DESCRIPTION	Sidewalk along the north side addresses of Elmar Drive from Desale St SW to Park St SE. There is currently no sidewalk on either side of Desale; however, a sidewalk project is under consideration. This project will connect to the Desale project directly or by a crosswalk depending on which side of Desale is selected for the project. Between Desale and Charles Circle the curb will be rebuilt to reduce the current street width from 36' to a new width of 32'. The curb return radii will be reduced at Desale/Elmar intersection and at Desale/Charles intersections. The reduced radii and narrowed street width will provide traffic calming for the street as well as mitigate construction impacts to the trees in this block. The sidewalk will connect to existing sidewalk at Park Street SE. New standard ADA ramps will be provided.	Sidewalk along the south side of Elmar Drive from Desale St SW to Park St SE. There is currently no sidewalk on either side of Desale; however, a sidewalk project is under consideration. This project will connect to the Desale project directly or by a crosswalk depending on which side of Desale is selected for the project. The street width will be reduced from 36' to 32' for the length of the project. This will allow the new sidewalk to route in front of the utility poles. The curb return radii at the Desale intersection and at the Park Street intersection will be reduced. The narrower street width and reduced curb return radii will provide traffic calming to the street and reduce project impacts on existing properties and trees as there will be a 2' separation from the back of walk to the R/W. The sidewalk will connect to existing sidewalk at Park Street SE. New standard ADA ramps will be provided.
SIDEWALK SUPPORT- RESPONSE TO QUESTIONNAIRE	Based upon the Questionnaire from DPW to homeowners that was sent in Fall of 2020 the north side of the street had more supporters of sidewalk. The north side addresses responded 6 in favor and 2 not in favor. The south side addresses responded 5 in favor and 5 not in favor.	Based upon the Questionnaire from DPW to homeowners that was sent in Fall of 2020 the north side of the street had more supporters of sidewalk. The north side addresses responded 6 in favor and 2 not in favor. The south side addresses responded 5 in favor and 5 not in favor.
TREE IMPACTS	DPW believes that all trees can be preserved by construction of Concept 1. Disturbance to the tree roots of the trees between Desale and Charles Circle will be reduced by the reconstruction of the curb and sidewalk mostly within the existing street pavement. For the trees along the remaining length of the project the grading behind the existing curb extends by approximately 8 feet from the curb.	Construction of Concept 2 will result in the removal of the 10" Flowering Dogwood which is within the alignment of the new sidewalk. Additionally the 16" Leyland Cypress along #100 Elmar will need to be trimmed and possibly removed.
IMPACTS ON VEGETATION (OTHER THAN TREES)	There are other plants and vegetation that may be affected by the construction. This analysis focuses more on the potential construction impacts to larger trees. If this concept is pursued replacement vegetation and possibly transplantation of plants/shrubs will be considered.	There are other plants and vegetation that may be affected by the construction. This analysis focuses more on the potential construction impacts to larger trees. If this concept is pursued replacement vegetation and possibly transplantation of plants/shrubs will be considered.
GRADING IMPACTS	The area where sidewalk would be built is relatively flat with the grade difference between the existing curb and the back of the R/W being less than 1 foot. There are a few sections where the more grading is required. The grade difference between back of walk and the R/W is about 1.5' near the driveway of #106, and along the frontage of #114 to #112. The area along the frontage of #110 to #114 has an excessively steep pavement crown. These residents may have issues with vehicles "bottoming-out" as the enter and exit the driveways. This concept will reduce the existing crown steepness by raising the curb up to 3 inches. By reducing the grade differential between the street, gutter, and drive apron the vehicles will be less likely to "bottom-out". A cross section of the driveways at #110, #112, and #114 is included in this report. The construction limits for all properties will be determined during later stages of design if this concept is pursued.	As the curb will be rebuilt inside of the existing street the grading impacts to the R/W will be minimal. The area where sidewalk would be built is relatively flat with the grade difference between the existing curb and the back of the R/W being less than 1 foot. The construction limits for all properties will be determined during later stages of design if this concept is pursued.
CONSTRUCTABILITY ISSUES	There does not appear to be significant constructability issues with this concept. The fire hydrants at #1 Charles Circle, and at #6 Elaine Circle will need to be relocated. A few sections of fence at #106 may be required to be removed and replaced to the new grade. Existing water meters will be relocated as necessary.	There does not appear to be constructability issues with this concept. There are eight utility pole locations where the sidewalk will have to bend around the pole to provide the required ADA clearance. In all areas the sidewalk is wide enough to comply with the ADA recommended minimum width of 4 feet. The meandering of the sidewalk is not ideal but does comply with ADA standards. Existing water meters will be relocated to the utility strip as necessary.
