

Stantec Consulting Services Inc. 150 Riverside Parkway, Suite 301 Fredericksburg, Virginia 22406

January 8, 2019 File: 203401138

Attention: Stuart Tyler Parsons Transportation Group, Inc. 100 M Street SE, Suite 1200 Washington, D.C. 20003-3520

Dear Mr. Tyler,

Reference: Delineation of Waters of the U.S. (WOUS) Environmental Documentation for Route 28 Corridor, Prince William County, City of Manassas, City of Manassas Park, and Fairfax County, Virginia; Prince William County Department of Transportation

This report documents a delineation of WOUS, including wetlands, conducted by Stantec Consulting Services Inc. (Stantec) on the above-referenced project. The purpose of this delineation of WOUS was to identify and delineate the limits of wetlands and waters under potential jurisdiction of the U.S. Army Corps of Engineers (Corps) and/or the Virginia Department of Environmental Quality (DEQ) and quantify these resources within each of three current alternatives (2A, 2B & 4). The three alternatives that comprise the study area are located within the Bull Run and Flat Branch drainage basins in Prince William County, City of Manassas, Manassas Park, and Fairfax County, Virginia. Descriptions of each alternative are provided below.

Project Description

Parsons Transportation Group Inc. of Virginia, in coordination with the Prince William County Department of Transportation (PWC DOT) and Virginia Department of Transportation (VDOT), and in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing an Environmental Assessment (EA) to evaluate the potential social, economic, and environmental effects associated with proposed improvements in the Route 28 corridor between Godwin Drive in Prince William County and Compton Road in Fairfax County. The EA will evaluate three alternatives developed in the December 2017 Route 28 Corridor Feasibility Study. These alternatives, designated 2A, 2B, and 4, were the three highest ranked alternatives in the Feasibility Study based on criteria that included planning level costs, project benefits, and environmental and right of way impacts.

Alternative 2A would extend Godwin Drive north from the existing Godwin Drive/Sudley Road intersection, then turn east along the south side of Bull Run until joining existing Centreville Road. Centreville Road would be widened from this point north to tie into widening of Centreville Road planned by Fairfax County. Alternative 2B would follow the same alignment as Alternative 2A until reaching a point near Old Centreville Road, where it would turn northward and cross Bull Run at the existing crossing of Old Centreville Road, and tie into existing Centreville Road north of Bull Run where it would meet the Centreville Road widening planned by Fairfax County. Alternative 4 would widen existing Centreville Road on the existing alignment between Liberia Avenue and the Fairfax County/Prince William County Line.

Design with community in mind

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Reference: Delineation of Waters of the U.S. (WOUS) Environmental Documentation for Route 28 Corridor, Prince William County, City of Manassas, City of Manassas Park, and Fairfax County, Virginia; Prince William County Department of Transportation

Off-site Evaluation

Prior to conducting fieldwork, Stantec consulted the U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map for Manassas, Virginia (1998), the National Wetlands Inventory Interactive Mapper (NWI), administered by the U.S. Fish and Wildlife Service (USFWS), and the Web Soil Survey, administered by the Natural Resources Conservation Service (NRCS). The USGS quad map depicts a mix of forested, cleared, and developed land within the project area, situated on nearly level to moderately sloping terrain. The NWI depicts palustrine forested and emergent wetlands associated with stream channel as well as an open water feature within the project area. Additionally, the soil survey indicates that the project area is underlain primarily by Arcola silt loam, Arcola-Nestoria Complex, Dulles silt loam, Bermudian silt loam, Urban land-Udorthents Complex, Urban land, Manassas silt loam, Panorama silt loam, Rowland silt loam, and Albano silt loam. Albano silt loam is classified as hydric by the NRCS in Prince William County, Virginia. All other soils are classified as non-hydric; however, Arcola silt loam, Panorama silt loam, Dulles silt loam, Arcola-Nestoria complex, and Manassas silt loam may contain hydric inclusions.

On-site Evaluation

Fieldwork was conducted during June 2018 using the Routine Determination Method as outlined in the 1987 *Corps of Engineers Wetland Delineation Manual* and methods described in the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: *Eastern Mountains and Piedmont Region (Version 2.0).* Wetland flags were placed in the field by Stantec and sequentially numbered to provide an on-site record of the delineation. The data sheets used in this investigation are attached along with the Delineation Map (Figure 1) showing the GPS located limits of wetlands and other water features, as well as data point locations.

Site Description

Jurisdictional features identified by Stantec within the project limits may be classified as palustrine forested, palustrine scrub-shrub, and palustrine emergent wetlands as well as perennial, intermittent, and ephemeral stream channels. Wetland vegetation is typified by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), boxelder (*Acer negundo*), black willow (*Salix nigra*), common rush (*Juncus effusus*), fox sedge (*Carex vulpinoidia*), shallow sedge (*Carex luridia*), Japanese stilt grass (*Microstegium vimineum*), and poison ivy (*Toxicodendron radicans*). The transition from wetland to upland is generally identified by the break from hydric to non-hydric soils, a shift in a vegetative community dominated by hydrophytes (OBL to FAC) to non-hydrophytes (FACU to UPL), and a loss of indicators of hydrology, due primarily to microtopographic variability. Table 1 shows the dimensions of the identified jurisdictional resources within each alternative.

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	Palustrine Emergent Wetland (PEM) (Acres)	Palustrine Scrub Shrub Wetland (PSS) (Acres)	Palustrine Forested Wetland (PFO) (Acres)	Perennial Stream Channels (R3) Excluding Culverts* Acres (LF)	Perennial Stream Channels (R3) Including Culverts* Acres (LF)	Intermittent Stream Channels (R4) Acres (LF)	Ephemeral Stream Channels (R6) Acres (LF)
Alternative 2A (165.81 Acres)	3.10	0	3.26	2.27 (4,102)	2.28 (4,271)	0.11 (1,668)	0.03 (437)
Alternative 2B (143.11 Acres)	3.75	0	5.28	3.05 (5,134)	3.06 (5,364)	0.10 (1,504)	0.15 (1,495)
Alternative 4 (109.89 Acres)	0.09	0.03	0.51	0.58 (472)	0.59 (606)	0.08 (954)	0.004 (63)

Table 1. Wetlands and WOUS Calculations

*All culvert lengths are assumed to be straight line calculations from inlet to outlet. Areas of stream resources within culverts were calculated assuming pipe diameters of 24 inches.

If you have any questions regarding these findings, please feel free to call at your convenience. Stantec appreciates the opportunity to provide environmental services on this project.

Regards,

Stantec Consulting Services Inc.

m. M.

Jason Mann Senior Ecologist

Phone: (540) 785-5544 Fax: (540) 785-1742 jason.mann@stantec.com

Attachment: Wetland Determination Data Forms & Delineation Map (Figure 1)

c. Carolyn Keeler - Stantec

Design with community in mind

A -	Project:		28 CORRIDO										
() Stantec		RSONS TRANS						wnship/Range:		N/A			
Jocancee		COUNTY, CITY OF M		SAS PARK &	FAIRFAX COUNTY		Subregion (LI	RR or MLRA):		LRR S			
	State:		IRGINIA					Site Latitude:		38.795940°			
	Investigator(s):		. YOUNG					Site Longitude:		-77.458450°			
	Date:	(5/26/2018				Soil M	ap Unit Name:	ARCOLA-NES	STORIA COMPLEX, 7-1	15% SLOPES		
Summany of Findings.						TEAD	ELAC DVD 7.						
Summary of Findings:			UPLAN		AINAGEWAY N				·	N/A			
	Hydrophytic Vegetation is Pre		Di		Normal Circumst			NWI Classifica Local R		CONCAVE			
	Hydric Soils are Pre Wetland Hydrology is Pre		Probl	emotic Par	rameters (see Rem rameters (see Rem	arks).		Local K		DRAINAGEWAY			
	Sampled Area is within a Wet				drology (see Ren				be %:	0-1			
Hydrology Parameter:	Sumpled Area is whim a wea	unu.	ritypicar	ennace, my	urology (see Ren	iu ksj.		biop	<i>je</i> 70.	0.1			
fryurology f arameter.	Primary Indic	ators.				- 1			Secondary Indice	ators.			
	110000 11000								il Cracks (B6)				
Surface Water (A1)		Water Stained L	eaves (B9)				-		egetated Concave	e Surface (B8)			
High Water Table (A2)		Aquatic Fauna (B13)				_	Drainage F	Patterns (B10)				
Saturation (A3)		True Aquatic Pl					Moss Trim Lines (B16)						
Water Marks (B1)		Hydrogen Sulfic					_		n Water Table (C.	2)			
Sediment Deposits (B2)		Oxidized Rhizo		ig Roots (C	23)		_		urrows (C8)				
Drift Deposits (B3)		Presence of Red					_		Visible on Aerial				
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6)		-		Stressed Plants (I	21)			
Iron Deposits (B5)	(P7)	Thin Muck Surf	ace (C7)				_		ic Position (D2)				
Inundation Visible on Aerial	magery (B7)	Other					Shallow Aquitard (D3) Microtopographic Relief (D4)						
							-		ral Test (D5)	+)			
Water Depths (inches):				Remarks	HYDROLO	GY PA	RAMETER NO						
	Surface Water:												
1	Water Table:			1									
	Saturated soil:												
Vegetation Parameter:													
	Dominant Species	Stratur		%			Dominant Specie		Stratum	IND %	_		
	Prunus serotina	Shrub	FACU FAC	15 10		Kobu	nia pseudoacacia		Shrub	FACU 5			
I	Ulmus rubra Shrub Leonurus cardiaca Herbace												
-	contration current and current	nerotecc	us UPL	85									
				<u> </u>							-		
	% Dominant species FAC or w	etter: 33%					Pre	valence Index:	4.7				
	NOTE: SPECIES INDICATOR STATUS AC	CORDING TO 2016 N	ATIONAL WETLA	ND PLANT I	LIST		Calculated	d using all species	s present.				
Rapid Test for Hy	drophytic Vegetation:			Remarks:	: VEGETATI	ION PA	ARAMETER NO	DT MET.					
D	ominance Test >50%:												
Prev	valence Index is ≤ 3.0 :												
Morph	nological Adaptations:												
	drophytic Vegetation:												
Soil Parameter:													
		Matrix			R		eatures						
Depth (inches)	Color (Moist)		% 100	Co	olor (Moist)	%	Туре	Loc		Texture			
	0-4 10YR 3/4									CLAY LOAM			
4-20	4-20 5YR 5/6									CLAY LOAM			
├ ──── ├				<u> </u>		+			1				
├ ─── ├				<u> </u>		+							
Hydric Soil Indicators:				1		1			1				
Hydric Soli Indicators.								-T	Indicators for Dr.	oblematic Hydric S	Soils		
Histosol (A1)	San	dy Mucky Minera	1(\$1)		Depleted Ma	triv (F3	3		2cm Muck	~	10113		
Histosof (H1) Histic Epipedon (A2)		dy Gleyed Matrix		-	Redox Dark					ie Redox (A16)			
Black Histic (A3)		dy Redox (S5)	()	-	Depleted Dat					loodplain Soils (F	19)		
Hydrogen Sulfide (A4)		pped Matrix (S6)		-	Redox Depre					Material (TF2)			
Stratified Layers (A5)		k Surface (S7)								ow Dark Surface (7	ΓF12)		
2 cm Muck (A10)						ace (F13			Other				
Depleted Below Dark Surface	Depleted Below Dark Surface (A11) Thin Dark Surface (S9)					Piedmont Floodplain Soils (F19)							
Thick Dark Surface (A12)	Loa	my Gleyed Matri	x (F2)	2)									
Restrictive Layer (If Observed				Remarks: SOIL PARAMETER NOT MET.									
	Type:			1									
	Depth (inches):			I									

() - · · ·	Project:		28 CORRIDO		NG			1: 05		NT/ 4		
() Stantec	Applicant: City/County: PRINC	PARSONS TRANSI E WILLIAM COUNTY, CITY OF MA						ownship/Range LRR or MLRA)		N/A LRR S		
•	State:		IRGINIA					Site Latitude		38.79594		
	Investigator(s):		YOUNG					Site Longitude		-77.4584	50°	
	Date:	6/	/26/2018				Soil	Map Unit Name	ARCO	LA SILT LOAM.	2-7% SLOPE	ES
						~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~						
Summary of Findings:			UPLA		WALE NORTH					NT/ A		
	Hydrophytic Vegeta	tion is Present: X ils are Present:	Di		Normal Circumst ameters (see Ren			NWI Classific Local R		N/A CONCA	VE	
	Wetland Hydrol		Probl	lematic Par	ameters (see Ren	arks):				DRAINAGE		
	Sampled Area is with				drology (see Ren				pe %:	0-1		
Hydrology Parameter:	•		**						A			
	Prim	ary Indicators:							Secondary India	cators:		
									oil Cracks (B6)			
Surface Water (A1)		Water Stained Le							egetated Concav	e Surface (B	8)	
High Water Table (A2) Saturation (A3)		Aquatic Fauna (E True Aquatic Pla							Patterns (B10) n Lines (B16)			
Water Marks (B1)		Hydrogen Sulfide							on Water Table (C	2)		
Sediment Deposits (B2)		Oxidized Rhizos		ng Roots (C	23)				Burrows (C8)			
Drift Deposits (B3)		Presence of Redu		-					Visible on Aeria		9)	
Algal Mat or Crust (B4)		Recent Iron Redu		Soils (C6))				Stressed Plants (D1)		
Iron Deposits (B5)		Thin Muck Surfa	ice (C7)				X Geomorphic Position (D2) Shallow Aquitard (D3)					
Inundation Visible on Aerial	Imagery (B7)	Other					Microtopographic Relief (D4)					
								X FAC-Neut) 4)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER M		dui Test (D5)			
* *******	Surface Water:	_										
	Water Table:	-										
	Saturated soil:											
Vegetation Parameter:												
	Dominant Species	Stratum	IND	%		Non-	Dominant Speci	es	Stratum	IND	%	
	Carex lurida	Herbaceou		20			rex vulpinoidea	c 5	Herbaceous	OBL	10	
	Cyperus echinatus						spedeza cuneata		Herbaceous	FACU	10	
	Typha latifolia Lonicera japonica					J	uncus effusus		Herbaceous	FACW	5	
1	lonicera japonica	Vine	FAC	5								
	% Dominant species							revalence Index		-		
		STATUS ACCORDING TO 2016 NA	ATIONAL WETLA			0. N. D.		ed using all specie	es present.			
	vdrophytic Vegetation: vominance Test >50%: X			Remarks:	VEGETATI	ON PA	ARAMETER N	IET.				
	valence Index is < 3.0: X											
	hological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:	urophyte vegetaton.											
		Matrix		1	R	edox F	Features					
Depth (inches)	Color (Me	oist)	%	Co	lor (Moist)	%	Туре	Loc		Textur	e	
0-20	5YR 4/		100			, .	-71**			CLAY LC		
				1								
Hydric Soil Indicators:									Le l'este en Com D			
Historel (A1)		Sandy Mucky Mineral	1 (81)		Depleted Ma	tair (E	2)		Indicators for Pa 2cm Muck		yarıc Soil.	S
Histosol (A1) Histic Epipedon (A2)		Sandy Gleyed Matrix		-	Redox Dark					rie Redox (A	16)	
Black Histic (A3)		Sandy Redox (S5)	(54)	-	Depleted Dar					Floodplain S		
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		_	Redox Depre					t Material (T		
Stratified Layers (A5)	Stratified Layers (A5) Dark Surface (S7)										face (TF1	2)
2 cm Muck (A10)	<u> </u>											
	Depleted Below Dark Surface (A11) Thin Dark Surface (S9)					Piedmont Floodplain Soils (F19)						
Thick Dark Surface (A12)												
D	2)			Remarks: SOIL PARAMETER NOT MET.								
Restrictive Layer (If Observe				Remarks:	SOIL PARA	MET	EK NOT MET.					
				1								
	Type: Depth (inches):											

•	Project:		E 28 CORRIDO									
() Stanter	Stantec Applicant: PARSONS TRANSPOR City/County: PRINCE WILLIAM COUNTY, CITY OF MANAS							ownship/Range:		N/A		
Junicee	· · · <u> </u>			SAS PARK &	FAIRFAX COUNTY		Subregion (L	RR or MLRA)		LRR S		
	State:		VIRGINIA						:	38.79594		
	Investigator(s):		. YOUNG					Site Longitude:		-77.45845	60°	
	Date:		6/26/2018				Soil N	/lap Unit Name:	MANAS	SSAS SILT LOAM	I, 2-7% SLO	PES
G 871 11												
Summary of Findings:			UPL.		WALE SOUTH							
		Vegetation is Present: X			Normal Circumst	-		NWI Classifica		N/A		
		vdric Soils are Present:			rameters (see Ren			Local R		CONCA		
		Hydrology is Present: X			rameters (see Ren			Landi		DRAINAGE	WAY	
	Sampled Area	is within a Wetland:	Atypical	Climate/Hy	drology (see Ren	narks):		Slop	pe %:	0-1		
Hydrology Parameter:									~			
		Primary Indicators:							Secondary India	cators:		
							-		oil Cracks (B6)	G ()	0	
Surface Water (A1)		Water Stained L					-		egetated Concav	e Surface (B)	5)	
High Water Table (A2)		Aquatic Fauna (-		Patterns (B10)			
X Saturation (A3) Water Marks (B1)		True Aquatic Pl					-		n Lines (B16) n Water Table (O	20)		
		Hydrogen Sulfic		na Dooto (C	72)		-			-2)		
Sediment Deposits (B2) Drift Deposits (B3)		Oxidized Rhizo Presence of Red		ig Roots (C	_3)		-		urrows (C8)	I Imagany (C(0)	
Algal Mat or Crust (B4)		Recent Iron Red		Soile (C6			-		Visible on Aeria Stressed Plants		")	
Iron Deposits (B5)				Solis (Co)		-					
Inundation Visible on Aerial	Imagary (P7)	Thin Muck Surf Other	lace (C7)				X Geomorphic Position (D2) Shallow Aquitard (D3)					
	magery (B7)	Other					-		graphic Relief (I	34)		
							-		ral Test (D5)) +)		
Water Depths (inches):				Remarks	HVDROLO	CV PA	RAMETER M		iai Test (D5)			
muci Depins (menes).	Surface Water:			itemarks.	. IIIDKOLO	51 I A						
	Water Table:											
	Saturated soil:	1										
Vegetation Parameter:												
	Dominant Species											
	Vitis rotundifolia				% Non			es	Stratum	IND	%	
	Vitis rotundifolia Lonicera japonica											
	Lonicera japonica											
Tox	Toxicodendron radicans											
		I								44		
	0/ Dominant a	species FAC or wetter: 100%					D	oriolon oo Indori	: 3.0			
		species FAC or wetter: 100% CATOR STATUS ACCORDING TO 2016 N						evalence Index:		-		
		JATOR STATUS ACCORDING TO 2016 N	NATIONAL WEILA					ed using all specie	s present.			
	ydrophytic Vegetation:			Remarks	: VEGETATI	ION PA	RAMETER M	ET.				
	Dominance Test >50%:	<u>X</u>										
	valence Index is ≤ 3.0 :	X										
1	hological Adaptations:											
	ydrophytic Vegetation:											
Soil Parameter:									-			
		Matrix			R	edox F	eatures					
Depth (inches)	Co	lor (Moist)	%	Co	olor (Moist)	%	Туре	Loc		Texture	e	
0-2	7	.5YR 3/4	100		· ·					SILT LOA	AМ	
2-12										CLAY LO.	AM	
12-20										CLAY LO	AM	
	51 10									-		
Hydric Soil Indicators:			-									
									Indicators for P	roblematic H	ydric Soil	ls
Histosol (A1)		Sandy Mucky Minera	al (S1)		Depleted Ma	trix (F3	i)		2cm Muck	(A10)		
Histic Epipedon (A2)		Sandy Gleyed Matrix		-	Redox Dark					rie Redox (A	16)	
Black Histic (A3)		Sandy Redox (S5)		-	Depleted Dat	rk Surfa	ice (F7)		Piedmont	Floodplain Sc	oils (F19))
Hydrogen Sulfide (A4)		Stripped Matrix (S6))	-	Redox Depre	essions ((F8)		Red Paren	t Material (TF	-72)	
Stratified Layers (A5)	Stratified Layers (A5) Dark Surface (S7)					Iron-Manganese Masses (F12) Very Shallow Dark Surf						2)
2 cm Muck (A10)	rface (S8)						-					
2 cm Muck (A10) Polyvalue Below Surface (S8) Depleted Below Dark Surface (A11) Thin Dark Surface (S9)				Piedmont Floodplain Soils (F19)								
Thick Dark Surface (A12)		Loamy Gleyed Matri		-		•						
Restrictive Layer (If Observe	d)			Remarks: SOIL PARAMETER NOT MET.								
	Type:											
	Depth (inches):		-									
	,											

()	Project:		28 CORRIDO		NC		C			NT/A		
() Stantec	Applicant: City/County: PRINCE	PARSONS TRANSP WILLIAM COUNTY, CITY OF MA						wnship/Range: RR or MLRA):		N/A LRR S		
9	State:		RGINIA	SAS I AKK &	AIRTAX COUNTY		Sublegion (E	Site Latitude:		38.795940°		
	Investigator(s):		VENDER					Site Longitude:		-77.458450°		
	Date:		/6/2018				•	Iap Unit Name:		ES SILT LOAM, 0-4%	SLOPES	
								-				
Summary of Findings:					SOUTH OF "H							
	Hydrophytic Vegetatio		D'		Normal Circumst			NWI Classificat		N/A NONE	<u> </u>	
	Hydric Soil Wetland Hydrolo	s are Present:	Dis	sturbed Para	ameters (see Ren ameters (see Ren	narks):		Local Re Landfo		FLAT		
	Sampled Area is within				drology (see Ren			Slope		0-1		
Hydrology Parameter:	Sampled Area is within	i a wettanu.	Atypical	_mnac/my	itology (see Ren	nai K5).		510pc	. /0.	0-1		
fryurology i arameter.	Prima	ry Indicators:						S	econdary Indi	cators:		
	17000	ry mateutors.							Cracks (B6)			
Surface Water (A1)		Water Stained Le	aves (B9)				-			e Surface (B8)		
High Water Table (A2)		Aquatic Fauna (B					_	Drainage Pa				
Saturation (A3)		True Aquatic Plar					-	Moss Trim I				
Water Marks (B1)		Hydrogen Sulfide		D (0	2)		-		Water Table (C	22)		
Sediment Deposits (B2)		Oxidized Rhizosp Presence of Redu		ig Roots (C	3)		Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3) Algal Mat or Crust (B4)		Recent Iron Redu		Soile (C6)			-		tressed Plants			
Iron Deposits (B5)		Thin Muck Surfac		50ll3 (C0)			-		Position (D2)	(D1)		
Inundation Visible on Aerial	Imagery (B7)	Other					-	Shallow Aq				
							-		raphic Relief (I	D4)		
							-	FAC-Neutra	l Test (D5)			
Water Depths (inches):	0 (W)			Remarks:	HYDROLO	GY PA	ARAMETER NO	DT MET.				
	Surface Water:											
	Water Table: Saturated soil:											
Vegetation Parameter:	Saturated SUII.			1								
vegetation i arameter.												
I	Dominant Species	Stratum	IND	%		Non-	Dominant Specie	es	Stratum	IND 9	/o	
	binia pseudoacacia	Sapling Shrub	FACU FACU	70 20			vrus calleryana		Sapling		5	
	Juniperus virginiana Lespedeza cuneata						vrus calleryana nus pennsylvanica		Shrub		5	
	Lespedeza cuneata Schedonorus arundinaceus						nus pennsylvanica Rubus argutus	a	Shrub Herbaceous		5 .0	
							dens aristosa		Herbaceous		5	
			FAC	20			lidago altissima		Herbaceous		5	
							folium pratense		Herbaceous	FACU	5	
	% Dominant species FA						Pre	evalence Index:	3.9	-		
	NOTE: SPECIES INDICATOR ST.	ATUS ACCORDING TO 2016 NA	TIONAL WETLA					d using all species	present.			
	drophytic Vegetation:			Remarks:	VEGETATI	ION PA	ARAMETER NO	ЭТ МЕТ.				
	ominance Test >50%:											
	valence Index is ≤ 3.0 :											
	nological Adaptations:											
Soil Parameter:	ulophylic vegetation.			I								
		Matrix		T	R	edox F	Features					
Depth (inches)	Color (Mois		%	Co	or (Moist)	%	Туре	Loc		Texture		
0-7	7.5YR 6/4		100			, .	-71-			SANDY LOAN	Л	
				1								
				1								
Hydric Soil Indicators:												
		6 1 M 1 M 1	(01)		D 1 / 114		2)	Ii		roblematic Hydri	c Soils	
Histosol (A1) Histic Epipedon (A2)	-	Sandy Mucky Mineral Sandy Gleyed Matrix (_	Depleted Ma Redox Dark			-	2cm Muck	rie Redox (A16)		
Black Histic (A3)	-	Sandy Redox (S5)	34)	_	Depleted Dark			-		Floodplain Soils	(F19)	
Hydrogen Sulfide (A4)	-	Stripped Matrix (S6)		-	Redox Depre			-		t Material (TF2)	(11))	
Stratified Layers (A5)	Stratified Layers (A5) Dark Surface (S7)				Iron-Manganese Masses (F12) Very Shallow Dark						(TF12)	
2 cm Muck (A10)	2 cm Muck (A10) Polyvalue Below Surface (S8)				Umbric Surfa			-	Other			
	e (A11)	Thin Dark Surface (S9)		Piedmont Flo							
Depleted Below Dark Surface	-	I (1 1)((F2)		•							
Depleted Below Dark Surface Thick Dark Surface (A12)	-	Loamy Gleyed Matrix	· /									
Thick Dark Surface (A12)	-	Loamy Gleyed Matrix	· · /									
			. ,	Remarks:	SOIL PARA	METI	ER NOT MET.					
Thick Dark Surface (A12)		BEDROCK >7"		Remarks:	SOIL PARA	METI	ER NOT MET.					

	Project:		E 28 CORRIDO				-					
() Stantec	Applicant:	PARSONS TRANS						ownship/Range:		N/A		
	City/County: PRI State:	NCE WILLIAM COUNTY, CITY OF M	AANASSAS, MANAS VIRGINIA	SAS PARK & I	FAIRFAX COUNTY		Subregion (I	LRR or MLRA): Site Latitude:		LRR S 38.795940°		
	Investigator(s):		3. YOUNG				-	Site Longitude:		-77.458450°		
	Date:		7/10/2018					Map Unit Name:		A SILT LOAM, 2-7		
	Dutter		110/2010				-		Inteol	1101011 001111, 2 7	// 020120	
Summary of Findings:			-		ND NEAR FLA		,					
	Hydrophytic Vege				Normal Circums			NWI Classificati		N/A		
		Soils are Present: X rology is Present: X			ameters (see Rer			Local Rel Landfo		CONCAVE DRAINAGEWA		
	Sampled Area is wi				ameters (see Rer drology (see Rer			Slope		0-1	AI	
Hydrology Parameter:	Sampled Area is wi		Atypical	_IIIIate/11y	ulology (see Rel	naiks).		Stope	70.	0-1		
Tryurology 1 arameter.	Pr	imary Indicators:						S	econdary Indic	ators:		
		inter y Indicators.							Cracks (B6)			
Surface Water (A1)		Water Stained I	Leaves (B9)						getated Concave	e Surface (B8)		
High Water Table (A2)		Aquatic Fauna					Drainage Patterns (B10)					
Saturation (A3)		True Aquatic Pl						Moss Trim I				
Water Marks (B1)		Hydrogen Sulfi							Water Table (C	2)		
Sediment Deposits (B2)		Oxidized Rhizo		ng Roots (C	23)			Crayfish Bu				
Drift Deposits (B3)		Presence of Rec					Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6))		Stunted or Stressed Plants (D1) X Geomorphic Position (D2)					
Iron Deposits (B5)	L	Thin Muck Sur	face (C7)				Shallow Aquitard (D3)					
Inundation Visible on Aeria	Imagery (B7)	Other					Microtopographic Relief (D4)					
								X FAC-Neutra		+)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER M					
	Surface Water:					• 1						
	Water Table:	_		1								
	Saturated soil:]								
Vegetation Parameter:												
	Dominant Spacios	Stratu	n IND	0/-		Non	Dominant Speci	05	Stratum	IND	%	
	Dominant Species axinus pennsylvanica	Saplin		% 10			Bidens aristosa	es	Herbaceous		5	
	Juncus tenuis	Herbace		25			Carex lurida		Herbaceous		5	
	Carex vulpinoidea	Herbace					odendron radica	ns	Herbaceous		5	
	Juncus effusus	Herbace		10		Se	olidago rugosa		Herbaceous	FAC	3	
	Lonicera japonica	Vine	FAC	5						1		
										1		
										1		
										1		
										1		
										1		
										1		
										1		
										1		
										1		
										L L		
	% Dominant specie	es FAC or wetter: 100%					Pi	revalence Index:	2.3			
		R STATUS ACCORDING TO 2016		ND PLANT L	IST			ed using all species		•		
Rapid Test for H	ydrophytic Vegetation:			Remarks:		ION P.	ARAMETER M					
		x										
		X										
	phological Adaptations:											
	vdrophytic Vegetation:											
Soil Parameter:												
		Matrix			F	Redox H	Features					
Depth (inches)	Color (M	Moist)	%	Col	lor (Moist)	%	Туре	Loc		Texture		
0-15	7.5YR	4/4	90	1	0YR 4/6	10	C	М		CLAY LOAN	M	
15-20	5YR	5/6	100							CLAY		
Hydric Soil Indicators:												
								In	idicators for Pro		ric Soils	
Histosol (A1)		Sandy Mucky Miner			Depleted Ma			-	2cm Muck			
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)	_	Redox Dark					ie Redox (A16)		
Black Histic (A3)		Sandy Redox (S5)		Depleted Dark Surface (F7)						Floodplain Soils		
Hydrogen Sulfide (A4)		Stripped Matrix (S6))	_	Redox Depre				X Red Parent			
Stratified Layers (A5)							asses (F12)			ow Dark Surfac	e (1F12)	
	2 cm Muck (A10)Polyvalue Below Surface (S8)This Dark Surface (S9)					S8) Umbric Surface (F13) Other Piedmont Floodplain Soils (F19)						
Depleted Below Dark Surface Thick Dark Surface (A12)	ce (A11)	Thin Dark Surface (Loamy Gleyed Matr		-	Piedmont Flo	ooaplai	n 50118 (F19)					
Inick Dark Surface (A12)		Loaniy Gleyed Matr	IA (F2)	٤)								
Restrictive Layer (If Observ	20)			Remarks:	SOIL PAD	MET	FR MET					
Restrictive Edger (1) Observe	Type:			reemarks.	SOLIAR	RAMETER MET.						
	Depth (inches):		-	1								
been seen and seen a	A 1 177											

Sampling Point Number: <u>6</u>

(Dei i	Project:	ROUTE RSONS TRANS	28 CORRIDO		NC		Section/To	washin/Dongo		NI/A	
() Stantec		I COUNTY, CITY OF M.						wnship/Range: RR or MLRA):		N/A LRR S	
9	State:		IRGINIA	<i></i>			Sublegion (E	Site Latitude:		38.795940°	
	Investigator(s):		YOUNG					Site Longitude:		-77.458450°	
	Date:	7	/10/2018				Soil M	Iap Unit Name:	ARCO	LA SILT LOAM, 2-7% SI	LOPES
								-			
Summary of Findings:					ND NEAR FLA						
	Hydrophytic Vegetation is Pr		Die		Normal Circumst			NWI Classificat		N/A CONCAVE	
	Hydric Soils are Pr Wetland Hydrology is Pr				ameters (see Rem ameters (see Rem			Local Rel Landfo		SLOPE	
	Sampled Area is within a Wet				drology (see Ren			Slope	-	1-2	
Hydrology Parameter:	-										
	Primary Indi	cators:						S	econdary India	cators:	
							_	Surface Soil	Cracks (B6)		
Surface Water (A1)		Water Stained L					_			e Surface (B8)	
High Water Table (A2)		_ Aquatic Fauna (I					-	Drainage Pa			
Saturation (A3) Water Marks (B1)		True Aquatic Pla Hydrogen Sulfid					-	Moss Trim I	Unes (B16) Water Table (C	10	
Sediment Deposits (B2)		Oxidized Rhizos		a Roots (C	3)		-	Crayfish Bu		2)	
Drift Deposits (B2)	—	Presence of Red		ig Roots (C	3)		-			l Imagery (C9)	
Algal Mat or Crust (B4)	—	Recent Iron Red		Soils (C6)			-		tressed Plants (
Iron Deposits (B5)		Thin Muck Surfa		50113 (00)			-		Position (D2)		
Inundation Visible on Aerial	magery (B7)	Other					-	Shallow Aq			
							-		raphic Relief (E	04)	
							-	FAC-Neutra		<i>,</i>	
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER NO	DT MET.			
	Surface Water:										
1	Water Table:										
Vegetation Devenuetory	Saturated soil:										
vegetation Parameter:											
I	tation Parameter: Dominant Species Stratum Juniperus virginiana Tree Pinus virginiana Tree Juniperus virginiana Sapling Kalmia latijolia Shrub Lonicera japonica Vine						Dominant Specie	s	Stratum	IND %	٦
	Juniperus virginiana Tree Pinus virginiana Tree Juniperus virginiana Sapling Kalmia latifolia Shrub										_
	Pinus virginiana Tree										
	Juniperus virginiana Sapling										
			FACU	15							
	onicera japonica	vine	FAC	10							
	% Dominant species FAC or v						Pro	evalence Index:	4.0	_	
	NOTE: SPECIES INDICATOR STATUS AG	CCORDING TO 2016 N.	ATIONAL WETLA					d using all species	present.		
	drophytic Vegetation:			Remarks:	VEGETATI	ION PA	ARAMETER NO	OT MET.			
	ominance Test >50%:										
	valence Index is ≤ 3.0 :										
1	nological Adaptations:										
	drophytic Vegetation:										
Soil Parameter:											
		Matrix					eatures			_	
Depth (inches)	Color (Moist)		<u>%</u> 100	Co	or (Moist)	%	Туре	Loc		Texture	
0-20	0-20 2.5YR 6/4									CLAY LOAM	
						+ +					
				<u> </u>		+					
						+ +					
Hydric Soil Indicators:											
Hydrie Son Indicators.								li	dicators for P	roblematic Hydric S	Soils
Histosol (A1)	Sa	ndy Mucky Minera	1(\$1)		Depleted Ma	trix (F3	3)		2cm Muck		ions.
Histic Epipedon (A2)		ndy Gleyed Matrix			Redox Dark			-		rie Redox (A16)	
Black Histic (A3)		ndy Redox (S5)	(-)	-	Depleted Dar			-		Floodplain Soils (F	19)
Hydrogen Sulfide (A4)		ripped Matrix (S6)		_	Redox Depre					t Material (TF2)	,
Stratified Layers (A5)		ark Surface (S7)		Iron-Manganese Masses (F12)				-		ow Dark Surface (1	ſF12)
2 cm Muck (A10)	2 cm Muck (A10) Polyvalue Below Surface (S8)					ace (F1		-	Other		
	Depleted Below Dark Surface (A11) Thin Dark Surface (S9)						n Soils (F19)				
	Thick Dark Surface (A12) Loamy Gleyed Matrix (F2)					-		1			
	Lo	amy Gleyed Matrix	ĸ (F2)								
Thick Dark Surface (A12)		amy Gleyed Matrix	x (F2)								
	1)	amy Gleyed Matrix	x (F2)	Remarks:	SOIL PARA	METH	ER NOT MET.				
Thick Dark Surface (A12)		amy Gleyed Matrix	x (F2)	Remarks:	SOIL PARA	METH	ER NOT MET.				

A	Project:		28 CORRIDO									
() Stantec	Applicant: City/County: PRIN	PARSONS TRANS					Section/Tow Subregion (LRI	nship/Range:		N/A LRR S		
9	State:		IRGINIA	SAS FARK & I	AIRFAA COUNT I		-	Site Latitude:	-	38.795940)°	
	Investigator(s):		. YOUNG				-	te Longitude:		-77.45845		
	Date:	(5/28/2018				Soil Ma	p Unit Name:	ARCOLA-NE	STORIA COMPL	EX, 7-15%	SLOPES
						- -						
Summary of Findings:	Undrophytic Veca	tation is Descent			D NEAR FLAC Normal Circumst			WI Classifian	tion	N/A		
	Hydrophytic Veget Hydric S	oils are Present:	Dis		ameters (see Ren			WI Classifica Local Re		NONE		
		ology is Present:	Probl	ematic Para	ameters (see Ren	narks):		Landf		FLAT		
	Sampled Area is wit	thin a Wetland:			drology (see Ren			Slop	e %:	1-2		
Hydrology Parameter:												
	Pri	mary Indicators:							Secondary Indic	ators:		
Surface Water (A1)		Water Stained L	eaves (B0)						il Cracks (B6) egetated Concav	o Surfaco (BS	3	
High Water Table (A2)		Aquatic Fauna (atterns (B10)	e Suitace (Do	9	
Saturation (A3)		True Aquatic Pl	ants (B14)					Moss Trim	Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic		D (0)					Water Table (C	22)		
Sediment Deposits (B2) Drift Deposits (B3)		Oxidized Rhizo Presence of Red		ig Roots (C	3)				urrows (C8) Visible on Aeria	I Imagery (CO	0	
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6)					Stressed Plants ()	
Iron Deposits (B5)		Thin Muck Surf					Geomorphic Position (D2)					
Inundation Visible on Aerial	magery (B7)	Other							quitard (D3)			
									graphic Relief (E al Test (D5)	04)		
Water Depths (inches):				Remarks:	HYDROLO	GY P/	ARAMETER NOT		ai Test (D5)			
maner 2 epino (mentes).	Surface Water:			reemarks.								
	Water Table:											
	Saturated soil:											
Vegetation Parameter:												
I	Oominant Species	Stratur	n IND	%		Non-	Dominant Species		Stratum	IND	%	
Mic	Dominant Species Stratum Microstegium vimineum Herbaceous Solanum carolinense Herbaceous Lespedeza cuneata Herbaceous						Iuncus effusus		Herbaceous	FACW	5	
	Solanum carolinense Herbaceous											
	espeaeza cuneaia	nerbaceo	us FACU	10								
			•									
	% Dominant species						Prev	alence Index:	3.3	-		
		STATUS ACCORDING TO 2016 N	ATIONAL WETLA					using all species	present.			
	drophytic Vegetation:			Remarks:	VEGETATI	ION P.	ARAMETER NOT	I MET.				
	ominance Test $>50\%$: valence Index is ≤ 3.0 :											
	nological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:												
		Matrix			R	Redox I	Features					
Depth (inches)	Color (M		% 80		or (Moist)	%	Туре	Loc		Texture		
	0-14 7.5YR 6/4				5YR 4/4	20		М	(GRAVELLY		
14-20	14-20 7.5YR 3/4			2.	5YR 4/6	5	С	М		CLAY LO	AМ	
Hydric Soil Indicators:			· · · · · · · · · · · · · · · · · · ·	-			· · · · · ·		-			
								j.	Indicators for Pr		dric Soil	ls
Histosol (A1)		Sandy Mucky Miner		_	Depleted Ma				2cm Muck		~	
Histic Epipedon (A2) Black Histic (A3)		Sandy Gleyed Matrix Sandy Redox (S5)	(54)	-	Redox Dark Depleted Dar					rie Redox (A1 Floodplain So		
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		-	Redox Depre					Material (TF		
	Stratified Layers (A5) Dark Surface (S7)					Iron-Manganese Masses (F12)						12)
2 cm Muck (A10)	2 cm Muck (A10) Polyvalue Below Surface (S8)					ace (F1			Other			
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S	59)	Piedmont Floodplain Soils (F19)								
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)	.)								
Destriction I many (If O)	1)			Remarks: SOIL PARAMETER NOT MET.								
Restrictive Layer (If Observed	l) Type:			Remarks:	SUIL PARA	MET	EK NUT MET.					
	Depth (inches):											
L	· · · · · · · · · · · · · · · · · · ·											

Sampling Point Number: <u>8</u>

(D	Project:		E 28 CORRIDO		NC		C			N1/A		
() Stantec	Applicant: City/County: PRINCE	PARSONS TRANS						ownship/Range: RR or MLRA):		N/A LRR S		
9	State:		/IRGINIA	SAS FARE &	TAIRFAA COUNT I		Subregion (E	Site Latitude:		38.79594	0°	
	Investigator(s):		. YOUNG					Site Longitude:		-77.45845		
	Date:		6/28/2018					Iap Unit Name:		ESTORIA COMPL		SLOPES
								-				
Summary of Findings:			1		ND NEAR FLA					NT/ A		
	Hydrophytic Vegetati Hydric Soi	ion is Present: X ls are Present: X	Die		Normal Circums ameters (see Rei			NWI Classifica Local Re		N/A CONCAV	/F	
	Wetland Hydrolo		Probl	ematic Par	ameters (see Rei ameters (see Rei	marks):		Locar Re		FLAT	Б	
	Sampled Area is withi	n a Wetland: X			drology (see Rei			Slop	e %:	0-1		
Hydrology Parameter:												
	Prime	ary Indicators:							Secondary Indic	cators:		
Surface Water (A1)		Water Stained I	eaves (B9)				-		l Cracks (B6) egetated Concav	e Surface (B)	8)	
X High Water Table (A2)		Aquatic Fauna					-		atterns (B10)	e Surface (Be	,,	
X Saturation (A3)		True Aquatic Pl					-		Lines (B16)			
Water Marks (B1)		Hydrogen Sulfi		D (0			-		Water Table (C	22)		
Sediment Deposits (B2) Drift Deposits (B3)		X Oxidized Rhizo Presence of Rec		ig Roots (C	3)		-		urrows (C8) Visible on Aeria	l Imagery (CG	n	
Algal Mat or Crust (B4)			luction in Tilled	Soils (C6)			-		Stressed Plants ()	
Iron Deposits (B5)		Thin Muck Sur					-		c Position (D2)			
Inundation Visible on Aerial	Imagery (B7)	Other					Shallow Aquitard (D3)					
							-	Microtopog X FAC-Neutr	graphic Relief (E	04)		
Water Depths (inches):				Remarks:	HYDROLO)GY PA	RAMETER M		ai 1551 (D3)			
	Surface Water:					• 11						
	Water Table: 4											
Vegetation Donomatory	Saturated soil: 1											
Vegetation Parameter:												
I	Dominant Species	Stratu		%			Dominant Specie	es	Stratum	IND	%	
	Carex lurida	Herbace		20 15			Carex frankii		Herbaceous	OBL	5	
	Juncus effusus Herbac					Verb	esina alternifolia		Herbaceous	FAC	5	
				· · · ·	•							
	% Dominant species F							evalence Index:	1.4	-		
	NOTE: SPECIES INDICATOR ST	TATUS ACCORDING TO 2016 !	NATIONAL WETLA			ION D		ed using all species	present.			
	drophytic Vegetation: X ominance Test >50%: X			Remarks:	VEGEIAI	ION PA	ARAMETER M	EI.				
	valence Index is < 3.0: X											
	nological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:				-								
	<u> </u>	Matrix	%				eatures					
	Depth (inches) Color (Moist)				lor (Moist) .5YR 4/8	% 5	Type C	Loc M		Texture CLAY LO		
0-8	0-8 5YR 4/3				.5YR 4/8	5	C	PL		CLAI LO.	-xivi	
8-12					.5YR 4/8	3	C	М		CLAY		
12-20	12-20 7.5YR 6/6				.5YR 3/3	3	D	М	0	GRAVELLY	CLAY	
Hydrig C - 11 In diana	Iydric Soil Indicators:											
Hyunc Son indicators:									Indicators for Pr	oblematic H	dric Soil	s
Histosol (A1)		Sandy Mucky Miner	al (S1)		X Depleted Ma	atrix (F3	3)		2cm Muck		une sou	3
Histic Epipedon (A2)		Sandy Gleyed Matrix		_	Redox Dark	Surface	e (F6)		Coast Prain	rie Redox (A		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Da					Floodplain Sc		
Hydrogen Sulfide (A4) Stratified Layers (A5)		Stripped Matrix (S6) Dark Surface (S7)		-		ressions (F8) anese Masses (F12)			X Red Parent	t Material (TF ow Dark Surf		2)
2 cm Muck (A10)		Polyvalue Below Su	rface (S8)	_	Umbric Surf				Other	on Dar our	uee (11'1	-)
	Depleted Below Dark Surface (A11) Thin Dark Surface (S9)					Piedmont Floodplain Soils (F19)						
Thick Dark Surface (A12)		Loamy Gleyed Matr										
Description I (ICO)	1)			Remarks: SOIL PARAMETER MET.								
Restrictive Layer (If Observe	d) Type:			Remarks:	SOIL PAR	AMETI	EK MET.					
	Depth (inches):		-									
	* * *			•								

•	Project:		E 28 CORRIDO				-					
() Stantec	Stantec Applicant: PARSONS TRANSPOL City/County: PRINCE WILLIAM COUNTY, CITY OF MANA							ownship/Range:		N/A		
Jocameee	· · ·			SAS PARK & I	FAIRFAX COUNTY		Subregion (L	RR or MLRA):		LRR S		
	State:		/IRGINIA . YOUNG				-	Site Latitude:		38.79594		
	Investigator(s):		6/28/2018				-	Site Longitude:		-77.45845		
	Date:	(0/28/2018					Iap Unit Name:	ARCO	OLA SILT LOAM,	2-7% SLOPES	
Summary of Findings:				WETLAN	ND NEAR FLA	GBY	AI-24;					
	Hydrophytic V	/egetation is Present: X			Normal Circums		-	NWI Classifica	tion:	N/A		
	Hyd	Iric Soils are Present: X			ameters (see Ren			Local Re	elief:	NONE		
		Hydrology is Present: X			ameters (see Rer			Landf	orm:	FLAT		
	Sampled Area is	s within a Wetland: X	Atypical	Climate/Hyd	drology (see Rer	narks):		Slop	e %:	0-1		
Hydrology Parameter:												
		Primary Indicators:							Secondary Ind	icators:		
							-		l Cracks (B6)			
Surface Water (A1)		X Water Stained L					Sparsely Vegetated Concave Surface (B8)					
X High Water Table (A2)		Aquatic Fauna (-		atterns (B10)			
X Saturation (A3)		True Aquatic Pl					-		Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic		D (0	2)		-		Water Table ((C2)		
Sediment Deposits (B2)		Oxidized Rhizo		ig Roots (C	3)		-	Crayfish Bu		-1 1		
Drift Deposits (B3)		Presence of Red		a 11 (Go			-		Visible on Aeri		り	
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6)			-		Stressed Plants			
Iron Deposits (B5)	L (D7)	Thin Muck Surf	ace (C7)				X Geomorphic Position (D2)					
Inundation Visible on Aerial	Imagery (B /)	Other					Shallow Aquitard (D3) Microtopographic Relief (D4)					
1							-	X FAC-Neutr		₽ ₩)		
Water Depths (inches):				Remarks:	HYDROLO	GY P	ARAMETER M		1000 (DJ)			
muci Depuis (menes).	Surface Water:			contarks.	III DROLO	J. 1/						
	Water Table: 12	2		1								
	Saturated soil: 1			1								
Vegetation Parameter:				-								
		······										
	Dominant Species	Stratur		%			Dominant Specie		Stratum	IND	%	
	Ulmus americana	Tree	FACW	30		Fraxi	inus pennsylvanic	а	Tree	FACW	10	
	Acer rubrum	Tree	FAC	20								
	Ulmus americana	Sapling		20								
E.	Acer rubrum axinus pennsylvanica	Sapling Shrub		15 5								
	ichium arundinaceum	Herbaceo		25								
	Carex vulpinoidea	Herbaced		15								
	xicodendron radicans	Vine	FAC	5								
		ecies FAC or wetter: 100%					Pr	evalence Index:	2.0			
	NOTE: SPECIES INDICA	ATOR STATUS ACCORDING TO 2016 N	NATIONAL WETLA	ND PLANT L				ed using all species	present.			
	ydrophytic Vegetation:			Remarks:	VEGETAT	ION P.	ARAMETER M	ET.				
I	Dominance Test >50%:	X										
Pre	evalence Index is ≤ 3.0 :	X										
Morp	hological Adaptations:											
	ydrophytic Vegetation:											
Soil Parameter:												
		Matrix	%	<u> </u>		_	Features					
	Depth (inches) Color (Moist)				or (Moist)	%	Туре	Loc		Texture		
0-4		5YR 4/2	95		5YR 6/6	5	С	М		CLAY LO.	AM	
4-9		5YR 5/2	90 70		5YR 6/8	10	C	М		CLAY		
9-20	9-20 7.5YR 6/2				5YR 5/8	30	С	М		CLAY		
ļ									ļ			
HIL C YE Y						1						
Hydric Soil Indicators:											1.1. 0.1	
		<i>a </i>							Indicators for F		dric Soils	
Histosol (A1)		Sandy Mucky Minera			X Depleted Ma				2cm Muc			
Histic Epipedon (A2)		Sandy Gleyed Matrix	K (S4)	-	Redox Dark					irie Redox (A		
Black Histic (A3)		Sandy Redox (S5) Stripped Matrix (S6)		_	Depleted Da Redox Depre					Floodplain Sc		
Hydrogen Sulfide (A4) Stratified Lawars (A5)	Stratified Layers (A5) Dark Surface (S7)									nt Material (TH		
						Iron-Manganese Masses (F12) Very Shallow Dark Surface (TI Wery Shallow Dark Surface (TI Other					ace (1F12)	
	2 cm Muck (A10) Polyvalue Below Surface (S8)								Other			
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S		-	Pleamont Flo	oodplai	n Soils (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matri	ix (F2)	2)								
Destriction I am II C				Remarks: SOIL PARAMETER MET.								
Restrictive Layer (If Observe	2d) Type:			Remarks:	SUIL PARA	MATE 1	EA NEL.					
1	Depth (inches):		-	1								
	Depui (inclies).			1								

Sampling Point Number: <u>10</u>

Acres 1	Project:	ROUTE PARSONS TRANS	E 28 CORRIDO		INC		Castian /T			NT/ A		
() Stantec	Applicant: City/County: F	PARSONS TRAINS PRINCE WILLIAM COUNTY, CITY OF M						ownship/Range: RR or MLRA):		N/A LRR S		
9	State:		/IRGINIA	5115 Truck C			Subregion (2	Site Latitude:		38.795940	,o	
	Investigator(s):		. YOUNG				•	Site Longitude:		-77.458450		
	Date:	(5/28/2018				Soil N	1ap Unit Name:	ARCO	OLA SILT LOAM, 2	-7% SLOPES	
Summary of Findings:					D NEAR FLAC		-			N7/A		
		egetation is Present: ric Soils are Present:	Die		Normal Circumst ameters (see Ren			NWI Classifica Local Re		N/A CONVEX		
		lydrology is Present:	Probl	ematic Par	ameters (see Ren	narks):		Local Re		SLOPE	<u> </u>	
		within a Wetland:			drology (see Ren			Slop	-	1-2		
Hydrology Parameter:	^		••					*				
		Primary Indicators:							Secondary Indi	icators:		
									l Cracks (B6)			
Surface Water (A1)		Water Stained L					-			ve Surface (B8))	
High Water Table (A2) Saturation (A3)		Aquatic Fauna (True Aquatic Pl					-		atterns (B10) Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic					-		Water Table (C2)		
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (C	(3)		-		irrows (C8)	(2)		
Drift Deposits (B2)		Presence of Red		.5 10000 (0)		-			al Imagery (C9))	
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6))		Stunted or Stressed Plants (D1)					
Iron Deposits (B5)		Thin Muck Surf	ace (C7)				Geomorphic Position (D2)					
Inundation Visible on Aerial	Imagery (B7)	Other						Shallow Ac				
							-		raphic Relief (D4)		
Water Dentha (in chea).				Domostro		CVD	DAMETED NO		al Test (D5)			
Water Depths (inches):	Surface Water:			Remarks:	HIDROLO	GI PA	ARAMETER NO	JI MEL.				
	Water Table:			1								
	Saturated soil:											
Vegetation Parameter:												
I	Dominant Species	Stratur		%			Dominant Specie	es	Stratum	IND	%	
	Quercus alba Quercus alba	Tree Sapling	FACU FACU	45 10			iperus virginiana arya tomentosa		Tree Tree	FACU UPL	10 5	
	Celtis occidentalis	Sapling		10		C	arya iomeniosa		nee	OIL	5	
	Microstegium vimineum											
	Lonicera japonica											
Parth	enocissus quinquefolia	Vine	FACU	15								
	0/ Dominant and	cies FAC or wetter: 33%					De	avalanca Indavi	3.8			
		ccies FAC or wetter: 33% TOR STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT I	IST			evalence Index: ad using all species		_		
Rapid Test for H	ydrophytic Vegetation:	TOR STATUS ACCORDING TO 2010 N	ATIONAL WEILA	Remarks:		ION P	ARAMETER N	<u> </u>	present.			
	ominance Test >50%:			Remarks.	VLOLIMI			or mer.				
	valence Index is < 3.0:											
	hological Adaptations:											
1	vdrophytic Vegetation:											
Soil Parameter:	` ·`											
		Matrix			R	edox F	Features					
Depth (inches)	Color	r (Moist)	%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-8		YR 3/4	100							CLAY LOA		
8-20	5Y	'R 4/4	100							CLAY LOA	M	
┞──────┤												
Hydric Soil Indicators:			1	1		1						
Hydric Son Indicators.								1	Indicators for P	Problematic Hyd	dric Soils	
Histosol (A1)		Sandy Mucky Minera	al (S1)		Depleted Ma	trix (F?	3)		2cm Mucl		inc sous	
Histic Epipedon (A2)		Sandy Gleyed Matrix		-	Redox Dark					irie Redox (A1)	6)	
Black Histic (A3)		Sandy Redox (S5)				Dark Surface (F7)			Piedmont	Floodplain Soi	ls (F19)	
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		_	Redox Depre					nt Material (TF2		
Stratified Layers (A5)						Iron-Manganese Masses (F12) Very Shallow Dark Surface (.ce (TF12)	
2 cm Muck (A10)												
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S		-	Piedmont Flo	oodplai	n Soils (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)									
Restrictive Layer (If Observe	4)			Remarks: SOIL PARAMETER NOT MET.								
Resirictive Layer (If Observer	d) Type:			Remarks:	SUIL PARA	INTE I I	EK NUT MET.					
	Depth (inches):		-									
L	- open (menes).											