COST	Concept 1 is less costly than Concept 2 as the existing curb of Concept 2 will be removed and replaced. The cost of Concept 1 should be comparable to other Robinson Sidewalk Projects	Concept 2 is more costly than Concept 1 as the existing curb of Concept 2 will be removed and replaced.
CONNECTIVITY	Both concepts are similar for connectivity as they both connect to existing sidewalk on Park Street SE and will connect to the future sidewalk on Desale (directly or by crosswalk).	Both concepts are similar for connectivity as they both connect to existing sidewalk on Park Street SE and will connect to the future sidewalk on Desale (directly or by crosswalk).
RECOMMENDATION	<b><i>DPW recommends Concept 1. Concept 1 will be less costly, and provides a straighter alignment of the sidewalk. Concept 2 requires the sidewalk alignment to bend around the 8 utility poles. Also based on the questionnaire from the fall of 2020 there was more support for sidewalk for the north side (corresponding to the Concept 1 side).</i></b>	







Elmar Dr. Vienna, VA							Tree Inventory and Condition Analysis Completed: 07/08/2021 Kevin J. Tankersley, ISA Certified Arborist #MA-5871A			
TREE INVENTORY & CONDITION ANALYSIS										
TREE NO.	SPECIES		SIZE	DRIP-LINE	CRITICAL ROOT ZONE	STRUCTURAL ROOT ZONE	CONDITION	CONDITION RATING	STATUS	COMMENTS
	Botanical Name	Common Name	DBH (in)	R (ft.)	R (ft.)	R (ft.)		%	(Remove or Preserve)	
1	<i>Quercus rubra</i>	Red Oak	25"		25'	13'	Good	68.75		Co-dominant; trunks grown together higher up; will develop significant included bark.
2	<i>Acer rubrum</i>	Red Maple	20"		20'	10'	Good	68.75		Co-dominant; would have to be removed for walk
3	<i>Acer rubrum</i>	Red Maple	26"		26'	13'	Good	68.75		Co-dominant; would have to be removed for walk
4	<i>Ilex opaca</i>	American Holly	40"		40'	20'	Excellent	84.38		Multi-trunk; girdling roots; probably far enough back
5	<i>Magnolia virginiana</i>	Sweetbay Magnolia	14"		14'	7'	Good	75.00		Multi-trunk; low branching makes it too close for walk at nine feet from curb.
6A	<i>Prunus x yedoensis</i>	Yoshino Cherry	15"		15'	8'	Fair	50.00		Stress growth; would have to be removed.
6B	<i>Magnolia virginiana</i>	Sweetbay Magnolia	14"		14'	7'	Good	78.13		Co-dominant
7	<i>Cornus florida</i>	Flowering Dogwood	6"		6'	3'	Fair	59.38		Potential impacts from driveway reconstruction
8	<i>Acer rubrum</i>	Red Maple	36"		36'	18'	Fair	59.38		Broken off scaffold branches; Some decay
9	<i>Acer rubrum</i>	Red Maple	40"		40'	20'	Fair	56.25		Hollow; decay; dieback; stress growth; Potential construction impacts
10	<i>Acer rubrum</i>	Red Maple	36"		36'	18'	Good	62.50		Co-dominant; close to curb, work would affect structural roots
11	<i>Lagerstroemia indica</i>	Crapemyrtle	30"		30'	15'	Good	75.00		Multi-stem
12	<i>Lagerstroemia indica</i>	Crapemyrtle	30"		30'	15'	Excellent	84.38		Multi-stem
13	<i>Nyssa sylvatica</i>	Black Gum	20"		20'	10'	Excellent	81.25		Severely pruned for power lines pole; Potential construction impacts
14	<i>Cornus florida</i>	Flowering Dogwood	10"		10'	5'	Poor	25.00		
15	<i>X Cupressocyparis leylandii</i>	Leyland Cypress	16"		16'	8'	Good	75.00		Very close and critical root zone will be affected. Potential to expose dead interior branches of adjacent tree(s) if removed

Note: Tree sizes are by visual estimate as most trees are located on private property and were not measured; Tree locations are approximate and not surveyed.