()	Project:		28 CORRIDO		NG		_ ·					
() Stantec	Applicant:	PARSONS TRANS						ownship/Range:		N/A LRR S		
	City/County: PRINC State:	E WILLIAM COUNTY, CITY OF M	ANASSAS, MANAS IRGINIA	SAS PARK & I	AIRFAX COUNTY		Sublegion (1	LRR or MLRA):		38.79594		
								Site Latitude:				
	Investigator(s):		. YOUNG 5/28/2018					Site Longitude:		-77.4584		
	Date:	(0/28/2018				5011	Map Unit Name:	PANORA	AMA SILT LOAN	1, 2-7% SLC	PES
Summary of Findings:				WETI AP	ND NEAR FLA	CRV	0.6					
Summary of Findings:	Hydrophytic Vegeta	tion is Present: X			Normal Circums			NWI Classifica	tion	PFO1A		
		ils are Present: X	Di		ameters (see Rer			Local R		CONCA		
	Wetland Hydro				ameters (see Rer			Locar K		FLAT	VL	
	Sampled Area is with				drology (see Rer			Slop		0-1		
Hydrology Parameter:	Sumpled Area is with	in a victuala. A	Atypical	cinnate/11y	inology (see Rei	narks).		biop	<i>i</i> e /0.	01		
fryurology i arameter.	Prin	ary Indicators:				T			Secondary Indic	ators.		
	110	ury maicaiors.							il Cracks (B6)			
Surface Water (A1)		X Water Stained L	eaves (B9)						egetated Concav	e Surface (B	8)	
High Water Table (A2)		Aquatic Fauna (Patterns (B10)			
X Saturation (A3)		True Aquatic Pl							Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic							n Water Table (C	22)		
Sediment Deposits (B2)		Oxidized Rhizo		ng Roots (C	3)			Crayfish B	urrows (C8)			
Drift Deposits (B3)		Presence of Red	uced Iron (C4)					Saturation	Visible on Aeria	l Imagery (C	9)	
Algal Mat or Crust (B4)		Recent Iron Red	uction in Tilled	Soils (C6)					Stressed Plants (D1)		
Iron Deposits (B5)		Thin Muck Surf	ace (C7)						ic Position (D2)			
Inundation Visible on Aerial	Imagery (B7)	Other							quitard (D3)			
									graphic Relief (E	04)		
				ID 1	HUPPOT ?	CIV D	DIMETER	X FAC-Neuti	ral Test (D5)			
Water Depths (inches):	Courfe on Wester			Remarks:	HYDROLO	IGY PA	RAMETER M	ET.				
	Surface Water:	-		1								
	Water Table: Saturated soil: O	-		1								
Vegetation Parameter:	Saturated SOIL U			I								
vegetation i arameter.												
I	Dominant Species	Stratur	n IND	%		Non-I	Dominant Speci	es	Stratum	IND	%	
	Carex frankii	Herbaceo		20			uncus tenuis		Herbaceous	FAC	5	
Mic	rostegium vimineum	Herbaced	us FAC	15			patiens capensis		Herbaceous	FACW	3	
						Verb	esina alternifolia	1	Herbaceous	FAC	3	
				•	•				•			
	% Dominant species	FAC or wetter: 100%					P	revalence Index:	2.1			
	NOTE: SPECIES INDICATOR S	STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT L	IST		Calculat	ed using all species	s present.	-		
Rapid Test for H	ydrophytic Vegetation:			Remarks:	VEGETAT	ION PA	ARAMETER M		-			
Ľ	Oominance Test >50%: X											
Pre	valence Index is ≤ 3.0 : X											
Morp	hological Adaptations:											
Problematic H	vdrophytic Vegetation:											
Soil Parameter:												
		Matrix			F	Redox F	eatures					
Depth (inches)	Color (Me	oist)	%		or (Moist)	%	Туре	Loc		Textur	e	
0-12	5YR 4/		85	5	5YR 2/2	15	D	М		CLAY LO	AM	
12-20	12-20 5YR 4/4				5YR 6/6	5	С	М		CLAY		
				<u> </u>					ļ			
				1								
Hydric Soil Indicators:												
									Indicators for Pr		ydric Soil	ls
Histosol (A1)		Sandy Mucky Minera		_	Depleted Ma				2cm Muck			
Histic Epipedon (A2)		Sandy Gleyed Matrix	(S4)	_	Redox Dark					rie Redox (A		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Da					Floodplain So		
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		Redox Depressions (F8) Iron-Manganese Masses (F12)					2) X Red Parent Material (TF2) Very Shallow Dark Surface (TF12)			12)
Stratified Layers (A5)		Dark Surface (S7)	6 (00)	_			. ,			ow Dark Sur	face (TFI	.2)
2 cm Muck (A10)	a (A11)	Polyvalue Below Sur		-	Umbric Surf				Other			
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S		_	Piedmont Fl	oodplair	n 50118 (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)									
Postricting I man /If Ol -	d)			Domostr	SOIL DAD	METT	гр мет					
Restrictive Layer (If Observe				Remarks: SOIL PARAMETER MET.								
1	Type: Depth (inches):			1								
	Depui (menes).			1								

Stantec	Project:	PARSONS TRANS		GROUP IN				ownship/Range:		N/A		
Jocanteec		NCE WILLIAM COUNTY, CITY OF M		SAS PARK & F	AIRFAX COUNTY		Subregion (L	RR or MLRA):		LRR S		
	State: Investigator(s):		VIRGINIA 8. YOUNG					Site Latitude: Site Longitude:		38.79594		
	Date:		6/28/2018					Jap Unit Name:		MA SILT LOAN		OPES
											,	
Summary of Findings:			-) NEAR FLAC							
	Hydrophytic Vege				ormal Circums			NWI Classifica		N/A		
		Soils are Present: ology is Present:			meters (see Ren meters (see Ren			Local R Landi		NONE FLAT		
	Sampled Area is wi				rology (see Ren				e %:	1-2		
Hydrology Parameter:	Sumpted Treats		Thypical	onnaid, 11 ju	101055 (500 1001	indi no).		biof		. 2		
	Pr	imary Indicators:							Secondary Indic	ators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial	magery (B7)	Presence of Rec	(B13) ants (B14) de Odor (C1) spheres on Livir fuced Iron (C4) duction in Tilled	-))			Sparsely V Drainage F Moss Trim Dry-Seasor Crayfish B Saturation Stunted or Geomorph Shallow A Microtopo	il Cracks (B6) egetated Concava atterns (B10) n Water Table (C urrows (C8) Visible on Aerial Stressed Plants (ic Position (D2) quitard (D3) graphic Relief (D al Test (D5)	2) I Imagery (C D1)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO		ui 1051 (195)			
	Surface Water:											
	Water Table: Saturated soil: 13	_										
Vegetation Parameter:	Saturated soil: 13											
vegetation i arameter.												
	ominant Species	Stratu		%			Dominant Specie		Stratum	IND	%	
	espedeza cuneata oxanthum odoratum	Herbace		35		Symph	yotrichum pilosu	m	Herbaceous	FAC	5	
Antr	oxantnum oaoratum	Herbace	ous FACU	10								1
	% Dominant specie NOTE: SPECIES INDICATO	s FAC or wetter: O 2 STATUS ACCORDING TO 2016 J	NATIONAL WETLA	ND PLANT LI	5T		Prevalence Index:					
Rapid Test for Hy	drophytic Vegetation:			Remarks:	VEGETAT	ION PA	ARAMETER N	ed using all species OT MET.	1			
Prev Morph	ominance Test >50%: valence Index is \leq 3.0: nological Adaptations: drophytic Vegetation:											
Soil Parameter:	· · · ·											
		Matrix					eatures					
Depth (inches)	Color (I		%	Colo	or (Moist)	%	Туре	Loc		Textur		
0-20	5YR	4/4	100						G	RAVELLY	CLAY	
			1			+			1			
			1						ł			-
				<u> </u>								
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surface Thick Dark Surface (A12)		Sandy Mucky Miner Sandy Gleyed Matri: Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Su Thin Dark Surface (Loamy Gleyed Matr	Gleved Matrix (S4) Redox Dark Surface (F6) Coast Prairie Redox (A16) Redox (S5) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) ad Matrix (S6) Redox Depressions (F8) Red Praemt Material (TF2) burface (S7) Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF burk Surface (S8) Umbric Surface (F13) Other ark Surface (S9) Piedmont Floodplain Soils (F19) Other)			
Restrictive Layer (If Observed				Remarks:	SOIL PARA	AMETI	ER NOT MET.					
	Type: Depth (inches):		-									
	- op (1								

Sampling Point Number: <u>13</u>

•	E 28 CORRIDO										
() Stantec	Applicant:	PARSONS TRANS						ownship/Range:		N/A	
Julie	City/County:	PRINCE WILLIAM COUNTY, CITY OF M		SAS PARK &	& FAIRFAX COUNTY		Subregion (L	RR or MLRA):		LRR S	
	State:		/IRGINIA					Site Latitude:		38.795940°	
	Investigator(s):		G & A. MCIN	ſYRE				Site Longitude:		-77.458450°	
	Date:		6/29/2018				Soil N	Iap Unit Name:	BERMUI	DIAN SILT LOAM, 0-	2% SLOPES
Summary of Findings:				WETT A	ND NEAD ELA	C DVA	D 21.				
Summary of Findings:	Undrophysic	Vegetation is Present: X		WEILA	ND NEAR FLA		-	NWI Classificat		N/A	
		Vegetation is Present: X dric Soils are Present: X	Di	sturbed Pa	rameters (see Ren	-		Local Rel		CONCAVE	
		Hydrology is Present: X			arameters (see Ren			Locar Rei		DRAINAGEWA	AY
		is within a Wetland: X			ydrology (see Ren			Slope		0-1	
Hydrology Parameter:	Bumpleu Area		ritypical	Chinate, 11	yurology (see Ren	narks).		ыоре	/0.	01	
fryurology f arameter.		Primary Indicators:				- r		s	econdary Indic	cators.	
		Thinkiry Indicators.							Cracks (B6)	uors.	
Surface Water (A1)		X Water Stained I					-	Sparsely Ve	getated Concav	ve Surface (B8)	
\mathbf{X} High Water Table (A2)		Aquatic Fauna					-	Drainage Pa			
X Saturation (A3)		True Aquatic Pl					-	Moss Trim I		70)	
Water Marks (B1)		Hydrogen Sulfie		a Dooto (C2)		-	Crayfish Bu	Water Table (C	_2)	
Sediment Deposits (B2) Drift Deposits (B3)		Oxidized Rhizo Presence of Rec		ig Roots ((5)		-			al Imagery (C9)	
Algal Mat or Crust (B4)		Recent Iron Rec		Soile (Ce	5)		-		stressed Plants (
Iron Deposits (B5)		Thin Muck Sur		50113 (CC	5)		-		Position (D2)		
Inundation Visible on Aerial	Imagery (B7)	Other	ace (c/)				-	Shallow Aq			
	indgery (D7)	Ouler					-		raphic Relief (E	24)	
							-	X FAC-Neutra			
Water Depths (inches):				Remarks	S: HYDROLO	GY PA	RAMETER M				
········ = - _F ···· (·······)·	Surface Water:										
	Water Table:	4									
	Saturated soil:	1									
Vegetation Parameter:											
]	Dominant Species	Stratu		%		Non-I	Dominant Specie	es	Stratum	IND	%
	Salix nigra	Tree	OBL	45							
	Acer negundo	Tree	FAC FAC	20 20							
	Acer negundo Salix nigra	Saplin Saplin		15							
	Acer negundo	Shrub		10							
	Acer rubrum	Shrub		5							
Mic	rostegium vimineum	Herbace		10							
	anthelium dichotomum	Herbace		5							
	Vitis rotundifolia	Vine	FAC	10							
Tox	icodendron radicans	Vine	FAC	5							
		pecies FAC or wetter: 100%					Pr	evalence Index:	2.2	_	
	NOTE: SPECIES INDIC	CATOR STATUS ACCORDING TO 2016	NATIONAL WETLA	ND PLANT	LIST		Calculate	ed using all species	present.		
Rapid Test for H	vdrophytic Vegetation:			Remarks	s: VEGETATI	ION PA	RAMETER M	ET.			
L	Oominance Test >50%:	X									
Pre	valence Index is ≤ 3.0 :	X									
Morp	hological Adaptations:										
Problematic H	ydrophytic Vegetation:										
Soil Parameter:	×										
		Matrix			R	edox F	eatures				
Depth (inches)	Col	or (Moist)	%	C	olor (Moist)	%	Туре	Loc		Texture	
0-20		5YR 4/3	90	0.	5YR 3/4	10	C	M		CLAY	
							-				
			1	1							
Hydric Soil Indicators:											
								Ii	idicators for Pi	roblematic Hydri	ic Soils
Histosol (A1)		Sandy Mucky Miner	al (S1)		Depleted Ma	trix (F3)		2cm Muck	(A10)	
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)		Redox Dark	Surface	(F6)	-		irie Redox (A16)	
Black Histic (A3)		Sandy Redox (S5)			Depleted Dat	rk Surfa	ice (F7)	_	Piedmont P	Floodplain Soils	(F19)
Hydrogen Sulfide (A4)		Stripped Matrix (S6)	1	-	Redox Depre	essions ((F8)		X Red Parent	t Material (TF2)	
Stratified Layers (A5)		Dark Surface (S7)			Iron-Mangan			-		low Dark Surface	e (TF12)
2 cm Muck (A10)		Polyvalue Below Su		-	Umbric Surfa				Other		
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface (Piedmont Flo	oodplain	n Soils (F19)	-	-		
Thick Dark Surface (A12)		Loamy Gleyed Matr	ix (F2)		_						
Restrictive Layer (If Observe	d)			Remarks	S: SOIL PARA	METE	ER MET.				
	Type:		-	1							
	Depth (inches):										

Sampling Point Number: <u>14</u>

Stantec	Project: Applicant: City/County:PR State:	PARSONS TRANS	ianassas, manas /IRGINIA	GROUP II SAS PARK & F				ownship/Range: RR or MLRA): Site Latitude:		N/A LRR S 38.795940	0	
	Investigator(s): Date:		G & A. MCINT 5/29/2018	FYRE				Site Longitude: Iap Unit Name:		-77.458450 dian silt loam		
Summary of Findings:	<u></u>		0/2//2010	UPI ANI) NEAR FLAG	RVA	-		blittino		0270 510115	
		etation is Present: Soils are Present: rology is Present:		N sturbed Para	formal Circumsta meters (see Rem meters (see Rem	ances: arks):	X	NWI Classificat Local Re Landfo	lief:	N/A NONE FLAT		
Huduslaan Denometer	Sampled Area is w				rology (see Rem			Slope	2 %:	0-1		
Hydrology Parameter:	P	rimary Indicators:						s	Secondary India	cators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial I	magery (B7)	Water Stained I Aquatic Fauna (True Aquatic Pi Hydrogen Sulfic Oxidized Rhizo Presence of Rec Recent Iron Rec Thin Muck Surf Other	(B13) ants (B14) de Odor (C1) spheres on Livir fuced Iron (C4) fuction in Tilled		3)			Sparsely Ve Drainage Pa Moss Trim I Dry-Season Crayfish Bu Saturation V Stunted or S Geomorphic Shallow Aq	Water Table (C rrows (C8) Visible on Aeria Stressed Plants (c Position (D2) uitard (D3) raphic Relief (E	C2) 1 Imagery (C9) (D1)		
Water Depths (inches):	Surface Water: Water Table: Saturated soil:			Remarks:	HYDROLO	GY PA	ARAMETER NO	OT MET.				
Vegetation Parameter:												
Rapid Test for Hy Dr Prev Morph	drophytic Vegetation: ominance Test >50%: alence Index is \leq 3.0: ological Adaptations:	es FAC or wetter: 33%	UPL UPL FAC FACU DUS FACU DUS FACU UPL	% 30 10 5 25 10 10 10		R C		e Shrub FACU 3 e FACU 5 PACU 5				
Soil Parameter:	drophytic Vegetation:											
Depth (inches)	Color (Matrix Moist)	%	Cole	Reference of the second	edox I %	Features Type	Loc		Texture		
0-20	5YR		100				-28*		(GRAVELLY C		
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surface Thick Dark Surface (A12)	(A11)	Sandy Mucky Miner. Sandy Gleyed Matrix Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) Polyvalue Below Su Thin Dark Surface (S Loamy Gleyed Matri	x (S4) rface (S8) S9)		Redox Dark S Depleted Dar Redox Depre Iron-Mangan Umbric Surfa	Depleted Matrix (F3) Indicators for Problematic Hydric Soils Depleted Matrix (F3) 2cm Muck (A10) Depleted Dark Surface (F6) Coast Prairie Redox (A16) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) Redox Depressions (F8) Red Parent Material (TF2) Umbric Surface (F13) Very Shallow Dark Surface (TF12) Piedmont Floodplain Soils (F19) Other					6) ls (F19) 2)	
Restrictive Layer (If Observed) Type: Depth (inches):		-	Remarks:	SOIL PARA	MET	ER NOT MET.	· · · · · · · · · · · · · · · · · · ·				

Sampling Point Number: <u>15</u>

(Project:		E 28 CORRIDO		NC		а.: т	1. 0		NT/ A		
() Stantec	Applicant: City/County: PR	PARSONS TRANS						wnship/Range		N/A LRR S		
	State:	INCE WILLIAM COUNTY, CITY OF M	IANASSAS, MANAS /IRGINIA	SAS PARK & I	FAIRFAX COUNTY		Sublegion (L	RR or MLRA) Site Latitude		38.79594		
	Investigator(s):		G & A. MCINT	VDE				Site Longitude		-77.4584		
	Date:		5/29/2018	TKL					URBAN LAND-U			0.7% SLOPES
	Date.		5/2010				5011 1	tap onit ivane	UKBAN LAND-0	DOKTHENTS C	OMPLEA, 0)-1% SLOPES
Summary of Findings:			UP	LAND IN S	SWALE NEAR	FLAG	BYAV-8;					
	Hydrophytic Veg	etation is Present:		1	Normal Circums	tances:	X	NWI Classifica	ation:	N/A		
		Soils are Present:	Di		ameters (see Rer			Local R	elief:	CONCA	VE	
		drology is Present:			ameters (see Rer			Land	form:	DRAINAGE	WAY	
	Sampled Area is v	vithin a Wetland:	Atypical	Climate/Hy	drology (see Rer	marks):		Slop	pe %:	4-6		
Hydrology Parameter:												
	P	rimary Indicators:							Secondary India	cators:		
							-		il Cracks (B6)			
Surface Water (A1) High Water Table (A2)		Water Stained L Aquatic Fauna (-		egetated Concav Patterns (B10)	e Surface (B	8)	
Saturation (A3)		True Aquatic Pl					-		Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic					-		n Water Table (C	72)		
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (C	3)		-		urrows (C8))		
Drift Deposits (B3)		Presence of Red		8(-	-)		-		Visible on Aeria	d Imagery (C	9)	
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6)			-		Stressed Plants		, ,	
Iron Deposits (B5)		Thin Muck Surf					_		ic Position (D2)			
Inundation Visible on Aerial	Imagery (B7)	Other					_	Shallow A	quitard (D3)			
							_		graphic Relief (I	D4)		
				1 .					ral Test (D5)			
Water Depths (inches):	CC 337			Remarks:	HYDROLO	OGY PA	RAMETER NO	DT MET.				
	Surface Water:			1								
	Water Table: Saturated soil:			1								
Vegetation Parameter:	Saturated soll.											
vegetation i arameter.												
I	Dominant Species	Stratur	n IND	%		Non-D	Dominant Specie	s	Stratum	IND	%	i.
	Carya glabra	Tree	FACU	30			us pennsylvanice		Shrub	FACW	5	i i
	Quercus rubra	Tree	FACU	20		Liquida	ambar styraciflu	а	Shrub	FAC	5	i.
	Quercus alba	Tree	FACU	15								i i
Lia	Ulmus alata uidambar styraciflua	Sapling Sapling		10 10								i i
Liq	Acer negundo	Sapling		10								i i
	Quercus rubra	Shrub		10								i i
	Prunus serotina	Shrub		10								i i
Mic	rostegium vimineum	Herbaced	ous FAC	15								i.
	Quercus rubra	Herbaced	ous FACU	10								i.
Tox	icodendron radicans	Vine	FAC	40								i.
	enocissus quinquefolia	Vine	FACU	20								i i
1	lonicera japonica	Vine	FACU	15								i.
												i.
												i.
												i.
											I	
	% Dominant space	ies FAC or wetter: 31%					Dr.	evalence Index	3.6			
		DR STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT I	IST			d using all specie		-		
Rapid Test for H	vdrophytic Vegetation:	A STATES ACCORDENC TO 2010	ATIONAL WEILA	Remarks:		ION PA	RAMETER NO		s present.			
	ominance Test >50%:			Kemarks.	VEGETAL	IONTA	KAMETEKI	JI MILI.				
	valence Index is ≤ 3.0 :											
	hological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:	,											
		Matrix			F	Redox Fe	eatures					
Depth (inches)	Color	(Moist)	%	Col	or (Moist)	%	Туре	Loc		Textur	e	
0-20	5YR		100							CLAY LO		
Hydric Soil Indicators:												-
									Indicators for P		ydric Soil	ls
Histosol (A1)		Sandy Mucky Miner			Depleted Ma				2cm Muck		10	
Histic Epipedon (A2) Black Histic (A3)		Sandy Gleyed Matrix Sandy Redox (S5)	(54)		Redox Dark Depleted Da					rie Redox (A Floodplain So		`
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		-	Redox Depre					t Material (T		,
Stratified Layers (A5)		Dark Surface (S7)		-	Iron-Mangar					low Dark Sur		12)
2 cm Muck (A10)		Polyvalue Below Sur	face (S8)	-	Umbric Surf				Other)
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface (S		-	Piedmont Fle							
Thick Dark Surface (A12)		Loamy Gleyed Matri		-		pram						
Restrictive Layer (If Observe	d)			Remarks:	SOIL PARA	AMETE	ER NOT MET.					
	Type:		_	1								
	Depth (inches):											

Sampling Point Number: <u>16</u>

(D	Project:		E 28 CORRIDO									
() Stantec	Applicant: City/County:	PARSONS TRANS						wnship/Range: RR or MLRA):		N/A LRR S		
	State:		MANASSAS, MANAS VIRGINIA	SAS PARK &	FAIRFAX COUNTY		- Sublegion (L)	Site Latitude:		38.79594		
	Investigator(s):		G & A. MCINI	TYPE			-	Site Longitude:		-77.45845		
	Date:		6/29/2018	TRE			-	Iap Unit Name:				-7% SLOPES
							-	-r			, ,	
Summary of Findings:			UPL		WALE EAST O		,					
		Vegetation is Present:	-		Normal Circums			NWI Classifica		N/A		
		ydric Soils are Present:			ameters (see Ren			Local Re		CONCAN		
		Hydrology is Present:			ameters (see Rer			Landf		DRAINAGE	WAY	
	Sampled Area	is within a Wetland:	Atypical	Climate/Hy	drology (see Rer	narks):		Slop	e %:	4-6		
Hydrology Parameter:		Primary Indicators:							Secondary Indi	oatona		
		Frimary Indicators:							l Cracks (B6)	cators:		
Surface Water (A1)		Water Stained I	Leaves (B9)				-		egetated Concav	e Surface (B8	3)	
High Water Table (A2)		Aquatic Fauna					-		atterns (B10)		/	
Saturation (A3)		True Aquatic P					-		Lines (B16)			
Water Marks (B1)		Hydrogen Sulfi					-		Water Table (C	22)		
Sediment Deposits (B2)			ospheres on Livir	ng Roots (C	(3)		-	Crayfish Bu				
Drift Deposits (B3)			duced Iron (C4)		,		-		Visible on Aeria	d Imagery (CS	n	
Algal Mat or Crust (B4)			duction in Tilled	Soils (C6)		-		Stressed Plants		/	
Iron Deposits (B5)		Thin Muck Sur		bolis (Co	/		-	X Geomorphi		(D1)		
Inundation Visible on Aerial	Imagery (B7)				-		uitard (D3)					
	iniugery (D7)	Other				-		graphic Relief (I	D (4)			
						-		al Test (D5)				
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO		/			
- · ·	Surface Water:			1								
	Water Table:			1								
	Saturated soil:											
Vegetation Parameter:												
,	D	Star to		0/		N	D	_	64	DD	0/	
1	Dominant Species	Stratu		% 30			Dominant Specie	S	Stratum	IND	% 10	
	Quercus rubra Ulmus alata	Tree		20			Acer rubrum		Tree	FAC	10	
	Prunus serotina	Saplin		20								
	Quercus rubra	Saplin		10								
	Ulmus rubra	Shrub		10								
	Rosa multiflora	Shrub		10								
	Acer negundo	Shrub		5								
	Rubus argutus	Herbace		10								
1	mpatiens capensis	Herbace	ous FACW	3								
	Campsis radicans	Vine	FAC	10								
Parth	enocissus quinquefolia	Vine	FACU	10								
	Lonicera japonica	Vine	FAC	5								
	5 1		_									
		•	•									
	% Dominant s	species FAC or wetter: 42%					Pre	evalence Index:	3.7	_		
	NOTE: SPECIES INDI	CATOR STATUS ACCORDING TO 2016	NATIONAL WETLA	ND PLANT I	IST		Calculate	d using all species	present.			
Rapid Test for H	ydrophytic Vegetation:			Remarks:	VEGETAT	ION P.	ARAMETER NO)T MET.				
E	Oominance Test >50%:											
Pre	valence Index is ≤ 3.0 :											
Morp	hological Adaptations:											
Problematic H	ydrophytic Vegetation:											
Soil Parameter:												
		Matrix			R	ledox I	Features					
Depth (inches)		lor (Moist)	%	Co	lor (Moist)	%	Туре	Loc		Texture	:	
0-6		7.5YR 4/3	100							CLAY		
6-20		5YR 4/4	100							CLAY		
Hydric Soil Indicators:												
								1	Indicators for P	-	dric Soil	\$
Histosol (A1)		Sandy Mucky Miner		_	Depleted Ma				2cm Muck			
Histic Epipedon (A2)		Sandy Gleyed Matri	x (S4)	_	Redox Dark					rie Redox (Al		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Da					Floodplain So		
Hydrogen Sulfide (A4)		Stripped Matrix (S6)	_	Redox Depre					t Material (TF		
Stratified Layers (A5)		Dark Surface (S7)		_	Iron-Mangar					low Dark Surf	ace (TF1	2)
2 cm Muck (A10)		Polyvalue Below Su		_	Umbric Surf				Other			
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface (_	Piedmont Flo	oodplai	n Soils (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matr	rix (F2)									
		-										
Restrictive Layer (If Observe				Remarks:	SOIL PARA	MET	ER NOT MET.					
	Type:		_	1								
	Depth (inches):											

Sampling Point Number: <u>17</u>

Stantec		PARSONS TRANS RINCE WILLIAM COUNTY, CITY OF M	IANASSAS, MANAS	GROUP I				ownship/Range LRR or MLRA):	N/A LRR S		
	State: Investigator(s):		/IRGINIA KILGORE					Site Latitude Site Longitude		38.795940° -77.458450°	>	
	Date:	(5/28/2018				Soil I	Map Unit Name	URBAN LAND-U	JDORTHENTS COM	PLEX, 0-7% SL	.OPES
Summary of Findings:			UP		SWALE NEAR		,					
		getation is Present: c Soils are Present:	Dis		Normal Circumst ameters (see Rem			NWI Classific Local F		N/A CONCAVE		_
	Wetland Hy	drology is Present:	Probl	ematic Para	ameters (see Ren	narks):		Land	lform:	DRAINAGEW		_
Hydrology Parameter:	Sampled Area is	within a Wetland:	Atypical (Climate/Hy	drology (see Rem	narks):		Slo	pe %:	1-2		
nyurology rarameter.	1	Primary Indicators:							Secondary India	cators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial I		Water Stained L Aquatic Fauna (True Aquatic Pl Hydrogen Sulfa Oxidized Rhizon Presence of Red Recent Iron Red Thin Muck Surf Other	B13) ants (B14) de Odor (C1) spheres on Livin luced Iron (C4) luction in Tilled					Sparsely V Drainage Moss Trir Dry-Seasc Crayfish I Saturation Stunted or X Geomorpl Shallow A Microtopo	oil Cracks (B6) Vegetated Concav Patterns (B10) on Water Table (C Burrows (C8) t Visible on Aeria r Stressed Plants (hic Position (D2) Vquitard (D3) graphic Relief (I tral Test (D5)	re Surface (B8) C2) I Imagery (C9) D1)		
Water Depths (inches):	Saufa a Watan			Remarks:	HYDROLO	GY PA	RAMETER N					
	Surface Water: Water Table:											
Vegetation Parameter:	Saturated soil:											
D	ominant Species Poa pratensis	Stratur		% 90		Non-I	Dominant Speci	es	Stratum	IND	%	
Di Prev Morph Problematic Hy		ies FAC or wetter: O or status according to 2016 N	ATIONAL WETLA	ND PLANT L		ON PA	P. Calculat ARAMETER N	-				
Soil Parameter:		Matrix			R	edox F	eatures					
Depth (inches)		(Moist)	%	Col	or (Moist)	%	Type	Loc		Texture		
0-10 10-20		/R 3/4 /R 4/6	100 90		5YR 5/8	10	С	М		CLAY LOAN CLAY LOAN		
									1			
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surface Thick Dark Surface (A12)	al (S1) ((S4) fface (S8) S9) x (F2)		Depleted Mat Redox Dark S Depleted Dar Redox Depre Iron-Mangan Umbric Surfa Piedmont Flo	Surface k Surfa ssions ese Ma ace (F1	e (F6) ace (F7) (F8) asses (F12) 3)		Piedmont Red Paren	~) s (F19))			
Restrictive Layer (If Observea	/) Type: Depth (inches):		-	Remarks:	SOIL PARA	METH	ER NOT MET.					

() Chamber	Project: Applicant: PAR	ROUTE RSONS TRANS	E 28 CORRIDO		INC		Section/To	wnship/Range:		N/A	
Stantec		COUNTY, CITY OF M						RR or MLRA):		LRR S	
•	State:	1	/IRGINIA					Site Latitude:		38.795940°	
	Investigator(s):		KILGORE					Site Longitude:		-77.458450°	
	Date:		6/28/2018				Soil N	Iap Unit Name:	BERMU	DIAN SILT LOAM, 0-2%	SLOPES
Summary of Findings:				WETLA	ND NEAR FLA	AG GKI	I-19:				
	Hydrophytic Vegetation is Pre	esent: X			Normal Circums		,	NWI Classificat	ion:	N/A	
	Hydric Soils are Pre				ameters (see Ren			Local Re		CONCAVE	
	Wetland Hydrology is Pre				ameters (see Ren			Landfo		FLAT	
Hydrology Parameter:	Sampled Area is within a Wetl	and: X	Atypical 0	limate/Hy	drology (see Ren	narks):		Slope	2 %:	0-1	
Hydrology Farameter.	Primary Indic	ators:				T			Secondary India	cators:	
									l Cracks (B6)		
Surface Water (A1)		Water Stained I					-		getated Concav	e Surface (B8)	
X High Water Table (A2) X Saturation (A3)	<u> </u>	Aquatic Fauna True Aquatic Pl					-	Drainage Pa Moss Trim	tterns (B10)		
Water Marks (B1)		Hydrogen Sulfi					-		Water Table (C	22)	
Sediment Deposits (B2)		Oxidized Rhizo	spheres on Livin	g Roots (C	23)		-	Crayfish Bu	rrows (C8)		
Drift Deposits (B3)		Presence of Rec		a 11 (GC			-		isible on Aeria		
Algal Mat or Crust (B4) Iron Deposits (B5)		Thin Muck Sur	luction in Tilled	Soils (C6)		-		Stressed Plants (c Position (D2)		
Inundation Visible on Aerial	Imagery (B7)	Other					-	Shallow Aq			
_		-					_		raphic Relief (E	04)	
Water Depths (in shee).				Domostro		CVDA	RAMETER MI	X FAC-Neutra	al Test (D5)		
Water Depths (inches):	Surface Water:			Remarks:	HIDROLO	GIPA	RAME LEK MI	C1.			
	Water Table: 10										
	Saturated soil: 4										
Vegetation Parameter:											
	Dominant Species	Stratu	n IND	%		Non-I	Dominant Specie	es	Stratum	IND %	٦
Fr	axinus pennsylvanica	FACW	20								
Mi	Saururus cernuus crostegium vimineum	ous OBL ous FAC	40 20								
	Typha latifolia	Herbace		15							
							_				
	% Dominant species FAC or we NOTE: SPECIES INDICATOR STATUS ACC		ATIONAL WETLA	ND DI ANT I	ter			evalence Index:	1.6	-	
Rapid Test for H	ydrophytic Vegetation:	CORDING TO 2016	ATIONAL WEILA	Remarks:		ION PA	RAMETER M	d using all species ET.	present.		
1	Dominance Test >50%: X			reemarks.	(LOLINI)						
Pre	evalence Index is ≤ 3.0 : X										
-	phological Adaptations:										
Problematic H Soil Parameter:	ydrophytic Vegetation:										
Son i arameter.		Matrix		1	R	edox Fo	eatures				
Depth (inches)	Color (Moist)		%	Co	lor (Moist)	%	Туре	Loc		Texture	
0-8	7.5YR 4/2		85		.5YR 5/8	15	C	М		CLAY LOAM	
8-20	7.5YR 4/4		80	7	.5YR 5/8	20	С	М		CLAY LOAM	
Hydric Soil Indicators:											
	Histosol (A1) Sandy Mucky Mineral (S1							1		roblematic Hydric S	Soils
Histosol (A1) Histic Epipedon (A2)		dy Mucky Miner dy Gleyed Matri:		-	X Depleted Ma Redox Dark			-	2cm Muck Coast Prair	rie Redox (A16)	
Black Histic (A3)		dy Redox (S5)		_	Depleted Da			-		Floodplain Soils (F	19)
Hydrogen Sulfide (A4)		pped Matrix (S6)		-	Redox Depre					t Material (TF2)	
Stratified Layers (A5) 2 cm Muck (A10)		k Surface (S7) yvalue Below Su	face (SP)	-	Iron-Mangar Umbric Surfa			· ·		low Dark Surface (IF12)
2 cm Muck (A10) Depleted Below Dark Surfac		yvalue Below Su n Dark Surface (3		-	Piedmont Flo		· /	· ·	Other		
Thick Dark Surface (A12)		my Gleyed Matr		-		prain	(- +>)				
				1	ac						
Restrictive Layer (If Observe				Remarks:	SOIL PARA	METE	ER MET.				
	Type: Depth (inches):		-								
L	· · · · · · · · · · · · · · · · · · ·										

Sampling Point Number: <u>19</u>

(D	Project:	E 28 CORRIDO		NC		a .: a	1. 1. 45		NT/ 4		
() Stantec	Applicant: City/County: PRI	PARSONS TRANS						Township/Range: LRR or MLRA):		N/A LRR S	
9	State:		/IRGINIA	SAS FARE &	FAIRFAX COUNT I		Sublegion	Site Latitude:		38.795940°	
	Investigator(s):		KILGORE					Site Longitude:		-77.458450°	
	Date:		6/28/2018				Soil	Map Unit Name:		N SILT LOAM, 0-2% S	SLOPES
										-	
Summary of Findings:			1		ND NEAR FLA		-				
	Hydrophytic Veg	etation is Present: X Soils are Present: X	Di		Normal Circums ameters (see Rei			NWI Classificati Local Rel		N/A CONCAVE	
		rology is Present: X	Prob	ematic Par	ameters (see Rei ameters (see Rei	marks):		Local Rel		LOODPLAIN	
	Sampled Area is w				drology (see Rei			Slope		0-1	
Hydrology Parameter:	<u>^</u>							*			
	Рі	rimary Indicators:						S	econdary Indicato	rs:	
									Cracks (B6)		
Surface Water (A1)		X Water Stained I Aquatic Fauna							getated Concave S	urface (B8)	
High Water Table (A2) X Saturation (A3)		True Aquatic Pl						X Drainage Pa X Moss Trim I			
Water Marks (B1)		Hydrogen Sulfie							Water Table (C2)		
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (C	23)			Crayfish Bu			
Drift Deposits (B3)		Presence of Rec	luced Iron (C4)						isible on Aerial In		
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6))				tressed Plants (D1)	
Iron Deposits (B5)		Thin Muck Surf	face (C7)					X Geomorphic			
									uitard (D3) raphic Relief (D4)		
		X FAC-Neutra									
Water Depths (inches):				Remarks:	HYDROLO)GY PA	RAMETER N		/		
	Surface Water:										
	Water Table: Saturated soil: 3										
Vegetation Parameter:	Saturated soil: 3										
	Oominant Species	Stratu		%		Non-I	Dominant Spec	ies	Stratum	IND %	
	xinus pennsylvanica rpinus caroliniana	Tree	FACW FAC	30 25							
	Quercus bicolor	Tree	FACW	20							
	xinus pennsylvanica	Sapling		20							
	atanus occidentalis	Sapling		15							
	ehmeria cylindrica	Herbace		20							
	Saururus cernuus rostegium vimineum	Herbaceo	-	25 15							
mic	ostegium vinineum	Tierbaceo	Jus TAC	15							
			I							I	
	% Dominant specie	es FAC or wetter: 100%					H	revalence Index:	2.1		
		R STATUS ACCORDING TO 2016 N	NATIONAL WETLA					ted using all species	present.		
	drophytic Vegetation:	**		Remarks:	VEGETAT	ION PA	RAMETER N	AET.			
		X									
		X									
1	ological Adaptations: drophytic Vegetation:										
Soil Parameter:	utophytic vegetation.										
		Matrix			I	Redox F	eatures				
Depth (inches)	Color (1	Moist)	%	Co	lor (Moist)	%	Туре	Loc		Texture	
0-6	5YR		80		5YR 4/6	30	С	М		Y CLAY LOAN	Л
6-20	5YR	4/4	85		5YR 5/8	15	С	М	C	CLAY LOAM	
├ ──── ├						+		<u>├</u> ───┨			
<u>}</u> ₽			1	ł		+		┟───┨			
Hydric Soil Indicators:						1 1					
								Iı	udicators for Probl	ematic Hydric S	oils
Histosol (A1)		Sandy Mucky Miner	al (S1)	_	X Depleted Ma	atrix (F3	5)		2cm Muck (A	10)	
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)	_	Redox Dark			_	Coast Prairie I		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Da			-		odplain Soils (F1	.9)
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		_	Redox Depr				X Red Parent Ma		TE12)
Stratified Layers (A5)		Dark Surface (S7)	food (SP)	-	Iron-Mangar			-		Dark Surface (T	F12)
2 cm Muck (A10) Depleted Below Dark Surface	(A11)	Polyvalue Below Su Thin Dark Surface (S		-	Umbric Surf Piedmont Fl				Other		
Thick Dark Surface (A12)	(111)	Loamy Gleyed Matri		_		Soupiali	1 30113 (1117)				
			(/								
Restrictive Layer (If Observed	<i>l</i>)			Remarks:	SOIL PAR	AMETE	ER MET.				
	Type:		-								
L	Depth (inches):										

•	Project: ROUTE 28						-					
() Stantec	Applicant:	PARSONS TRANS						wnship/Range:		N/A		
Jocameee	City/County:	PRINCE WILLIAM COUNTY, CITY OF M		SAS PARK & F	FAIRFAX COUNTY		Subregion (L	RR or MLRA):		LRR S		
	State:		VIRGINIA				-	Site Latitude:		38.79594		
	Investigator(s):		J. MANN 6/27/2018				-	Site Longitude:		-77.45845		
	Date:		0/2//2018					Iap Unit Name:	ARCOLA-N	ESTORIA COMPI	LEX, 7-15% SLC	OPES
Summary of Findings:			UPLA	ND IN LOV	W AREA SOU	гн ор	BULL RUN;					
· · · · · · · · · · · · · · · · · · ·	Hydrophytic	c Vegetation is Present:	I	N	Normal Circumst	ances:	X	NWI Classificat	ion:	N/A		
		lydric Soils are Present: X			ameters (see Ren			Local Re		CONCA		
		d Hydrology is Present:	Prob	ematic Para	ameters (see Ren	narks):		Landfo	orm:	TOE OF SL	LOPE	
	Sampled Are	a is within a Wetland:	Atypical (Climate/Hyd	drology (see Ren	narks):		Slope	e %:	0-1		
Hydrology Parameter:							-					
		Primary Indicators:							econdary Ind	cators:		
							-		Cracks (B6)		0	
Surface Water (A1)		Water Stained I					-		getated Conca	ve Surface (B)	8)	
High Water Table (A2)		Aquatic Fauna (-	Drainage Pa				
Saturation (A3)		True Aquatic Pl					-	Moss Trim		CO		
Water Marks (B1)		Hydrogen Sulfic		a Doots (C	2)		-		Water Table (-2)		
Sediment Deposits (B2)			spheres on Livir	ig Roots (C.	3)		-	Crayfish Bu	riows (C8) /isible on Aeri	al Imagami (C	20)	
Drift Deposits (B3)		Presence of Rec		R-11- (CC)			-				9)	
Algal Mat or Crust (B4)			duction in Tilled	Solis (C6)			-		Stressed Plants			
Iron Deposits (B5)	Imagami (D7)	Thin Muck Surf Other	lace (C7)				-	X Geomorphic				
Inundation Visible on Aerial	Imagery (B7)					-	Shallow Aq	raphic Relief (D4)			
							-	FAC-Neutra		J4)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO					
	Surface Water:					1						
	Water Table:			1								
	Saturated soil:											
Vegetation Parameter:												
		<u> </u>							<u>a.</u>			
<u>_</u>	Dominant Species	Stratu		% 30			Dominant Specie		Stratum	IND	%	
	Quercus alba Fagus grandifolia	Tree	FACU FACU	30 30			tanus occidentalis Juglans nigra		Tree Tree	FACW FACU	10 10	
	Fagus grandifolia Fagus grandifolia	Sapling		10			dendron tulipifera	7	Tree	FACU	10	
	rpinus caroliniana	Sapling		10			Ulmus rubra	ı	Sapling	FAC	5	
	Acer negundo	Sapling		10	I		ocissus quinquefe	olia	Herbaceous	FACU	15	
	Acer negundo	Shrub		20			1 1 5					
	Rosa multiflora	Shrub	FACU	10							1	
Mid	rostegium vimineum	Herbaced	ous FAC	80								
											1	
											1	
											1	
											1	
											1	
											1	
											1	
											1	
											1	
		i		<u> </u>								
	% Dominant	species FAC or wetter: 50%					Pr	evalence Index:	3.4	_		
	NOTE: SPECIES IND	ICATOR STATUS ACCORDING TO 2016 N	NATIONAL WETLA	ND PLANT LI	IST		Calculate	ed using all species	present.	_		
Rapid Test for H	drophytic Vegetation:			Remarks:	VEGETAT	ION P.	ARAMETER N	OT MET.				
I	ominance Test >50%:											
Pre	valence Index is ≤ 3.0 :											
Morp	hological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:												
		Matrix	-		R	edox I	Features					
Depth (inches)	C	olor (Moist)	%	Col	or (Moist)	%	Туре	Loc		Textur		
0-4		5YR 4/2	100						GRAVE	LLY SANDY		AM
4-20		5YR 4/4	95	5	5YR 4/6	5	С	М		CLAY LO	AM	
			 									
Undrig Coil In ¹			1	<u> </u>		1						
Hydric Soil Indicators:								,	ndicators for F	problem ation 11	Indria Calle	
			1 (01)		D 1 . 11	· · /P	2)	1	5	-	yaric sous	
Histosol (A1)		Sandy Mucky Miner Sandy Gleyed Matrix		_	Depleted Ma			-	2cm Muc		10	
Histic Epipedon (A2)			x (54)	_	Redox Dark			-		irie Redox (A		
Black Histic (A3)		Sandy Redox (S5)		-	Depleted Date		. ,			Floodplain So		
Hydrogen Sulfide (A4) Stratified Lavors (A5)		Stripped Matrix (S6)	,	-	Redox Depre Iron-Mangan			-	X Red Parer			
Stratified Layers (A5)		Dark Surface (S7)	-f (88)	_						llow Dark Sur	1ace (1112)	
2 cm Muck (A10)	(411)	Polyvalue Below Sur		-	Umbric Surfa				Other			
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S		_	Piedmont Flo	oodplai	in Soils (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matri	IX (F2)									
Destriction I was all O	4)			Dom - 1-	SOIL PARA	MET	ED MET					
Restrictive Layer (If Observe	d) Type:			Remarks:	SOIL PARA	INET:	EK MEI.					
	Depth (inches):		-	1								
L	Deput (menes).			1								

(D	Project:	OR CROUP D	10			1. 5		27/1			
() Stantec	Applicant: City/County: PR	PARSONS TRANS						wnship/Range: RR or MLRA):		N/A LRR S	
	State:		/IRGINIA	5A3 PAKK & F/	IRFAX COUNTY		Sublegion (L	Site Latitude:		38.795940)°
	Investigator(s):		J. MANN					Site Longitude:		-77.45845	
	Date:		5/27/2018					fap Unit Name:	ROWLA	ND SILT LOAM,	
Summary of Findings:					D NEAR FLA		,				
		etation is Present: X			ormal Circums			NWI Classification		N/A	
		Soils are Present: X lrology is Present:	Dis	turbed Parai	neters (see Ren neters (see Ren	narks):		Local Reli Landfor		NONE SLOPE	
	Sampled Area is v				rology (see Rer			Slope	-	1-2	
Hydrology Parameter:	Sampleu Area is v	iunn a weuanu.	Atypical	_iiiiate/11yu	ology (see Kei	nai ks).		Slope	70.	1-2	
fryurology Farameter.	р	rimary Indicators:				<u> </u>		S	condary Indic	ators	
		intery indicators.						Surface Soil		<i>u</i> 1015.	
Surface Water (A1)		Water Stained L	eaves (B9)				-		etated Concave	e Surface (B8	5)
High Water Table (A2)		Aquatic Fauna (-	Drainage Pat	terns (B10)		
Saturation (A3)		True Aquatic Pl					-	Moss Trim L			
Water Marks (B1)		Hydrogen Sulfic					-		Water Table (C	(2)	
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (C3)		-	Crayfish Bur			
Drift Deposits (B3)		Presence of Red		G-:1- (CC)			-		sible on Aerial)
Algal Mat or Crust (B4) Iron Deposits (B5)		Recent Iron Red Thin Muck Surf		Solis (C6)					ressed Plants (Position (D2)	D1)	
Inundation Visible on Aerial	magery (B7)	Other	ace(C7)				_	Shallow Aqu			
	inagery (D7)	Other					-		aphic Relief (D	(4)	
							-	FAC-Neutral		.,	
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER NO				
	Surface Water:										
	Water Table:										
Vegetation Resources	Saturated soil:										
Vegetation Parameter:											
Г	Oominant Species	Stratur	n IND	%		Non-I	Dominant Specie	s	Stratum	IND	%
	Ulmus rubra	Tree	FAC	35			Lymus hystrix		Herbaceous	UPL	10
	Acer negundo	Tree	FAC	20		Boeh	meria cylindrica		Herbaceous	FACW	5
	Ulmus rubra	Sapling		5							
Dista	Rosa multiflora	Shrub		10							
	nthelium clandestinum rostegium vimineum	Herbaceo		30 30							
	onicera japonica	Vine	FAC	10							
		l]
	% Dominant speci	es FAC or wetter: 86%					Pr	evalence Index:	3.2		
		OR STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT LIS	т			d using all species p		-	
Rapid Test for Hy	drophytic Vegetation:			Remarks:		ION PA	ARAMETER M		esem.		
	ominance Test >50%:	X									
	alence Index is < 3.0:										
Morph	nological Adaptations:										
-	drophytic Vegetation:										
Soil Parameter:											
		Matrix			P	Redox F	eatures				
Depth (inches)		Moist)	%	Colo	or (Moist)	%	Туре	Loc		Texture	
0-8	5YF		100							CLAY LO	
8-20	5YR	. 4/4	95	2.5	YR 3/6	5	С	М		CLAY LO	AM
ļ						+					
						+ +					
Hydric Soil Indicators:			1	I		┙┛┙					
nyune son indicators:								I	dicators for Pr	oblamatia II.	dric Soils
Histosol (A1)		Sandy Mucky Minera	al (S1)		Depleted Ma	atrix (E2	0	m	2cm Muck		and sous
Histosof (A1) Histic Epipedon (A2)		Sandy Gleyed Matrix			Redox Dark					(A10) ie Redox (A1	6)
Black Histic (A3)		Sandy Redox (S5)	(~ .)		Depleted Da			-		Floodplain So	
Hydrogen Sulfide (A4)		Stripped Matrix (S6)			Redox Depre			-	X Red Parent		
Stratified Layers (A5)		Dark Surface (S7)			Iron-Mangar	iese Ma	sses (F12)			ow Dark Surf	
2 cm Muck (A10)		Polyvalue Below Sur			Umbric Surf				Other		
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S			Piedmont Flo	oodplair	a Soils (F19)				
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)								
	•			I							
Restrictive Layer (If Observed	1)			Remarks:	SOIL PARA						
	T-			reemarks.	SOILTAR	AMETT	EK MEL.				
	Type: Depth (inches):			remarks.	SOLTAR	AMETT	EK MEI.				

Oc.	Project:	ROUTE PARSONS TRANS	E 28 CORRIDO		NC		Section/T.	ownshin/Dongo		NI/A		
() Stantec		AKSONS TRAINS						ownship/Range: .RR or MLRA):		N/A LRR S		
9	State:		/IRGINIA					Site Latitude:		38.795940)°	
	Investigator(s):		I. MANN					Site Longitude:		-77.458450		
	Date:		5/27/2018				Soil N	Aap Unit Name:	ROWL	AND SILT LOAM,	0-2% SLOPES	s
a												
Summary of Findings:		D			ND NEAR FL		,			NT/ A		
	Hydrophytic Vegetation is Hydric Soils are		Die		Normal Circums ameters (see Ren			NWI Classifica Local R		N/A CONCAV	F	
	Wetland Hydrology is		Probl	ematic Par	ameters (see Ren	narks):		Local R		FLAT	L	
	Sampled Area is within a V				drology (see Rer				oe %:	0-1		
Hydrology Parameter:	^		••					*				
	Primary In	idicators:							Secondary Indi	cators:		
									il Cracks (B6)			
Surface Water (A1)	-	Water Stained I							egetated Concav	ve Surface (B8)	
High Water Table (A2) X Saturation (A3)	-	Aquatic Fauna (True Aquatic Pl						X Drainage F	Lines (B10)			
Water Marks (B1)	-	Hydrogen Sulfi							n Water Table (C2)		
Sediment Deposits (B2)	-	Oxidized Rhizo		g Roots (C	3)		•		urrows (C8)	(22)		
Drift Deposits (B3)		Presence of Rec						Saturation	Visible on Aeria	al Imagery (C9)	
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6)					Stressed Plants			
Iron Deposits (B5)		Thin Muck Surf	ace (C7)						ic Position (D2)			
Inundation Visible on Aerial	Imagery (B7)	Other					•		quitard (D3)	D4)		
								X FAC-Neut	graphic Relief (I ral Test (D5)	D4)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER M		lai lest (D5)			
	Surface Water:											
	Water Table:											
	Saturated soil: 1			1								
Vegetation Parameter:												
	Dominant Species	Stratu	n IND	%		Non-I	Dominant Speci	es	Stratum	IND	%	
	Rosa multiflora	FACU	10			sicaria sagittata		Herbaceous	OBL	10		
	anthelium clandestinum	ous FAC	25									
	Scirpus atrovirens	Herbace		25								
	Carex vulpinoidea	Herbaceo	ous OBL	25								
	% Dominant species FAC of							evalence Index:		_		
	NOTE: SPECIES INDICATOR STATUS	ACCORDING TO 2016 N	ATIONAL WETLA					ed using all specie:	s present.			
	ydrophytic Vegetation:			Remarks:	VEGETAT	ION PA	ARAMETER M	ET.				
	Dominance Test >50%: X											
	valence Index is ≤ 3.0 : X											
1	hological Adaptations:											
Soil Parameter:	ydrophytic Vegetation:			I								
Son Furantiteter		Matrix		I	R	Redox F	eatures					
Depth (inches)	Color (Moist)		%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-8	5YR 4/2		85		5YR 4/6	15	C	M		CLAY LOA		
8-20	5YR 6/1		80		.5YR 5/8	20	С	М		CLAY LOA		
Hydric Soil Indicators:									I		1.1. 0. 11	
		C d M 1 M:	-1 (61)		X Depleted Ma				Indicators for P		dric Soils	
Histosol (A1) Histic Epipedon (A2)		Sandy Mucky Miner Sandy Gleyed Matrix		_	<u>A</u> Depleted Ma Redox Dark				2cm Muck	k (A10) irie Redox (A1	6)	
Black Histic (A3)		Sandy Redox (S5)	(34)	-	Depleted Da					Floodplain Soi		
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		_	Redox Depre					t Material (TF		
Stratified Layers (A5)		Dark Surface (S7)		_	Iron-Mangar					low Dark Surfa)
2 cm Muck (A10)		Polyvalue Below Su	face (S8)	_	Umbric Surf				Other		,	
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S	59)	_	Piedmont Flo	oodplair	n Soils (F19)					
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)									
	1				0.077							
Restrictive Layer (If Observe				Remarks:	SOIL PARA	AMETE	SK MET.					
	Type: Depth (inches):		-									
	Depui (inclies).											

() Ctantos	Project: Applicant:	OR GROUP	INC.		Section/T	ownship/Range	:	N/A				
Stantec	City/County:	PRINCE WILLIAM COUNTY, CITY OF M						RR or MLRA		LRR S	S	
•	State:	I	/IRGINIA					Site Latitude	×:	38.79594	40°	
	Investigator(s):		J. MANN					Site Longitude		-77.4584	.50°	
	Date:		6/26/2018				Soil N	Aap Unit Name	PEN	IN SILT LOAM, 7	-15% SLOPE	ŝS
Summary of Findings:			LIDI /	ND IN CI	WALE NORTH	OF "IN	AL " LINE.					
Summary of Findings:	Hudrophytic V	Vegetation is Present: X	UPLA		Normal Circums		,	NWI Classific	ation.	N/A		
		ric Soils are Present:	Di		ameters (see Rer			Local F		CONCA		
		Hydrology is Present: X	Probl	ematic Par	ameters (see Rer	narks):			lform:	DRAINAGE		
		s within a Wetland:			drology (see Rer			Slo	pe %:	0-1		
Hydrology Parameter:												
		Primary Indicators:							Secondary Indi	cators:		
									oil Cracks (B6)			
Surface Water (A1) High Water Table (A2)		Water Stained L							egetated Conca Patterns (B10)	ve Surface (B	.8)	
Saturation (A3)		Aquatic Fauna (True Aquatic Pl							n Lines (B16)			
Water Marks (B1)		Hydrogen Sulfic							on Water Table (C2)		
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (C	23)				Burrows (C8)	- /		
Drift Deposits (B3)		Presence of Red	luced Iron (C4)	-				Saturation	Visible on Aeria	al Imagery (C	.'9)	
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6))				Stressed Plants			
Iron Deposits (B5)		Thin Muck Surf	face (C7)						nic Position (D2)).		
Inundation Visible on Aerial	Imagery (B7)	Other							Aquitard (D3) Ographic Relief (I	D4)		
								X FAC-Neu		J4)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER M		dui Test (D5)			
·······	Surface Water:											
	Water Table:											
	Saturated soil:											
Vegetation Parameter:												
	Dominant Species	Stratur	n IND	%		Non D	ominant Speci	05	Stratum	IND	%	
· · · · · · · · · · · · · · · · · · ·	Acer negundo	Tree	FAC	15			neria cylindrica		Herbaceous	FACW	5	
Jı	niperus virginiana	Tree	FACU	15								
	rostegium vimineum	Herbaced		50								
	'inna arundinacea	Herbaced	ous FACW	25								
			I	1							I	
	% Dominant sp	ecies FAC or wetter: 75%					Pi	evalence Index	.: 2.9			
		ATOR STATUS ACCORDING TO 2016 N	NATIONAL WETLA	ND PLANT L	IST		Calculat	ed using all specie	es present.	-		
Rapid Test for H	drophytic Vegetation:			Remarks:	VEGETAT	ION PA	RAMETER M		*	-	-	
Ľ	ominance Test >50%:	X										
Pre	valence Index is ≤ 3.0 :	X										
Morp	nological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:												_
		Matrix	•			edox Fe						
Depth (inches)		or (Moist)	%	Co	lor (Moist)	%	Туре	Loc		Textur		
0-12		YR 3/3	100							CLAY LC		
12-20	5	YR 4/3	95	2	.5YR 4/6	5	С	М		CLAY LC	JAM	
Hydric Soil Indicators:												
								1	Indicators for P	roblematic H	Ivdric Soi	ls
Histosol (A1)		Sandy Mucky Miner	al (S1)		Depleted Ma	trix (F3))		2cm Mucl			
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)		Redox Dark	Surface	(F6)			irie Redox (A		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Da					Floodplain S)
Hydrogen Sulfide (A4)		Stripped Matrix (S6)	1	_	Redox Depre					nt Material (T		
Stratified Layers (A5)		Dark Surface (S7)	6 (86)	-	Iron-Mangar		. ,			llow Dark Sur	rtace (TF)	12)
2 cm Muck (A10)	(A11)	Polyvalue Below Sur		-	Umbric Surf				Other			
Depleted Below Dark Surface Thick Dark Surface (A12)	: (A11)	Thin Dark Surface (S Loamy Gleyed Matri		_	Piedmont Fl	ooupiain	50115 (F19)					
			A (1'2)									
Restrictive Layer (If Observe	1)			Remarks:	SOIL PAR	METE	R NOT MET.	I				
Resilience Euger (1) Observer	Type:				Soldink							
	Depth (inches):		-	1								
	- /											

() Chamber	Project: Applicant: PA	28 CORRIDO		IC.		Section/To	wnship/Range:	N/A			
Stantec		M COUNTY, CITY OF M						RR or MLRA):	LRR S		
	State:		IRGINIA					Site Latitude:	38.795940°		
	Investigator(s):		. MANN					Site Longitude:			
	Date:	e	5/26/2018				Soil N	Iap Unit Name:	BERMUDIAN SILT LOAM, 0-2% SLOPES		
Summary of Findings:				WETI A	ND NEAR FL	AG IM	fT₋4•				
Summary of Findings.	Hydrophytic Vegetation is P	Present: X			ormal Circumst			NWI Classificat	ion: N/A		
	Hydric Soils are P		Dis		neters (see Ren			Local Re			
	Wetland Hydrology is P		Probl	ematic Para	neters (see Ren	narks):		Landfo			
	Sampled Area is within a We	etland: X	Atypical C	Climate/Hyd	rology (see Ren	narks):		Slope	e %: 0-1		
Hydrology Parameter:											
	Primary Ind	licators:						Secondary Indicators:			
Surface Water (A1)		Water Stained L	eaves (B0)				-	l Cracks (B6) getated Concave Surface (B8)			
High Water Table (A2)		Aquatic Fauna (-	atterns (B10)			
X Saturation (A3)		True Aquatic Pla						Moss Trim			
Water Marks (B1)		Hydrogen Sulfid							Water Table (C2)		
X Sediment Deposits (B2)		Oxidized Rhizos		g Roots (C3)		-	Crayfish Bu			
Drift Deposits (B3)	-	Presence of Red Recent Iron Red		Soils (C6)			-		Visible on Aerial Imagery (C9) Stressed Plants (D1)		
Algal Mat or Crust (B4) Iron Deposits (B5)		Thin Muck Surf		Solis (C6)			-	X Geomorphic			
Inundation Visible on Aerial	Imagery (B7)	Other					-	Shallow Aq			
							-	Microtopog	raphic Relief (D4)		
							-	X FAC-Neutra			
Water Depths (inches):	Seefers Wet			Remarks:	HYDROLO	GY PA	ARAMETER M	ET.			
1	Surface Water: Water Table:										
	Saturated soil: 1										
Vegetation Parameter:											
I	Dominant Species	Stratun		%			Dominant Specie	28	Stratum IND %		
	Acer negundo Acer rubrum	Tree Sapling	FAC FAC	15 5		Cin	na arundinacea		Herbaceous FACW 15		
	Rosa multiflora	Shrub	FACU	10							
	Acer negundo	Shrub	FAC	5							
	chium arundinaceum	Herbaceo		35							
Ba	ehmeria cylindrica	Herbaceo	us FACW	30							
	% Dominant species FAC or	wetter: 83%					Pr	evalence Index:	2.1		
	NOTE: SPECIES INDICATOR STATUS A	ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT LIS	т		Calculate	d using all species	present.		
	drophytic Vegetation:			Remarks:	VEGETAT	ION PA	ARAMETER M	ET.			
	ominance Test >50%: X										
	valence Index is ≤ 3.0 : X										
1	nological Adaptations:										
Soil Parameter:	drophytic Vegetation:										
		Matrix		Γ	F	Redox F	eatures				
Depth (inches)	Color (Moist)		%	Colo	r (Moist)	%	Туре	Loc	Texture		
0-6	5YR 4/2		80	5	YR 4/4	20	Ĉ	М	SILTY CLAY LOAM		
6-20	5YR 4/3		90	5	YR 4/6	10	С	М	CLAY LOAM		
↓ ↓				I		+					
├ ──── ├				ł		+					
Hydric Soil Indicators:				I		1					
Tyune bon mulcators.								1	ndicators for Problematic Hydric Soils		
Histosol (A1)	S	andy Mucky Minera	al (S1)	Х	Depleted Ma	atrix (F3	3)		2cm Muck (A10)		
Histic Epipedon (A2)		andy Gleyed Matrix			Redox Dark			-	Coast Prairie Redox (A16)		
Black Histic (A3)						rk Surfa	ace (F7)		Piedmont Floodplain Soils (F19)		
Hydrogen Sulfide (A4)						essions			Red Parent Material (TF2)		
Stratified Layers (A5)		ark Surface (S7)			U	anese Masses (F12)		-	Very Shallow Dark Surface (TF12)		
2 cm Muck (A10)		olyvalue Below Sur		Umbric Surface (F13)				-	Other		
Depleted Below Dark Surface		hin Dark Surface (S		Piedmont Floodplain Soils (F19)							
	Thick Dark Surface (A12) Loamy Gleyed Matrix (F2)										
Restrictive Laver (If Observe	1)			Remarks.	SOIL PARA	AMETE	ER MET.				
Restrictive Layer (If Observed	d) Type:			Remarks:	SOIL PARA	AMETI	ER MET.				

	Project: ROUTE 28 CORRIDOR												
() Stantec	Applicant:		PARSONS TRANSPORTATION GROUP INC. Section/Township/Range: N/A										
Jotantee		RINCE WILLIAM COUNTY, CITY OF M		SAS PARK &	FAIRFAX COUNTY		Subregion (L	RR or MLRA):		LRR S			
	State:		/IRGINIA				-	Site Latitude:		38.79594			
	Investigator(s):		J. MANN				_	Site Longitude:		-77.4584	50°		
	Date:	(6/26/2018				Soil M	lap Unit Name:	PANOR	RAMA SILT LOAN	M, 2-7% SLOPES		
~													
Summary of Findings:			UP		SWALE NEAR		-						
		getation is Present: X			Normal Circumst			NWI Classifica		N/A			
		c Soils are Present:	Dis	sturbed Par	rameters (see Rem	arks):		Local Re		CONCA			
	Sampled Area is	drology is Present:			rameters (see Rem			Landf		1-2	WAI		
	Sampled Area is	within a wettand:	Atypical	_nmate/Hy	ydrology (see Rem	iarks):		Slop	e %:	1-2			
Hydrology Parameter:							1		<u> </u>	• ,			
	1	Primary Indicators:						Secondary Indicators: Surface Soil Cracks (B6)					
Surface Water (A1)		Water Stained L	anvas (P 0)						egetated Concav	va Surfaca (P	8)		
High Water Table (A2)		Aquatic Fauna (-		atterns (B10)	ve Surface (B	0)		
Saturation (A3)		True Aquatic Pl					-		Lines (B16)				
Water Marks (B1)		Hydrogen Sulfic					-		Water Table (C2)			
Sediment Deposits (B2)		Oxidized Rhizo		g Roots (O	23)		-		urrows (C8)	<i>.</i>			
Drift Deposits (B3)		Presence of Red					-	Saturation	Visible on Aeria	al Imagery (C	9)		
Algal Mat or Crust (B4)		Recent Iron Rec	luction in Tilled	Soils (C6	i)			Stunted or	Stressed Plants	(D1)			
Iron Deposits (B5)		Thin Muck Surf	face (C7)					X Geomorphi	c Position (D2)				
Inundation Visible on Aerial	Imagery (B7)	Other					_		quitard (D3)				
							-		graphic Relief (I	D4)			
				D :		011 -			al Test (D5)				
Water Depths (inches):	Courfe on W.			Remarks	: HYDROLO	GY PA	ARAMETER NC	T MET.					
	Surface Water:			1									
	Water Table: Saturated soil:			1									
Vagatation Donomaton	Saturated soll:												
Vegetation Parameter:													
	Dominant Species	Stratur	n IND	%		Non-	Dominant Specie	s	Stratum	IND	%		
	Quercus bicolor	Tree	FACW	20			agus grandifolia	~	Tree	FACU	15		
Pi	atanus occidentalis	Tree	FACW	20		Q	Quercus stellata		Tree	UPL	15		
	Asimina triloba	Sapling		15			Quercus pagoda		Tree	FACW	10		
	Lonicera maakii	Shrub		15			iperus virginiana		Sapling	FACU	5		
	Berberis vulgaris Ligustrum sinense	Shrub		15 10			Carya glabra Acer rubrum		Sapling	FACU FAC	5 5		
	Asimina triloba	Shrub		10			Acer rubrum		Sapling	FAC	5		
Mia	rostegium vimineum	Herbaceo	-	20									
	Lonicera japonica	Vine	FAC	15									
											1		
		ies FAC or wetter: 67%					Pre	evalence Index:	3.3	_			
		OR STATUS ACCORDING TO 2016 N	NATIONAL WETLA					d using all species	present.				
	ydrophytic Vegetation:			Remarks	: VEGETATI	ON P.	ARAMETER M	ET.					
	Oominance Test >50%:	X											
Pre	valence Index is ≤ 3.0 :												
Morp	hological Adaptations:												
	ydrophytic Vegetation:												
Soil Parameter:				-			_						
		Matrix					Features						
Depth (inches)		(Moist)	%	Co	olor (Moist)	%	Туре	Loc		Textur			
0-3		R 3/3	100							CLAY LO			
3-20	2.5Y	R 4/4	100							CLAY LO	AM		
Undrig Soil Indigatory													
Hydric Soil Indicators:								1	In diantona fan D	nahlamatia U	andain Caila		
Historol (A1)	Histosol (A1) Sandy Mucky Mineral (S1)						2)		Indicators for Problematic Hydric Soils				
Histosof (A1) Histo Epipedon (A2)		Sandy Gleyed Matrix		-	Depleted Mat Redox Dark S				2cm Muck (A10) Coast Prairie Redox (A16)				
Black Histic (A3)		Sandy Redox (S5)	(04)	-	Depleted Dar				Coast Prairie Redox (A16) Piedmont Eloodplain Soils (E19)				
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		-	Redox Depre				Piedmont Floodplain Soils (F19) Red Parent Material (TF2)				
Stratified Layers (A5)							asses (F12)			low Dark Sur	,		
2 cm Muck (A10)		Polyvalue Below Sur	rface (S8)	-	Umbric Surfa				Other		. /		
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface (S		-			in Soils (F19)						
Thick Dark Surface (A12)	. ,	Loamy Gleyed Matri		-		1							
Restrictive Layer (If Observe	d)			Remarks: SOIL PARAMETER NOT MET.									
	Type:		_	1									
	Depth (inches):												

See: URCUNA See Lange See Lange <th>Stantec</th> <th></th> <th>PARSONS TRANS PRINCE WILLIAM COUNTY, CITY OF M</th> <th>IANASSAS, MANAS</th> <th>GROUP</th> <th></th> <th></th> <th></th> <th>ownship/Range RR or MLRA)</th> <th>:</th> <th>N/A LRR S</th> <th></th> <th></th>	Stantec		PARSONS TRANS PRINCE WILLIAM COUNTY, CITY OF M	IANASSAS, MANAS	GROUP				ownship/Range RR or MLRA)	:	N/A LRR S			
Table Children Solution Construction Construction Solution High Wate Call Solution Netted Construction Netted C		State:							Site Latitude					
Standard of Tading: Iterative result Iterative result Iterative result Iterative result Mainter of Tading: Iterative result Mainter of tables Mainter of tables Mainter of tables Total Debugs: Name Mainter of tables Mainter of tables Mainter of tables Mainter of tables Total Debugs: Name Mainter of tables Mainter of tables Mainter of tables Mainter of tables Total Debugs: Name Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables Mainter of tables <									•				5% SLOPES	
Normal Circumsters State Circumsters Normal Circumst									1					
Market Status Description of the marks :: Lad Ideit DOK/ANK Typelar Taw within a Yachani. Appind Yana Yiking i cor Nemaks :: Start Status Start Status Typelar Taw within a Yachani. Appind Yana Yiking i cor Nemaks :: Start Status Start Status Typelar Taw within a Yachani. Ware Name (A) Start Status Start Status Start Status Typelar Yachani (A) Ware Name (A) Ware Name (A) Status	Summary of Findings:	Hydrophytic V	agatation is Descants V	UP	LAND II			-	NWI Classifia	ation	NI/A			
Wetter Wetter Processor Descensible Landom Indexter Bridley Prameter Files/Indexter Second profestore Second profestore Second profestore Second profestore Second profestore Vegetaria Second profestore Second profesto				Dis	turbed Pa							/E		
Hydrolog Parameter: Frienz Judicener: Scendary Indicator: Hydrolog Parameter: Frienz Judicener: Scendary Indicator: Hydrolog Parameter: Scendary Indicator: Scendary Indicator: Hydrolog Parameter: Scendary Indicator: Scendary Indicator: Hydrolog Parameter: Scendary Indicator: Scendary Indicator: Scendary Indicator: Scendary Indicator: Scendary Indicator: Hydrolog Parameter: Scendary Indicator: Scendary Indicator: Scendary Indicator: Scendary Indicator: Scendary Indicator: Water Dayler: Scendary Indicator: None Scendary Indicator:		Wetland F	lydrology is Present:	Probl	ematic Pa	rameters (see Rem	narks):		Land	form:		WAY		
Statice Ware (1) Statice Ware (1) Statice Ware (1) Statice Ware (1) Statice Ware (1) — Age: Energi	W.L.L. D. (Sampled Area is	s within a Wetland:	Atypical 0	Climate/H	ydrology (see Rem	narks):		Sloj	pe %:	1-2			
Series Warr (A)	Hydrology Parameter:		Primary Indicators:							Secondary Indi	ators.			
Arge War (A)			1 runary indicators.											
Surface Water: Yegetation Parameter: Non-Dominant Species Non-Dominant Species Operation: Non-Dominant Species Non-Dominant Species Non-Dominant Species Non-Dominant Species Non-Dominant Species Non-Dominant Species Non-Dominant Species FAC or weater: Operation: Provedence Index: 2.0 Non-Dominant Species FAC or weater: Offere Provedence Index: 2.0 Non-Dominant species FAC or weater: Offereatures: Provedence Index: 2.0 Non-Dominant species FAC or weater: Operation: Provedence Index: 2.0	High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial	Imagery (B7)	Aquatic Fauna (True Aquatic Pl Hydrogen Sulfic Oxidized Rhizo Presence of Red Recent Iron Rec Thin Muck Surf	B13) ants (B14) le Odor (C1) spheres on Livin luced Iron (C4) luction in Tilled	Soils (Ce	5)		-	Sparsely V Drainage I Moss Trin Dry-Seaso Crayfish E Saturation Stunted or X Geomorph Shallow A Microtopo FAC-Neut	Vegetated Concav Patterns (B10) n Lines (B16) n Water Table (C Burrows (C8) Visible on Aeria Stressed Plants (ic Position (D2) quitard (D3) graphic Relief (I	22) l Imagery (C D1)			
Vectration Vectors planets Vectors planets The importance is precise in the previous in the previous is precise in the precise in the preci	Water Depths (inches):	Surface Water			Remarks	S: HYDROLO	GY PA	ARAMETER NO	OT MET.					
Vegetation Parameter: Non-Dominant Species Stratum ND % During particles Tree FACUR 23 Produce premychawice Tree FACUR 23 FACUR 23 Produce premychawice Non-Dominant Species Stratum ND % Produce premychawice Stapling FACUR 23 FACUR 23 FACUR 20 Non-Dominant Species Stratum ND % Microsogian vanitesam Stapling FACU 10 Stapling FACU 10 FACUR 20 Stapling FACU 10 FACUR 20 FACUR 20 % Dominant species FAC or wetter: 63% FAC 15 FAC 15 Image: FAC 15 FAC 15														
Bundhant Species Northum No. Non-Dominant Species Stratum NO. % Quercine publicities Tree FAC.W 33 FAC.W 53 FAC.W 33 FAC.W 33 FAC.W 33 FAC.W 53 FAC.W														
Operation prints/ Provide prints/ Without prints/form The Subject FACU FACU Subject 25 Subject With the prints/ Without prints/form Subject FACU Subject 3 Maintain trible Subject Subject 5 Microstegium vinineum Subject FACU Subject 3 Microstegium vinineum Subject Subject Pervalence lada: 2.9 With Subject Subject Subject Subject Subject Morphological Adaptations: Technological Adaptations: Subject Subject Subject Problematic Hydrophytic Vegetation: Subject Subject Subject Subject Ola 2.5YR 3/4 100 Subject Color (Moisi) Subject Huston (A1) Subject Subject Subject Subject Subject <td< td=""><td>Vegetation Parameter:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Vegetation Parameter:													
Practinus principanica The FACW 25 Spling FACW 3 Spling FACW 15 Microstegium vimineum Hebaccos FAC No FAC 15 Microstegium vimineum Hebaccos FAC No FAC 15 No FAC 16	I	Dominant Species	Stratur	n IND	%		Non-	Dominant Specie	es	Stratum	IND	%		
Image: Section of the procession of the processio														
Saping FACU 5 Vibromm promptions Saping Asima relation Saping Asima relation Saping Asima relation Saping Asima relation Saping Saping FACU Barbacos FACU Superior FACU Barbacos FACU	Fra													
Animian ritchen Sapling FAC 5 Micreare maaki Sapling FAC 5 Micreare gium vinineum FAC 15 Herbaccous FAC 15 With readegium vinineum FAC 15 Sub Dominant species FAC or wetter: 63% Prevalence Index: 2.9 NUE: SPECIES INDECODE STATES ACCORDING: TO 2016 NATIONAL WETAND PLAYE LIST Calculated using all species process. Rapid Test of Hydrophytic Vegetation: Northophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Problematic Hydrophytic Vegetation: Northophytic Vegetation: Northophytic Vegetation: Inductors for Problematic Hydrophytic Vegetation: Sol Parameter: Matrix Reload Test Strophytic Vegetation: Inductors for Problematic Hydrophytic Vegetation: Hydric Soll Indicators: Indicators for Scholand Marks (10) Color (Mask) % Color (Mask) 2.0 Hydric Soll Indicators: Indicators (11) Sandy Macky Mineral (S1) Becland Marks (16) Depleted Marks (17) Depleted Marks (10) Depleted Marks (10) Depleted Marks (17) <td></td> <td>xinus pennsylvanica</td> <td></td>		xinus pennsylvanica												
Lonicera mankli Shnub UPL 15 Microstegiam vinineum FAC 15 Herbaceous FAC 15 Nucrostegiam vinineum FAC 100 Provalence Index is 20 FAC 100 Problemicit Phylophylox Vegetation: Fac 100 Problemicit Phylophylox Vegetation: Fac 100 Classific (7) Problemicit Phylophylox Vegetation: Fac 100 Classific (7) Pohlemicit Phylophylox Vegetation:	Vil													
Microstegium vinineum Herbaccous FAC 15 Microstegium vinineum Galaxies Prevalence Index: 2.9 NOTE: SPECIES NOLCIVOR STATUS ACCORDENS to 3016 NATIONAL WETLAD PLAYT LIST Calculated using all grein prevaleu. Dominance Test 5206: X Prevalence Index: 2.9 Norphological Adaptingtinos: Prevalence Index is § 3.0 X Prevalence Index is § 3.0 Sol Parameter: Matrix Refox Features: Tosture Pedph funches) Color (Meish % Color (Meish % Type 0.10 2.5 YR 34 100 Color (Meish % Color (Meish % 10.20 2.5 YR 34 100 Color (Meish % Color (Meish % Histic G30 Sandy Gleyed Matrix (S1) Back Linkis (A3) Sandy Macky Mineral (S1) Back Adu Dir Histic G1 Sandy Gleyed Matrix (S5) Depeleted Matrix (F3) <td></td>														
Calculated using all species present. Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Dominance Test >50%: Problematic Hydrophytic Vegetation: Problematic Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Soil Parameter: Matrix Redox Features Texture Doph (inches) Color (Moist) % Color (Moist) % Type Loc Texture On-10 2.5YR 3/4 100 Classical Classical Classical Texture Hydric Soil Indicators: Indicators for Problematic Hydric Soils % Classical Indicators for Problematic Hydric Soils Histosol (A1) Sandy Rucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils 2cm Muck (A10) Histosol (A1) Sandy Rucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils Stratified Layers (A5) Dark Surface (S7) Redox Depressions (F8) Output Material (F12) Output Surface (F13) Depleted Dark Surface (F13) Depleted Dark Surface (F13) Depleted Matrix (F2)														
Calculated using all species present. Calculated using all species present. Rapid Test for Hydrophytic Vegetation: Dominance Test >50%: Problematic Hydrophytic Vegetation: Problematic Hydrophytic Vegetation: Remarks: VEGETATION PARAMETER MET. Soil Parameter: Matrix Redox Features Texture Doph (inches) Color (Moist) % Color (Moist) % Type Loc Texture On-10 2.5YR 3/4 100 Classical Classical Classical Texture Hydric Soil Indicators: Indicators for Problematic Hydric Soils % Classical Indicators for Problematic Hydric Soils Histosol (A1) Sandy Rucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils 2cm Muck (A10) Histosol (A1) Sandy Rucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils Stratified Layers (A5) Dark Surface (S7) Redox Depressions (F8) Output Material (F12) Output Surface (F13) Depleted Dark Surface (F13) Depleted Dark Surface (F13) Depleted Matrix (F2)														
Rapid Test for Hydrophytic Vegetation: Dominance Test >50%: X Norphological Adaptations: Problematic Hydrophytic Vegetation: Soil Parameter: Matrix Redox Features Other Moist) % Other Moist) % Other Moist) % Other Moist) % Other Moist) % Color (Moist) % Depth (inches) Color (Moist) % % <td></td> <td>% Dominant spe</td> <td>ecies FAC or wetter: 63%</td> <td></td> <td></td> <td></td> <td></td> <td>Pr</td> <td>evalence Index</td> <td>: 2.9</td> <td>_</td> <td></td> <td></td>		% Dominant spe	ecies FAC or wetter: 63%					Pr	evalence Index	: 2.9	_			
Dominance Test >50%: X Prevalence Index is < 3.0:			TOR STATUS ACCORDING TO 2016 N	ATIONAL WETLA						es present.				
Matrix Redox Features Depth (inches) Color (Moist) % Color (Moist) % Type Loc Texture 0-10 2.5YR 3/4 100 CLAY CLAY CLAY 10-20 2.5YR 4/4 100 CLAY LOAM CLAY LOAM Interval Interval Interval CLAY LOAM Interval Interval Interval Interval Histosol (A1) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils Histosol (A1) Sandy Gleyed Matrix (S4) Redox Dark Surface (F7) Indicators for Problematic Hydric Soils Black Histic (A3) Sandy Redox (S5) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) Hydrogen Suffide (A4) Stripped Matrix (S6) Redox Dark Surface (F7) Red Parent Matria (TF2) Stratified Layers (A5) Dark Surface (S7) Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) Polyvalue Below Surface (S8) Umbric Surface (F13) Other Depleted Below Dark Surface (A12) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Other Restrictive Layer (If	E Pre Morp Problematic H	pominance Test >50%: valence Index is \leq 3.0: hological Adaptations:			Remarks	S: VEGETATI	ON PA	ARAMETER M	ET.					
Depth (inches) Color (Moist) % Color (Moist) % Type Loc Texture 0-10 2.5YR 3/4 100 CLAY CLAY CLAY 10-20 2.5YR 4/4 100 CLAY CLAY 10-20 2.5YR 4/4 100 CLAY CLAY			Matrix		1	R	edox F	Features					_	
10-20 2.5YR 4/4 100 CLAY LOAM Image: Constraint of the second secon	Depth (inches)		r (Moist)		C				Loc		Textur	9		
Hydric Soil Indicators: Histosol (A1) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils Histosol (A2) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Coast Pariai Redox (A10) Black Histic (A3) Sandy Redox (S5) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) Hydrogen Sulfide (A4) Stripped Matrix (S6) Redox Depressions (F8) Red Parent Material (TF2) Stratified Layers (A5) Dark Surface (S7) Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19) Other Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER NOT MET. Parent Material														
Histosol (A1) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Sandy Mucky Mineral (S1) Depleted Matrix (F3) 2cm Muck (A10) Black Histic (A3) Sandy Redox (S5) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) Hydrogen Sulfide (A4) Stripped Matrix (S6) Redox Depressions (F8) Red Parent Material (TF2) Stratified Layers (A5) Dark Surface (S7) Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19) Other Restrictive Layer (If Observed) Type: Remarks: SOIL PARAMETER NOT MET. Parent Material	10-20	2.5	YK 4/4	100	<u> </u>						CLAY LO	AM		
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Type:	Histosol (A1) Sandy Mucky Mineral (S1) Depleted Matrix (F3) 2cm Muck (A Histic Epipedon (A2) Sandy Gleyed Matrix (S4) Redox Dark Surface (F6) Coast Prairie Black Histic (A3) Sandy Redox (S5) Depleted Dark Surface (F7) Piedmont FI Hydrogen Sulfide (A4) Stripped Matrix (S6) Redox Depressions (F8) Red Parent M Stratified Layers (A5) Dark Surface (S7) Iron-Manganese Masses (F12) Very Shallow 2 cm Muck (A10) Polyvalue Below Surface (S8) Umbric Surface (F13) Other Depleted Below Dark Surface (A11) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19)							(A10) rie Redox (A Floodplain So Material (TI	16) pils (F19) 72)	I				
	Restrictive Layer (If Observe	Type:		-	Remarks	SOIL PARA	MET	ER NOT MET.						

(D	Project:		E 28 CORRIDO		NC		Casting / Tanua hig / Dan and						
() Stantec	Applicant: City/County: P	PARSONS TRANS PRINCE WILLIAM COUNTY, CITY OF M					Section/Township/Range: N/A Subregion (LRR or MLRA): LRR S						
9	State:		/IRGINIA	SAS FARK &	PAIRPAX COUNTY		Subregion (1	Site Latitude:		38.795940°			
	Investigator(s):		. YOUNG					Site Longitude:		-77.458450°			
	Date:	(5/26/2018				Soil 1	Map Unit Name:		ESTORIA COMPLEX		LOPES	
Summary of Findings:	TT 1 1 (* TT		1		AND NEAR FL		-	NULL CI C		N/A			
		egetation is Present: X ic Soils are Present: X	Die		Normal Circums rameters (see Rer			NWI Classifica Local R		CONCAVE			
		ydrology is Present: X			rameters (see Rei			Landi		FLOODPLAI			
		within a Wetland: X			ydrology (see Rei			Slop	pe %:	0-1			
Hydrology Parameter:													
		Primary Indicators:							Secondary India	cators:			
Surface Water (A1)		V Water Steined I	anuas (B 0)						oil Cracks (B6)	n Surfage (DS)			
Surface Water (A1) X High Water Table (A2)		X Water Stained L Aquatic Fauna (X Drainage F	egetated Concav Patterns (B10)	e Surface (B8)			
X Saturation (A3)		True Aquatic Pl							n Lines (B16)				
Water Marks (B1)		Hydrogen Sulfic							n Water Table (C	22)			
Sediment Deposits (B2)		Oxidized Rhizo		ng Roots (O	23)				Surrows (C8)				
Drift Deposits (B3)		Presence of Red							Visible on Aeria				
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6)		Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) Shallow Aquitard (D3)						
Iron Deposits (B5) Inundation Visible on Aeria	Imagary (P7)	Thin Muck Surf Other	ace (C7)										
	Imagery (B7)	Other					Microtopographic Relief (D4)						
								X FAC-Neut		/			
Water Depths (inches):				Remarks	: HYDROLC	OGY PA	RAMETER M	ET.					
	Surface Water:			1									
	Water Table: 7 Saturated soil: 1												
Vegetation Parameter:	Saturated soli. 1												
	Dominant Species	Stratur		%		Non-l	Dominant Speci	ies	Stratum	IND	%		
	Ulmus americana Acer negundo	Tree	FACW FAC	15 20									
	Acer rubrum	Sapling Sapling		10									
	Ulmus americana	Sapling		10									
	Acer negundo	Shrub		25									
	axinus pennsylvanica	Shrub		10									
M	crostegium vimineum Carex vulpinoidea	Herbaceo		20 5									
	Vitis rotundifolia	Vine	FAC	5									
To	xicodendron radicans	Vine	FAC	5									
				-									
										<u> </u>			
	% Dominant spec	cies FAC or wetter: 100%					P	revalence Index:	: 2.6				
		TOR STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT	LIST			ed using all specie		-			
Rapid Test for H	lydrophytic Vegetation:			Remarks	: VEGETAT	ION PA	RAMETER M		1				
-	Dominance Test >50%:	X											
Pr	evalence Index is ≤ 3.0 :	X											
	phological Adaptations:												
	lydrophytic Vegetation:												
Soil Parameter:		Matain		r —	T) - J F	4		-		_		
	C-l	Matrix	0/	C.			eatures	T	-	Texture	<u> </u>	j	
Depth (inches) 0-3		r (Moist) 5Y 4/1	% 85		olor (Moist) 10YR 3/6	% 15	Type C	Loc M	╂─────	SANDY LOA	M		
3-16		YR 4/1	90		10YR 3/6	10	C	M	S/	ANDY CLAY L			
16-20		YR 4/2	97		7.5YR 5/8	3	C	M	1	CLAY LOAN			
									1				
Hydric Soil Indicators:													
			1.64						Indicators for P		ric Soils		
Histosol (A1) Histic Epipedon (A2)		Sandy Mucky Minera Sandy Gleyed Matrix		-	X Depleted Ma Redox Dark				2cm Muck (A10) Coast Prairie Redox (A16)				
Black Histic (A3)		Sandy Redox (S5)	(34)	-	Depleted Da								
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		-	Redox Depr					t Material (TF2)			
Stratified Layers (A5)		Dark Surface (S7)		-	Iron-Mangai					low Dark Surfac		.)	
2 cm Muck (A10)		Polyvalue Below Sur	face (S8)	-	Umbric Surf				Other		/		
Depleted Below Dark Surfa	ce (A11)	Thin Dark Surface (S		-	Piedmont Fl								
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)	-	-								
				1-									
Restrictive Layer (If Observ				Remarks	: SOIL PARA	AMETH	ER MET.						
	Type: Depth (inches):		-	1									
	Depui (inches):			1									

Stantec		ROUTE PARSONS TRANS IAM COUNTY, CITY OF M		GROUP I				ownship/Range: _RR or MLRA):		N/A LRR S		
	State:	١	/IRGINIA				0	Site Latitude:		38.79594		
	Investigator(s): Date:		. MANN 5/25/2018				Soil	Site Longitude: Map Unit Name:		-77.45845 ESTORIA COMPI		SLOPES
	Date.							viap Olin Ivanie.	ARCOLA-NI	23 TORIA COMPT	LA, 7-1370	SLOPES
Summary of Findings:	Undrophytic Vegetation is	Dracanti	UPLAN		AREA SOUT			NWI Classifier	tion	N/A		
	Hydrophytic Vegetation is Hydric Soils are		Dis	turbed Para	Normal Circumsta meters (see Rem	arks):		NWI Classifica Local R	elief:	CONCAV	/E	
	Wetland Hydrology is		Probl	ematic Para	meters (see Rem	arks):		Landi	-	FLAT		
Hydrology Parameter:	Sampled Area is within a V	Vetland:	Atypical C	limate/Hyd	lrology (see Rem	arks):		Slop	pe %:	0-1		
flyurology f arameter.	Primary In	ndicators:					Secondary Indicators:					
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Inon Deposits (B5) Inundation Visible on Aerial In	nagery (B7)	Water Stained L Aquatic Fauna (True Aquatic Pl Hydrogen Sulfic Oxidized Rhizor Presence of Red Recent Iron Red Thin Muck Surf Other	B13) ants (B14) le Odor (C1) spheres on Livin luced Iron (C4) luction in Tilled		3)			Sparsely V Drainage F Moss Trim Dry-Seaso Crayfish B Saturation Stunted or Geomorph Shallow A Microtopo	il Cracks (B6) egetated Concav Patterns (B10) I Lines (B16) n Water Table (C urrows (C8) Visible on Aeria Stressed Plants (ic Position (D2) quitard (D3) graphic Relief ([ral Test (D5)	22) l Imagery (CS D1)		
Water Depths (inches):							RAMETER N		tai test (D5)			
	Surface Water: Water Table:											
Vegetation Products	Saturated soil:											
Vegetation Parameter:												
	ominant Species	Stratur		% 50			Dominant Speci		Stratum	IND	% 10	
	Schedonorus arundinaceus FAC Juncus tenuis Herbaceous FAC					Ambr	osia artemisiifoli	a	Herbaceous	FACU	10	
Rapid Test for Hy	% Dominant species FAC o NOTE: SPECIES INDICATOR STATUS Irophytic Vegetation:		ATIONAL WETLA	ND PLANT LI Remarks:		ON PA		revalence Index: ed using all specie OT MET.				
Do	ominance Test >50%:											
	alence Index is ≤ 3.0 :											
	ological Adaptations: lrophytic Vegetation:											
Soil Parameter:				-								
Depth (inches)	Color (Moist)	Matrix	9/	Cal	Reference or (Moist)	edox F %	eatures	Loo		Toutow		
0-3	5YR 3/4		% 100		or (moist)	/0	Туре	Loc	(Texture GRAVELLY		
3-20	2.5YR 4/4		75	2.	5YR 4/6	25	С	М	(GRAVELLY	CLAY	
Hydric Soil Indicators:				1					1			
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surface Thick Dark Surface (A12)	al (S1) (S4) face (S8) 59) x (F2)		Depleted Mat Redox Dark S Depleted Dar Redox Depre Iron-Mangam Umbric Surfa Piedmont Flo	Surface k Surfa ssions ese Ma ce (F1	e (F6) ace (F7) (F8) asses (F12) 3)		Piedmont I X Red Parent	i (A10) rie Redox (A Floodplain Sc	16) pils (F19) 72))		
Restrictive Layer (If Observed)	Restrictive Layer (If Observed) Type: Depth (inches):						Remarks: SOIL PARAMETER MET.					

A -	Project:		28 CORRIDO							
() Stantec	Applicant:	PARSONS TRANS				TY Subregion (LRR or MLRA):				۱
Jocumeee		LLIAM COUNTY, CITY OF M		SAS PARK & F	AIRFAX COUNTY			· · · · ·	LRR	
	State:		/IRGINIA					Site Latitude:	38.7959	
	Investigator(s):		. YOUNG					te Longitude:	-77.458	
	Date:	(5/25/2018				Soil Ma	p Unit Name:	CALVERTON SILT LO	AM, 0-7% SLOPES
a										
Summary of Findings:			UPLAN		OF ORCHAR					
	Hydrophytic Vegetation				Normal Circumst			WI Classificatio		
	Hydric Soils a		Dis	sturbed Para	umeters (see Ren	narks):		Local Relie		
	Wetland Hydrology				umeters (see Ren			Landfor		
	Sampled Area is within a	Wetland:	Atypical 0	Climate/Hyc	irology (see Ren	narks):		Slope 9	%: 0-1	
Hydrology Parameter:										
	Primary	Indicators:							condary Indicators:	
								Surface Soil C		
Surface Water (A1)		Water Stained L							etated Concave Surface (I	B8)
High Water Table (A2)		Aquatic Fauna (Drainage Patt		
Saturation (A3)		True Aquatic Pl						Moss Trim Li		
Water Marks (B1)		Hydrogen Sulfic		D					Vater Table (C2)	
Sediment Deposits (B2)		Oxidized Rhizo		ig Roots (C.	3)			_Crayfish Burr		C ()
Drift Deposits (B3)		Presence of Red							sible on Aerial Imagery ((9)
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6)					ressed Plants (D1)	
Iron Deposits (B5)		Thin Muck Surf	ace (C7)					Geomorphic I		
Inundation Visible on Aerial I	magery (B7)	Other						Shallow Aqui		
									phic Relief (D4)	
Water Depths (inches):				Remarks:	HADBULO	CVDA	RAMETER NOT	FAC-Neutral	1cst (D3)	
water Depins (inches):	Surface Water:			Nemarks:	11 DKULU	GI I'A	RAMETERNUL			
	Water Table:			1						
	Saturated soil:									
Vegetation Parameter:										
D	ominant Species	Stratur	n IND	%		Non-D	Dominant Species		Stratum IND	%
	Synodon dactylon	Herbaced		35						
	Trifolium repens	Herbaceo	ous FACU	20						
							_			
	% Dominant species FAC							alence Index:	4.0	
	NOTE: SPECIES INDICATOR STAT	US ACCORDING TO 2016 N	ATIONAL WETLA					using all species pr	esent.	
	drophytic Vegetation:	_		Remarks:	VEGETATI	ION PA	RAMETER NOT	ſ MET.		
	ominance Test >50%:	_								
Prev	alence Index is ≤ 3.0 :	_								
Morph	ological Adaptations:	_								
	drophytic Vegetation:									
Soil Parameter:										
		Matrix			R	edox Fe	eatures			
Depth (inches)	Color (Moist)		%	Col	or (Moist)	%	Туре	Loc	Textu	ire
0-20	10YR 3/6		100						SANDY I	LOAM
Hydric Soil Indicators:										
								Inc	licators for Problematic	Hydric Soils
Histosol (A1)		Sandy Mucky Minera			Depleted Ma				2cm Muck (A10)	
Histic Epipedon (A2)						k Surface (F6)			Coast Prairie Redox (.	
	Black Histic (A3) Sandy Redox (S5)				Depleted Dat				Piedmont Floodplain	
	Hydrogen Sulfide (A4) Stripped Matrix (S6)					dox Depressions (F8)			Red Parent Material (
	Stratified Layers (A5) Dark Surface (S7)				Iron-Mangan				Very Shallow Dark Su	urface (TF12)
2 cm Muck (A10)		Polyvalue Below Sur							Other	
Depleted Below Dark Surface	(A11)	Thin Dark Surface (S		_	Piedmont Flo	oodplain	Soils (F19)			
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)							
Restrictive Layer (If Observed				Remarks:	SOIL PARA	METE	R NOT MET.			
	Туре:		-							
	Depth (inches):									

(D	Project:		28 CORRIDOR								
() Stantec										N/A LRR S	
9	State:		VIRGINIA	SAS FARE 0	PAIRFAX COUNT I			Site Latitude:		38.795940)°
	Investigator(s):		B. YOUNG				-	Site Longitude:		-77.45845	
	Date:	,	7/10/2018				-	fap Unit Name:	ARCOLA-N		EX, 7-15% SLOPES
							-				
Summary of Findings:		.	UPLANI	IN SWA			RVILLE ROAD;			NT/ A	
	Hydrophytic Vegetation is I Hydric Soils are I		Di	turbod Do	Normal Circumst rameters (see Ren			NWI Classificati Local Rel		N/A CONCAV	Æ
	Wetland Hydrology is l				rameters (see Ren			Local Rel		DRAINAGEV	
	Sampled Area is within a W				ydrology (see Ren			Slope	-	1-2	
Hydrology Parameter:	^										
	Primary Inc	dicators:						S	econdary Indi	cators:	
							-		Cracks (B6)		
Surface Water (A1)	-	Water Stained I					-	Sparsely Veg Drainage Pa		ve Surface (B8)
High Water Table (A2) Saturation (A3)	-	Aquatic Fauna (True Aquatic Pl					-	Moss Trim I			
Water Marks (B1)	-	Hydrogen Sulfi					-		Water Table ((2)	
	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3)							Crayfish Bu		(2)	
Drift Deposits (B3)	-	luced Iron (C4)	8(-			al Imagery (C9)	
Algal Mat or Crust (B4)	-	luction in Tilled	Soils (Ce	j)		-		tressed Plants		·	
Iron Deposits (B5)	Iron Deposits (B5) Thin Muck Surface (-	X Geomorphic			
Inundation Visible on Aerial						Shallow Aqu	uitard (D3)				
								raphic Relief (I	D4)		
				n í	INDEAL 2	OVE		FAC-Neutra	l Test (D5)		
Water Depths (inches):	Surface Water			Remarks	HYDROLO	GY PA	ARAMETER NO	DT MET.			
	Surface Water: Water Table:			1							
	Saturated soil:			1							
Vegetation Parameter:	buturited bonn			1							
	Dominant Species	Stratu		%			Dominant Specie	es	Stratum	IND	%
1	Ailanthus altissima	Tree	FACU	40		Ca	rex intumescens		Herbaceous	FACW	5
	Acer negundo Ailanthus altissima	Tree Sapling	FAC FACU	15 20							
1	Acer negundo	Sapling		15							
	Acer negundo	Shrub		15							
	Acer rubrum	Shrub		10							
Mi	crostegium vimineum	Herbaced	ous FAC	30							
	lechoma hederacea	Herbaced		30							
To:	cicodendron radicans	Vine	FAC	5							
										- I I-	
	% Dominant species FAC or	wetter: 67%					Pre	evalence Index:	3.5		
	NOTE: SPECIES INDICATOR STATUS	ACCORDING TO 2016 N	NATIONAL WETLA	ND PLANT	LIST		Calculate	d using all species	present.		
	ydrophytic Vegetation:			Remarks	: VEGETATI	ION P.	ARAMETER M	ET.			
	Dominance Test >50%: X										
	valence Index is ≤ 3.0 :										
1	hological Adaptations:										
Problematic H Soil Parameter:	ydrophytic Vegetation:										
Son Parameter:		Matrix		1	D	odov I	Features				
Depth (inches)	Color (Moist)	Watifx	%	C	olor (Moist)	%	Type	Loc		Texture	
0-1	10YR 3/3		100		bioi (Wolst)	/0	Type	Loc		LOAM	
1-12	7.5YR 4/6		100							CLAY LOA	AM
12-20	7.5YR 5/6		100							CLAY LOA	
Hydric Soil Indicators:											
						Ir	2	roblematic Hy	dric Soils		
Histosol (A1)		Sandy Mucky Miner			Depleted Ma			_	2cm Mucl		
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)	-	Redox Dark						
Black Histic (A3)		andy Redox (S5)			Depleted Da			-			
Hydrogen Sulfide (A4)						essions		-		nt Material (TF	
	Stratified Layers (A5) Dark Surface (S7)					ganese Masses (F12)				low Dark Surf	ace (1F12)
2 cm Muck (A10)		Polyvalue Below Sur							Other		
Depleted Below Dark Surface Thick Dark Surface (A12)		Thin Dark Surface (S Loamy Gleyed Matri		Piedmont Floodplain Soils (F19)							
IIICK Dark Surface (A12)	L	Joanny Gieyeu Matri	IA (F2)								
Restrictive Layer (If Observe	<i>d</i>)			Remarks	SOIL PARA	MET	ER NOT MET.	1			
	Туре:										
	Depth (inches):		-								

•	Project:		E 28 CORRIDO											
() Stantec	Applicant:	PARSONS TRANS				Section/Township/Range: N/A Subregion (LRR or MLRA): LRR S								
	City/County: State:	PRINCE WILLIAM COUNTY, CITY OF M	AANASSAS, MANAS VIRGINIA	SAS PARK &	FAIRFAX COUNTY		Subregion (LF			38.795940°				
			KILGORE					Site Latitude: Site Longitude:		-77.458450°				
	Investigator(s): Date:		6/28/2018					ap Unit Name:	ARCOLA N	ESTORIA COMPLEX				
	Dute.		0/20/2010				501111	up onit i vane.	ARCOLA-M	25TORIA COMI LEA	, 7-15% 5107125			
Summary of Findings:				UPLAN	D EAST OF "G	KE'' L	'LINE;							
	Hydrophytic V	Vegetation is Present:			Normal Circums	tances:	X	NWI Classification	on:	N/A				
		Iric Soils are Present:			ameters (see Rer			Local Reli		CONCAVE				
		Hydrology is Present:			ameters (see Rer			Landfor		SLOPE				
	Sampled Area is	s within a Wetland:	Atypical 0	Climate/Hy	drology (see Rer	narks):		Slope	%:	0-1				
Hydrology Parameter:														
		Primary Indicators:							condary India	cators:				
Surface Water (A1)		Weter Steined 1	(D 0)				-	Surface Soil						
Surface Water (A1) High Water Table (A2)		Water Stained I	. ,				Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)							
Saturation (A3)		Aquatic Fauna (Moss Trim Lines (B16)							
Water Marks (B1)			quatic Plants (B14) gen Sulfide Odor (C1)						Water Table (C	72)				
Sediment Deposits (B2)			spheres on Livir	a Poots (C	(2)		-	Crayfish Bur		-2)				
Drift Deposits (B2)		Presence of Rec		ig Roois (C	.3)		-			al Imagery (C9)				
Algal Mat or Crust (B4)			duction in Tilled	Soile (C6	\ \		-		ressed Plants (
				Sons (Co)		-							
Iron Deposits (B5)	Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Other						_		Position (D2)					
	nundation visible on Aenai imagery (B7)						-	Shallow Aqu	aphic Relief (I	24)				
	Water Danika (inches).						-	FAC-Neutral		J+)				
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO		Test (D5)					
muci Depins (menes).	Surface Water:			remarks.	IIIDKOLU									
	Water Table:			1										
	Saturated soil:													
Vegetation Parameter:														
]	Dominant Species	Stratu		%		Non-l	Dominant Species	s	Stratum	IND	%			
	Acer rubrum	Tree	FAC	25										
	Fagus grandifolia	Tree	FACU	20										
Lir	iodendron tulipifera	Tree	FACU	15										
	Quercus alba	Tree	FACU	15										
	Fagus grandifolia Acer rubrum	Sapling Sapling		20 15										
B	accharis halimifolia	Shrub		30										
	donorus arundinaceus	Herbaceo		80										
	erbesina alternifolia	Herbaced		20										
, , , , , , , , , , , , , , , , , , ,	roesina anerrajona	nerbacco	5us 1710	20										
	0/ Dominant on	becies FAC or wetter: 44%					Duo	valence Index:	3.5					
		ATOR STATUS ACCORDING TO 2016 N	NATIONAL WETLA	ND DI ANT I	ICT			d using all species p		-				
Rapid Tast for H	ydrophytic Vegetation:	TIOR STATUS ACCORDING TO 2010	VATIONAL WEILA	Remarks:		ION D	ARAMETER NO		resent.					
	Oominance Test >50%:			Kemarks.	VEGETAL	101112	ANAMETER NO	I MILL.						
		<u> </u>												
	valence Index is ≤ 3.0 :													
1	hological Adaptations:	<u> </u>												
Soil Parameter:	ydrophytic Vegetation:													
Son I arameter.		Matrix		T	E	Podov F	Features							
Depth (inches)	C-1-		0/	Ca	lor (Moist)			Tee		Toutumo				
		or (Moist)	%		0YR 4/6	%	Туре	Loc		Texture CLAY LOAN				
0-12 12-20)YR 5/8	90 90			10	C	M						
12-20	10)YR 6/8	90		0YR 4/6	10	С	IVI		CLAY LOAN	/1			
						-	-							
						-	-							
Hydric Soil Indicators:														
Hydric 3011 Indicators.								In	diagtors for D	roblematic Hydr	ria Saile			
Histosol (A1)		al (C 1)		Depleted Ma	tair (E	7)	m			ic sous				
	Histosol (A1) Sandy Mucky Mineral (Histic Epipedon (A2) Sandy Gleved Matrix (S							-	2cm Muck (A10) Coast Prairie Redox (A16)					
	Black Histic (A3) Sandy Redox (S5)					k Surface (F6)			Piedmont Floodplain Soils (F19)					
	Hydrogen Sulfide (A4) Stripped Matrix (S6)					d Dark Surface (F7)		-		t Material (TF2)				
						Depressions (F8) anganese Masses (F12)				low Dark Surface				
										ow Dark Surface	c (11·12)			
2 cm Muck (A10)	o (A11)													
Depleted Below Dark Surface	2 (A11)	Thin Dark Surface (S		Piedmont Floodplain Soils (F19)										
Thick Dark Surface (A12)		Loamy Gleyed Matri	IA (F2)											
Restrictive Layer (If Observe	4)			Remarks: SOIL PARAMETER NOT MET.										
Resilicuve Layer (1) Observe	a) Type:			ACHIALKS:	SUIL FAK	AIVIE 11	ER NOT MET.							
	Depth (inches):		-	1										
R														

Stantec	Project: Applicant: City/County: PR State: Investigator(s): Date:	PARSONS TRANS INCE WILLIAM COUNTY, CITY OF M V G.		GROUP I			Subregion (L	ownship/Range .RR or MLRA) Site Latitude Site Longitude Aap Unit Name	:	N/A LRR S 38.79594(-77.45845) DIAN SILT LOAM	0°	
Summary of Findings:	Hydric	etation is Present: X Soils are Present: X Irology is Present: X vithin a Wetland: X	Probl	N sturbed Para ematic Para	ND NEAR FLA Normal Circums ameters (see Ren ameters (see Ren drology (see Ren	tances: narks): narks):	X	NWI Classific: Local R Land Sloj	elief:	PFO1A CONCAV DRAINAGEV 1-2		
Hydrology Parameter:	p	rimary Indicators:							Secondary India	antors:		_
Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Water Depths (inches): State S		Water Stained L Aquatic Fauna (True Aquatic Pin Hydrogen Sulfic Oxidized Rhizos Presence of Red Recent Iron Red Thin Muck Surf Other	B13) ants (B14) le Odor (C1) spheres on Livin luced Iron (C4) luction in Tilled			CV PA	RAMETER M	Surface Sc Sparsely V X Drainage I X Moss Trin Dry-Seaso Crayfish B Saturation Stunted or X Geomorpt Shallow A Microtopo X FAC-Neut	bil Cracks (B6) /egetated Concav Patterns (B10) h Lines (B16) n Water Table (C Burrows (C8) Visible on Aeria Stressed Plants (ic Position (D2) .quitard (D3) graphic Relief (I	ve Surface (B8 C2) Il Imagery (C9 (D1)		
water Depins (inches).	Surface Water:			Remarks.	IIIDKOLO	0117	KAMETEK M					
	Water Table: 1 Saturated soil: 1											
Vegetation Parameter:	Suturated son. 1											_
					-						%	
Rapid Test for F		es FAC or wetter: 75%	FACU FACW FAC FAC FACW FACW OBL FAC FAC	% 30 30 20 15 30 20 15 80 5		J Sola	luncus effusus num carolinense Pi Calculat	Dominant Species Stratum IND iuncus effusus Herbaceous FACW num carolinense Herbaceous FACU Prevalence Index: 2.3 Calculated using all species present. XRAMETER MET.				
Soil Parameter:	yurophyde vegetation.											
		Matrix		~ -			eatures	_				
Depth (inches) 0-8	Color (10YI		<u>%</u> 95		or (Moist) 5YR 5/8	% 5	Type C	Loc M		Texture CLAY LOA		
8-20	7.5Y		85		5YR 5/8	15	C	M		CLAY LOA		
				ļ								
				<u> </u>								_
Hydric Soil Indicators:												
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark Surfae Thick Dark Surface (A12) Restrictive Layer (If Observ.	pipedon (A2) Sandy Gleyed Matrix (S4) Redox Dark Surface (F6) Coast Prairie Redox (A16) pipedon (A2) Sandy Redox (S5) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) n Suffide (A4) Stripped Matrix (S6) Redox Deressions (F8) X Red Parent Material (TF2) 1 Layers (A5) Dark Surface (S7) Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF12) tck (A10) Polyvalue Below Surface (S8) Umbric Surface (F13) Other Below Dark Surface (A11) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19) Other ark Surface (A12) Loamy Gleyed Matrix (F2) Soils (F19) Soils (F19) Soils (F19)						ils (F19) 2)					
Kesincuve Layer (1) Observ	Type: Depth (inches):			Nemarks:	SULL FARE	191E I I	ER MIE1.					
la contra c	· · · /			-								_

() - · · ·	Project:		ROUTE 28 CORRIDOR NS TRANSPORTATION GROUP INC. Section/Township/Range:						NT/ 4			
() Stantec	Applicant: City/County: PRING	CE WILLIAM COUNTY, CITY OF N						RR or MLRA):		N/A LRR S		
9	State:		/IRGINIA	SAS FARK & I	AIRPAA COUNTT			Site Latitude:		38.79594		
	Investigator(s):		. YOUNG				-	Site Longitude:		-77.4584		
	Date:		6/25/2018					fap Unit Name:		RAMA SILT LOAN)PFS
	Dutter		0/20/2010				-	up onit i tuno.	111101	CIMITOILT LOTE	1, 2 170 020	110
Summary of Findings:			UP	LAND EAS	ST OF CENTR	EVILI	LE ROAD;					
	Hydrophytic Veget			l	Normal Circumst	ances:	X	NWI Classificat		N/A		
		oils are Present:	Dis	sturbed Para	ameters (see Ren	narks):		Local Re		NONE		
		ology is Present:			ameters (see Ren			Landfo	-	SLOPE	<u>. </u>	
Hardensla and Daman Assoc	Sampled Area is wit	hin a Wetland:	Atypical 0	limate/Hy	drology (see Ren	narks):		Slop	e %:	0-2		
Hydrology Parameter:	Duit	nary Indicators:							Sacandary Indi	inators:		
	170	nury maicaiors.					Secondary Indicators: Surface Soil Cracks (B6)					
Surface Water (A1)		Water Stained I	Leaves (B9)				-	8)				
High Water Table (A2)		Aquatic Fauna							atterns (B10)			
Saturation (A3)		True Aquatic Pl					-		Lines (B16)			
Water Marks (B1)		Hydrogen Sulfi		D (0	2)		-		Water Table (C2)		
Sediment Deposits (B2) Drift Deposits (B3)		Oxidized Rhizo Presence of Rec		ig Roots (C	3)		-	Crayfish Bu	irrows (C8) Visible on Aeria	al Imagary (C	a)	
Algal Mat or Crust (B4)			luction in Tilled	Soils (C6)			-		Stressed Plants		")	
Iron Deposits (B5)	(B5) Thin Muck Surface (C7)						-		c Position (D2)			
Inundation Visible on Aerial	Imagery (B7)	Other					-	Shallow Aq				
									raphic Relief (I	D4)		
				1 .				FAC-Neutr	al Test (D5)			
Water Depths (inches):	Surface Water:			Remarks:	HYDROLO	GY PA	ARAMETER NO	JT MET.				
1	Water Table:	_										
	Saturated soil:	_										
Vegetation Parameter:												
	Dominant Species	Stratu		%			Dominant Specie		Stratum	IND	%	
	Acer saccharinum Celtis occidentalis	Tree	FACW FACU	35 10			inus pennsylvanico odendron radican		Shrub Vine	FACW FAC	3 5	
	Acer negundo	Saplin		5		10,400	ouchuron ruureun		vine	inc	5	
	Rosa multiflora	Shrub	FACU	15								
	Rubus argutus	Herbace		5								
	Hedera helix	Vine Vine	FACU	20								
	Lonicera japonica	vine	FAC	15								
	% Dominant species	FAC or wetter: 43%					De	evalence Index:	2.1			
		STATUS ACCORDING TO 2016	NATIONAL WETLA	ND PLANT I	IST			ed using all species		-		
Rapid Test for H	vdrophytic Vegetation:	514105 ACCORDING 10 2010	ATIONAL WEILA	Remarks:		ION P	ARAMETER NO		present.			
	ominance Test >50%:			Kemarks.	VEGETATI	0.011	ANAMETER	JI MEI.				
	valence Index is < 3.0:											
	hological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:												
		Matrix	_				Features					
Depth (inches)	Color (M		%	Col	or (Moist)	%	Туре	Loc		Textur		
0-20	5YR 3	/4	100							CLAY LO	AM	
<u>├</u> ─────							├					
Hydric Soil Indicators:							1					
<u></u>								1	Indicators for P	Problematic H	ydric Soil	s
Histosol (A1)		Sandy Mucky Miner	al (S1)		Depleted Ma	trix (F.	3)		2cm Muck (A10)			
Histic Epipedon (A2)		Sandy Gleyed Matrix	x (S4)	_	Redox Dark				Coast Prairie Redox (A16)			
Black Histic (A3)							ace (F7)	Piedmont Floodplain Soils (F19)				
Hydrogen Sulfide (A4)						essions				nt Material (Th		
	Stratified Layers (A5) Dark Surface (S7)						asses (F12)			low Dark Sur	tace (TF1	2)
2 cm Muck (A10)	A(11)	Polyvalue Below Su		-	Umbric Surfa				Other			
Depleted Below Dark Surfac Thick Dark Surface (A12)	e (A11)	Thin Dark Surface (Loamy Gleyed Matr		-	Piedmont Flo	oupiai	n 50118 (F19)					
			a (12)									
Restrictive Layer (If Observe	d)			Remarks:	SOIL PARA	MET	ER NOT MET.					
	Туре:		_									
	Depth (inches):		-									

Project: ROUTE 28 CORRIDOR Applicant: PARSONS TRANSPORTATION GROUP INC. Section/Township/Range:													
(N Stantec	Stantec Applicant: PARSONS TRANSPOR City/County: PRINCE WILLIAM COUNTY, CITY OF MANAS						Subregion (LRR or MLRA):				N/A LRR S		
	State:		IANASSAS, MANAS /IRGINIA	SAS PARK	& FAIRFAX COUNTY		Sublegion (L	Site Latitude		38.79594			
	Investigator(s):		. YOUNG					Site Longitude		-77.4584			
	Date:		6/25/2018					/lap Unit Name		SSAS SILT LOAN		ES	
								1					
Summary of Findings:				WETL	AND NEAR FLA		,						
		e Vegetation is Present: X			Normal Circums			NWI Classific		N/A			
		ydric Soils are Present: X d Hydrology is Present: X			arameters (see Rei arameters (see Rei			Local F Land		CONCA			
		a is within a Wetland: X			Iydrology (see Rei				pe %:	0-1	JWAI		
Hydrology Parameter:	Sampled Area	r is within a wethand. A	Atypical	Cinnate/1	rydrology (see Rei	narks).		510	pc /0.	0-1			
fryurology i aranteter.		Primary Indicators:							Secondary Ind	icators:			
							Surface Soil Cracks (B6)						
Surface Water (A1)		Water Stained L	Leaves (B9)				Sparsely Vegetated Concave Surface (B8)						
High Water Table (A2)		Aquatic Fauna (Patterns (B10)				
		True Aquatic Pl					-		n Lines (B16)				
		Hydrogen Sulfic		_			-		n Water Table (C2)			
		Oxidized Rhizo								11 (0	10)		
		Presence of Red		Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)									
				Soils (C	6)		-						
	(magary (P7)	rv (B7) Thin Muck Surface (C7) Other							nic Position (D2) (quitard (D3)	,			
									graphic Relief (D4)			
							-	X FAC-Neu		2.1)			
Water Depths (inches):				Remark	s: HYDROLC	OGY PA	RAMETER M		· · ·				
	Surface Water:			1									
	Water Table:												
	Saturated soil:	1											
Vegetation Parameter:													
	Interview Company Species	Stratur	n IND	%	1	Non-	Dominant Speci	PS	Stratum	IND	%		
		Tree	FAC	20			aema triphyllum		Herbaceous	FACW	3		
	Saturation (A3) True Aqua Water Marks (B1) Hydrogen Sediment Deposits (B2) Oxidized: Drift Deposits (B3) Presence of Algal Mat or Crust (B4) Recent Iro Iron Deposits (B5) Thin Muc Inundation Visible on Aerial Imagery (B7) Other <i>ation Parameter:</i> Surface Water: Mater Table: Saturated soil: Saturated soil: 1 <i>Alow Serrulata</i> Satix nigra Satix nigra S Liquidambar styraciflua S Liquidambar styraciflua S Satix nigra S Dichanthelium dichotomum He Toxicodendron radicans Parthenocissus quinquefolia % Dominant species FAC or wetter: NOTE: SPECIES INDICATOR STATUS ACCORDING TO NOTE: SPECIES INDICATOR STATUS ACCORDING TO Dominance Test >50%: Morphological Adaptations: Therealence Index is ≤ 3.0: Problematic Hydrophytic Vegetation: Problematic Hydrophytic Vegetation:						olidago rugosa		Herbaceous	FAC	3		
Liqu		Shrub Shrub		15									
Dicho		Herbaced		15 15									
		Vine	FAC	15									
		Vine	FACU	5									
	1 1 5			-									
	0/ D : /	. EAG					P		2.2				
								evalence Index		-			
		CATOR STATUS ACCORDING TO 2016 N	NATIONAL WETLA			ION D		ed using all specie	es present.				
		v		Remark	S: VEGETAT	ION PA	ARAMETER M	Е1.					
		<u> </u>											
1	• • •												
Soil Parameter:	drophytic vegetation:												
Son i arameter.		Matrix		T	г	Podov E	eatures				_		
Depth (inches)	C	olor (Moist)	%	6	color (Moist)	%	Type	Loc		Textur	-		
0-10		7.5YR 4/1	95		7.5YR 5/8	5	C	M		CLAY LC			
10-20		7.5YR 3/4	100		7.5 TR 5/6	5	č			CLAY			
Hydric Soil Indicators:													
									Indicators for F	Problematic H	lydric Soils		
Histosol (A1)	al (S1) x (S4)		X Depleted Ma	atrix (F3	3)		2cm Muc	k (A10)					
Histic Epipedon (A2)		Redox Dark					irie Redox (A						
Black Histic (A3)		Sandy Redox (S5)			Depleted Da					Floodplain S			
Hydrogen Sulfide (A4)		Stripped Matrix (S6)			Redox Depr					nt Material (T			
Stratified Layers (A5)		Dark Surface (S7)	6 (86)		Iron-Mangar		. ,			llow Dark Sur	Tace (TF12	J	
2 cm Muck (A10)	(411)	Polyvalue Below Sur			Umbric Surf				Other				
Depleted Below Dark Surface	2 (A11)	Thin Dark Surface (S		Piedmont Floodplain Soils (F19)									
Thick Dark Surface (A12)		Loamy Gleyed Matri	IX (F2)	<i>2)</i>									
Restrictive Layer (If Observed	<i>d</i>)			Remark	SOIL DAD	ARAMETER MET.							
Resilicave Layer (1) Observed	Type:			ixemark	SOLLIAN								
	Depth (inches):		-	1									
L	.F (

() Chamber	Project: Applicant:	PARSONS TRANS	E 28 CORRIDO		INC.		Section/To	wnship/Range:		N/A			
Stantec		INCE WILLIAM COUNTY, CITY OF M						RR or MLRA):		LRR S	,		
•	State:		VIRGINIA				-	Site Latitude:		38.79594	•0°		
	Investigator(s):		B. YOUNG				-	Site Longitude:		-77.45845	50°		
	Date:		6/25/2018				Soil M	lap Unit Name:	MANAS	SSAS SILT LOAM	I, 2-7% SLOPES	1	
Summary of Findings:				UPLAN	ND NEAR FLAC	- BYD	D-10:						
Summary of Findings.	Hydrophytic Veg	etation is Present:			Normal Circumst		-	NWI Classifica	tion:	N/A			
		Soils are Present:	Di	sturbed Par	ameters (see Ren	narks):		Local Re	elief:	CONCAV			
		lrology is Present:	Prob	lematic Par	ameters (see Ren	narks):		Landf		DRAINAGE	WAY		
	Sampled Area is w	ithin a Wetland:	Atypical	Climate/Hy	drology (see Ren	narks):		Slop	e %:	1-2			
Hydrology Parameter:	D	nim am In disatona.					Secondary Indicators:						
	r	rimary Indicators:							l Cracks (B6)	cators:			
Surface Water (A1)		Water Stained I	Leaves (B9)				-		egetated Concav	ve Surface (B8	8)		
High Water Table (A2)		Aquatic Fauna						Drainage P	atterns (B10)				
Saturation (A3)		True Aquatic P					-		Lines (B16)	10			
Water Marks (B1) Sediment Deposits (B2)		Hydrogen Sulfi Oxidized Rhizo	ae Odor (C1) ospheres on Livir	ng Roots (C	3)		-		Water Table (C urrows (C8)	.2)			
Drift Deposits (B2)		Presence of Rec		15 10003 (C			-		Visible on Aeria	l Imagery (C9	9)		
Algal Mat or Crust (B4)		Recent Iron Re	duction in Tilled	Soils (C6))		_	Stunted or	Stressed Plants (
Iron Deposits (B5)	Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Other						-		c Position (D2)				
Inundation Visible on Aerial	Imagery (B7)					-	Shallow Ad		240				
								graphic Relief (I al Test (D5)	J+)				
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO						
* ******	Surface Water:												
	Water Table:												
Vegetation Parameter:	Saturated soil:			1									
vegetation rarameter:													
I	Dominant Species	Stratu	m IND	%				es	Stratum	IND	%		
	ilanthus altissima	Tree		25					Sapling	FAC	5		
	ilanthus altissima uidambar styraciflua	Saplin Saplin		20 10							3		
	Rosa multiflora	Shrub		5									
	olidago altissima	Herbace		10									
	nthelium dichotomum Galium aparine	Herbace		5 5									
	onicera japonica	Vine	FAC	10									
	icodendron radicans	Vine	FAC	5									
	% Dominant speci	es FAC or wetter: 44%					Pr	evalence Index:	3.6				
		R STATUS ACCORDING TO 2016	NATIONAL WETLA	ND PLANT I	IST			d using all species		-			
Rapid Test for Hy	drophytic Vegetation:			Remarks:	VEGETATI	ON P.	ARAMETER NO		presenti				
	ominance Test >50%:												
	valence Index is ≤ 3.0 :												
1	nological Adaptations:												
Soil Parameter:	drophytic Vegetation:												
Son i arameter.		Matrix		1	R	edox F	Features						
Depth (inches)	Color (%	Co	lor (Moist)	%	Туре	Loc		Texture	e		
0-20	7.511		100			, -	-71-2			CLAY LO			
			I	1		 							
 													
Hydric Soil Indicators:			I	1		1	I I						
Hyune Son Indicators.									Indicators for P	roblematic H	vdric Soils		
Histosol (A1)		al (S1)	_	Depleted Ma	trix (F.	3)		2cm Muck		,			
Histic Epipedon (A2)							e (F6)			rie Redox (A			
Black Histic (A3)							ace (F7)			Floodplain Sc			
Hydrogen Sulfide (A4) Stratified Layers (A5)	Hydrogen Sulfide (A4) Stripped Matrix (S6)					ssions				t Material (TH low Dark Surf			
2 cm Muck (A10)		Dark Surface (S7) Polyvalue Below Su	rface (S8)	-	Iron-Mangan Umbric Surfa				Other	ow Dark Suri	ace (1F12)		
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (Piedmont Floodplain Soils (F19)									
Thick Dark Surface (A12)		Loamy Gleyed Matr											
Restrictive Layer (If Observed				Remarks: SOIL PARAMETER NOT MET.									
	Type:		-	1									
L	Depth (inches):			<u> </u>									

Act	Project: PA	ROUTE RSONS TRANS	E 28 CORRIDO		INC	Section/Township/Range: N/A						
() Stantec		A COUNTY, CITY OF M										
•	State:		/IRGINIA				Ū .		-	38.795940°		
	Investigator(s):		J. MANN					Site Longitude:		-77.458450°		
	Date:		6/25/2018				Soil N	Iap Unit Name:	ALBA	NO SILT LOAM, 0-4% SI	.OPES	
Summore of Findings			WE	TI AND I		DELA	C D D C					
Summary of Findings:	Hydrophytic Vegetation is Pr	resent: X	WE		N SWALE NEA Normal Circumst			NWI Classifian	tion	N/A		
	Hydrophydre Vegetation is Pi Hydric Soils are Pi		Di		ameters (see Ren							
	Wetland Hydrology is Pr		Prob	lematic Par	ameters (see Ren	narks):						
	Sampled Area is within a We				drology (see Ren					0-1		
Hydrology Parameter:												
	Primary Indi	icators:							2	cators:		
			(T 0)							a a a a		
Surface Water (A1) High Water Table (A2)		Water Stained I Aquatic Fauna (e Surface (B8)		
X Saturation (A3)		True Aquatic Pl										
Water Marks (B1)		Hydrogen Sulfie										
Sediment Deposits (B2)		Oxidized Rhizo	spheres on Livir	ng Roots (C	23)							
Drift Deposits (B3)		Presence of Rec										
Algal Mat or Crust (B4)			luction in Tilled	Soils (C6)					(D1)		
Iron Deposits (B5) Inundation Visible on Aeria	Imagary (P7)	Thin Muck Surf	ace (C7)									
	magery (D7)	Other								04)		
										,		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER M					
	Surface Water:			1								
	Water Table: Saturated soil: 1			1								
Vegetation Parameter:	Saturated son. 1											
	Dominant Species	Stratu		%		Non-I	Dominant Speci	es	Stratum	IND %	_	
	Salix nigra Rosa multiflora	Sapling Shrub		30								
м	icrostegium vimineum	Herbace		15 35					r MLRA): LRR S 2 Latitude: 38,795940° .ongitude: 77.458450° nit Name: ALEANO SELT LOAM, 0.4% SLOPES Classification: N/A Local Relief: CONCAVE Landform: DRAINAGEWAY Slope %: 0-1 Secondary Indicators: wirface Soil Cracks (B6) parsely Vegetated Concave Surface (B8) Drainage Patterns (B10) doss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) atured or Stressed Plants (D1) Beomorphic Position (D2) atured or Stressed Plants (D1) Beomorphic Relief (D4) AC-Neutral Test (D5) Concerning Indicators: Concerning Indicators Indicators for Problematic Hydric Soils CLAY LOAM CLAY LOAM Indicators for Problematic Hydric Soils Cast Prairie Redox (A16) Cost Prairie Redox (A16) Cost Prairie Redox (A16) Red Parent Material (TF2)			
	anthelium clandestinum	Herbaced		10					Site Latitude: 38.795940° te Longitude: -77.458450° p Unit Name: ALBANO SILT LOAM, 0-4% SLOPE WI Classification: N/A Local Relief: CONCAVE Landform: DRAINAGEWAY Slope %: 0-1 Secondary Indicators: Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crafsfis Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stuted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) T. alence Index: 2.6 using all species present. T. Indicators for Problematic Hydric Soils 2cm Muck (A10) Coast Prairie Redox (A16) Piedmont Floodplain Soils (F19) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Very Shallow Dark Surface (TF12) Very Shallow Dark Surface (TF12) Comparent Material (TF2) Comparent Material (TF2) Network Surface (TF12) Network Surface (TF12) Comparent Material (TF2) Comparent Material (TF2) Compa			
	Lonicera japonica	Vine	FAC	10					ALBANO SELT LOAM, 0.4% SLOPES ification: N/A al Relief: CONCAVE andform: DRAINAGEWAY Slope %: 0-1 Secondary Indicators: e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) Trim Lines (B16) ason Water Table (C2) th Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) yrphic Position (D2) w Aquitard (D3) opographic Relief (D4) ieutral Test (D5) Stratum IND dex: 2.6 tectes present. Indicators for Problematic Hydric Soils CLAY LOAM Very Shallow Dark Surface (TF12) Very Shallow Dark Surface (TF12)			
	% Dominant species FAC or v							evalence Index:		-		
	NOTE: SPECIES INDICATOR STATUS AG	CCORDING TO 2016 N	NATIONAL WETLA						present.			
	Iydrophytic Vegetation:			Remarks	VEGETAT	ION PA	ARAMETER M	ET.				
	Dominance Test >50%: X evalence Index is ≤ 3.0 : X											
	phological Adaptations:											
	Iydrophytic Vegetation:											
Soil Parameter:												
		Matrix			R	edox F	eatures					
Depth (inches)	Color (Moist)		%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-2	7.5YR 3/2		100									
2-20	7.5YR 4/2		65	7	.5YR 4/6	35	С	М		CLAY LOAM		
				<u> </u>		╉╌┦						
				+		╉						
Hydric Soil Indicators:									1			
									Indicators for P	roblematic Hydric S	Soils	
Histosol (A1)		al (S1)	_	X Depleted Ma				2cm Muck	(A10)			
	Histic Epipedon (A2) Sandy Gleyed Matrix (S4)						e (F6)					
							ace (F7)				19)	
Hydrogen Sulfide (A4) Stratified Layers (A5)		ripped Matrix (S6) ark Surface (S7)		_	Redox Depre						(F12)	
2 cm Muck (A10)		ark Surface (S7) olyvalue Below Su	rface (S8)	-	Umbric Surfa		. ,			ow Dark Sufface (1	1 12)	
Depleted Below Dark Surfa		in Dark Surface (_	Piedmont Flo				Julei			
Thick Dark Surface (A12)		amy Gleyed Matri		_		- Jupiuli						
Restrictive Layer (If Observ				Remarks: SOIL PARAMETER MET.								
	Type:		-	1								
L	Depth (inches):			<u> </u>								

Acut	Project: Applicant: PARS	E 28 CORRIDO SPORTATION		INC		Section/To	washin/Pongo	N/A				
() Stantec	City/County: PRINCE WILLIAM CO						RR or MLRA):		LRR S			
•	State:		/IRGINIA				Ū .	Site Latitude:		38.795940	0	
	Investigator(s):		J. MANN					Site Longitude:		-77.458450)°	
	Date:	(6/25/2018				Soil N	Iap Unit Name:	ARCO	DLA SILT LOAM, 2-	7% SLOPES	,
Summour of Findings							1 IMD 7.					
Summary of Findings:	Hydrophytic Vegetation is Prese	nti	UP		SWALE NEA Normal Circums			NWI Classifica	tion	N/A		
	Hydric Soils are Prese		Di		ameters (see Re			Local R		CONCAVI	E	
	Wetland Hydrology is Prese		Probl	ematic Par	ameters (see Re	marks):		Landf		DRAINAGEW		
	Sampled Area is within a Wetlan	ıd:			drology (see Rea			Slop	e %:	1-2		
Hydrology Parameter:												
	Primary Indicate	ors:					Secondary Indicators:					
Sector and Water (A1)	T	Vater Stained I	(D 0)				-		il Cracks (B6)	Cf (D.9)		
Surface Water (A1) High Water Table (A2)		quatic Fauna (Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)					
Saturation (A3)		rue Aquatic Pl					-		Lines (B16)			
Water Marks (B1)		lydrogen Sulfie					_	Dry-Seasor	n Water Table (O	22)		
Sediment Deposits (B2)			spheres on Livir	g Roots (C	23)		-		urrows (C8)			
Drift Deposits (B3)			luced Iron (C4)				-		Visible on Aeria			
Algal Mat or Crust (B4)			luction in Tilled	Soils (C6)		-		Stressed Plants (
			ace (C7)				-		ic Position (D2) quitard (D3)			
		Julei					-		graphic Relief (I	24)		
							-		ral Test (D5)	,		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER NO					
	Surface Water:			1								
	Water Table:											
	Saturated soil:											
vegetation Parameter:												
	Dominant Species	Stratu	n IND	%		Non-D	Oominant Specie	es	Stratum	IND	%	
	Iron Deposits (B5) Thin Muck Surf Inundation Visible on Aerial Imagery (B7) Other atter Depths (inches): Surface Water: Water Table: Saturated soil: ation Parameter: Dominant Species Stratur Accer negundo Shrub Quercus velutina Shrub						num carolinense		Herbaceous	FACU	5	
	Quercus velutina Shrub											
	Robinia pseudoacacia Shrub											
				35 20								
				15								
1	lonicera japonica	Vine	FAC	5								
	% Dominant species FAC or wett							evalence Index:		-		
	NOTE: SPECIES INDICATOR STATUS ACCO	RDING TO 2016 N	NATIONAL WETLA					d using all species	s present.			
	vdrophytic Vegetation:			Remarks:	VEGETAT	ION PA	RAMETER NO	JT MET.				
	ominance Test >50%: valence Index is < 3.0:											
1	hological Adaptations: ydrophytic Vegetation:											
Soil Parameter:	diophylic vegetation.			1								
Son i urumeter:	1	Matrix		1	1	Redox Fe	eatures					
Depth (inches)	Color (Moist)	viauix	%	Co	lor (Moist)	%	Type	Loc		Texture		
0-7	7.5YR 3/2		80		5YR 4/4	20	C	M		LOAM		
7-20	7.5YR 4/3		100		0110 01	20	Ũ			CLAY LOA	М	
Hydric Soil Indicators:												
									Indicators for P		tric Soils	
Histosol (A1)		Mucky Miner		-	Depleted M Redox Dark				2cm Muck (A10)			
Histic Epipedon (A2)	Histic Epipedon (A2) Black Histic (A3) Sandy Redox (S5)						(F6) ce (F7)		Coast Prairie Redox (A16)			
	Black Histic (A3) Sandy Redox (S5) Hydrogen Sulfide (A4) Stripped Matrix (S6)					essions (Piedmont Floodplain Soils (F19)				
Stratified Layers (A5)							r8) sses (F12)	12) Red Parent Material (TF2) Very Shallow Dark Surface (TF12))
2 cm Muck (A10)		alue Below Su	rface (S8)	_	Umbric Sur			Other				
Depleted Below Dark Surfac		Dark Surface (S		Piedmont Floodplain Soils (F19)								
Thick Dark Surface (A12)		y Gleyed Matri										
Restrictive Layer (If Observe				Remarks: SOIL PARAMETER NOT MET.								
1	Type:		-									
	Type: Depth (inches):											

-	Project:		E 28 CORRIDO									
() Stantec	Applicant:	PARSONS TRANS				Section/Township/Range: N/A Subregion (LRR or MLRA): LRR S						
	City/County: State:	PRINCE WILLIAM COUNTY, CITY OF	MANASSAS, MANAS VIRGINIA	SAS PARK &	FAIRFAX COUNTY		Subregion (Li	Site Latitude:		38.795940	10	
	Investigator(s):		3. YOUNG					Site Latitude: Site Longitude:		-77.458450		
	Date:		6/25/2018					ap Unit Name:		-77.458450 DLA SILT LOAM, 2		
	Dute.		0/23/2010					up onic roune.	Alter	LA SILT LOAM, 2	770 320123	
Summary of Findings:		UPLAND IN DRAIN	AGEWAY EAS	ST OF CE	NTREVILLE R	OAD	AND NORTH O	F MAPLEWO	OD DRIVE;			
		Vegetation is Present:			Normal Circumst			NWI Classifica		N/A		
		dric Soils are Present:	Di	sturbed Par	ameters (see Ren	arks):		Local Re		CONVEX	<u> </u>	
		Hydrology is Present: is within a Wetland:			ameters (see Ren			Landf		SLOPE 1-2		
Hydrology Parameter:	Sampleu Area	is within a wettand:	Atypical	unnate/Hy	drology (see Ren	iarks).		Slop	e %.	1-2		
fryurology i arameter.		Primary Indicators:							Secondary Indi	cators:		
									l Cracks (B6)	culorsi		
Surface Water (A1)		Water Stained I	Leaves (B9)					Sparsely Ve	egetated Concav	ve Surface (B8))	
High Water Table (A2)		Aquatic Fauna					_		atterns (B10)			
Saturation (A3)		True Aquatic P					_		m Lines (B16)			
Water Marks (B1)		Hydrogen Sulfi							Water Table (0	22)		
Sediment Deposits (B2)			spheres on Livir	ng Roots (C	(3)			Crayfish Bu		11 (70)		
Drift Deposits (B3)		Presence of Re		R-11- (CC)					Visible on Aeria		1	
Algal Mat or Crust (B4)			duction in Tilled	Soils (C6))				Stressed Plants c Position (D2)	(D1)		
Iron Deposits (B5)	magary (P7)	Thin Muck Sur Other	face (C7)						uitard (D2)			
	Inundation Visible on Aerial Imagery (B7) Other						-		graphic Relief (I	7 4)		
									al Test (D5)	54)		
Water Depths (inches):				Remarks:	HYDROLO	GY PA	ARAMETER NO				-	
	Surface Water:			1								
	Water Table:			1								
The second se	Saturated soil:											
Vegetation Parameter:												
	Dominant Species	Stratu	m IND	%		Non-	Dominant Specie	s	Stratum	IND	%	
	Quercus phellos	Tree		35				-		FACU	5	
	Pinus viginiana	Tree	UPL	10		Non-Dominant Species Stratum IND Quercus rubra Sapling FACU						
	Quercus phellos	Saplin		15								
	niperus virginiana	Saplin		10								
	Pinus virginiana Quercus alba	Saplin Shrub		19 5								
II.	niperus virginiana	Shrut		5								
	Quercus phellos	Shrub		3								
	olidago altissima	Herbace		10								
	Rubus argutus	Herbace	ous FACU	5								
Parth	enocissus quinquefolia	Vine	FACU	5								
	icodendron radicans	Vine	-	5								
	Vitis rotundifolia	Vine	FAC	3								
			1		L					11		
	% Dominant st	becies FAC or wetter: 38%					Pre	valence Index:	3.8			
		ATOR STATUS ACCORDING TO 2016	NATIONAL WETLA	ND PLANT L	IST			d using all species		-		
Rapid Test for Hy	drophytic Vegetation:			Remarks:		ON P	ARAMETER NO		F			
L L L	ominance Test >50%:											
Pre	valence Index is ≤ 3.0 :											
Morp	nological Adaptations:											
	drophytic Vegetation:											
Soil Parameter:												
		Matrix	1				Features					
Depth (inches)		or (Moist)	%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-20	10	OYR 3/4	100						(GRAVELLY C	LAY	
				-								
Hydric Soil Indicators:			1				1					
, , , , , , , , , , , , , , , , , , ,								1	Indicators for P	roblematic Hyd	tric Soils	
Histosol (A1)		Sandy Mucky Miner	ral (S1)		Depleted Ma	trix (F	3)		2cm Mucl	(A10)		
Histic Epipedon (A2)		Sandy Gleyed Matri	x (S4)	_	Redox Dark					rie Redox (A1		
Black Histic (A3)		Sandy Redox (S5)		_	Depleted Dark Surface (F7) Piedmont Floodplain Soils (
Hydrogen Sulfide (A4)		Stripped Matrix (S6)	_	Redox Depre					t Material (TF2		
Stratified Layers (A5)		Dark Surface (S7)						ce (1F12)				
2 cm Muck (A10)	(411)	Polyvalue Below Surface (S8) Umbric Surface (F13) Other Thin Dark Surface (S9) Piedmont Floodplain Soils (F19)										
Depleted Below Dark Surface Thick Dark Surface (A12)	: (A11)	Thin Dark Surface (Loamy Gleyed Matr		-	riedmont Flo	odplai	m Sons (F19)					
		Loaniy Gieyeu Matr	IA (1 ⁻ 2)									
Restrictive Layer (If Observe	1)			Remarks:	SOIL PARA	MET	ER NOT MET					
Leon terre Layer (1) Observer	Type:			Remarks: SOIL PARAMETER NOT MET.								
1	Depth (inches):		-	1								
p	• • • •			-								

Action	Project:	ROUTE PARSONS TRANS	28 CORRIDO		INC		Section/T	wunshin/Panga-		N/A		
Stantec		CE WILLIAM COUNTY, CITY OF M						ownship/Range: .RR or MLRA):		LRR S		
•	State:		IRGINIA				Û, K	Site Latitude:		38.795940°		
	Investigator(s):	В	. YOUNG					Site Longitude:		-77.458450°		
	Date:	(5/25/2018				Soil N	/lap Unit Name:	ARCO	LA SILT LOAM, 2-79	% SLOPES	
Summary of Findings:			EAST OF CEN	TREVIL	LE ROAD AND	SOUT			,			
	Hydrophytic Veget		D.		Normal Circumst			NWI Classifica	N/A			
		oils are Present: ology is Present:			ameters (see Ren ameters (see Ren			Local Re Landf		NONE FLAT		
	Sampled Area is wit				drology (see Ren			Slop		0-1		
Hydrology Parameter:			J.F				1					
	Pri	nary Indicators:							Secondary India	cators:		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial In		Water Stained L Aquatic Fauna (True Aquatic Pl Hydrogen Sulfic Oxidized Rhizo Presence of Red Recent Iron Red Thin Muck Surf Other	B13) ants (B14) le Odor (C1) spheres on Livin uced Iron (C4) luction in Tilled	-				Sparsely Vo Drainage P Moss Trim Dry-Seasor Crayfish Bi Saturation Stunted or Geomorphi Shallow Ad Microtopog	I Cracks (B6) egetated Concav atterns (B10) Lines (B16) I Water Table (C Water Table (C Wisible on Aeria Stressed Plants (c Position (D2) quitard (D3) graphic Relief (I al Test (D5)	C2) 1 Imagery (C9) D1)		
Water Depths (inches):	Surface Water:			Remarks:	HYDROLO	GY PA	RAMETER NO		a 100 (20)			
	Water Table: Saturated soil:											
Vegetation Parameter:	Saturated soll.											
				% 85		Non-I	Dominant Specie	es	Stratum	IND	%	
Cy	Dominant Species Stratum Cynodon dactylon Herbaceous											
	% Dominant species	FAC or wetter: 0						minant Species Stratum IND 9				
Rapid Test for Hyd	rophytic Vegetation:	STATUS ACCORDING TO 2016 N	ATIONAL WETLA	Remarks:		ION PA	Calculate ARAMETER N	ed using all species	present.			
Do Preva Morpho	minance Test >50%: lence Index is \leq 3.0: logical Adaptations: rophytic Vegetation:			Kennikas.	VLODINI							
		Matrix		1	R	edox F	eatures					
Depth (inches)	Color (M		%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-20	10YR 1		100			,,,	-16~			CLAY LOAN	1	
				ļ		$ \downarrow \downarrow$						
<u>├</u> ─────						+						
Hydric Soil Indicators:				1		1						
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10)	Histic Epipedon (A2) Sandy Gleyed Matrix (S4) Black Histic (A3) Sandy Redox (S5) Hydrogen Sulfide (A4) Stripped Matrix (S6) Stratified Layers (A5) Dark Surface (S7) 2 cm Muck (A10) Polyvalue Below Surface (S8) Depleted Below Dark Surface (A11) Thin Dark Surface (S9)					Bepleted Matrix (F3) Indicators for Problematic Construction 2cm Muck (A10) Redox Dark Surface (F6) Coast Prairie Redox (A10) Depleted Dark Surface (F7) Piedmont Floodplain Redox Depressions (F8) Red Parent Material (Very Shallow Dark S (8) Umbric Surface (F13) Piedmont Floodplain Soils (F19) Other						
Restrictive Layer (If Observed)				Remarks:	SOIL PARA	METI	ER NOT MET.					
	Restrictive Layer (If Observed) Type: Depth (inches):											

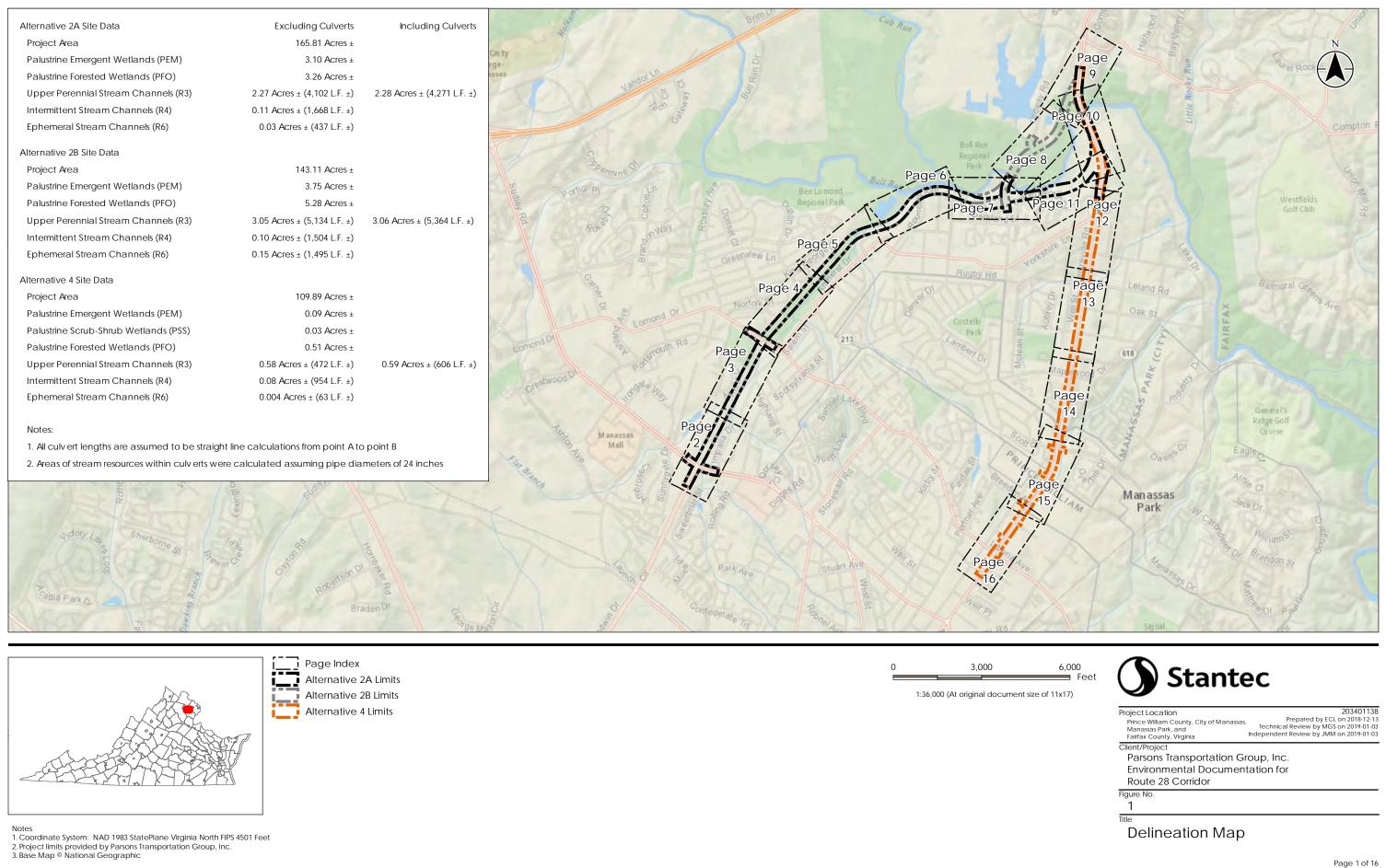
(Comment	Project: ROUTE 28 CORRIDOR Applicant: PARSONS TRANSPORTATION GROUP INC.						Section/To	N/A					
() Stantec		E WILLIAM COUNTY, CITY OF M						wnship/Range: RR or MLRA):	LRR S				
•	State:		/IRGINIA				~~~~~~~~~~~	Site Latitude:	38.795940°				
	Investigator(s):		. MANN				5	Site Longitude:	-77.458450°				
	Date:	(5/25/2018				Soil M	ap Unit Name:	ARCOLA SILT LOAM, 2-7% SLOPES				
~ ~ ~ ~													
Summary of Findings:	TT 1 1 1 1 TT 1	p	UPLAND IN				REVILLE RO	1	NT/A				
	Hydrophytic Vegetat	tion is Present: ils are Present:	Di	f turbed Para	Normal Circumst ameters (see Ren	ances:	<u>x</u>	NWI Classificatio Local Reli					
	Wetland Hydrol		Prob	lematic Para	ameters (see Ren	arks):		Local Kell					
	Sampled Area is with				irology (see Ren			Slope					
Hydrology Parameter:	<u>^</u>							*					
	Prim	ary Indicators:						Se	condary Indicators:				
							Surface Soil Cracks (B6)						
Surface Water (A1)		Water Stained I Aquatic Fauna (Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)						
High Water Table (A2) Saturation (A3)		True Aquatic Pl					-						
Water Marks (B1)		Hydrogen Sulfic					Moss Trim Lines (B16) Dry-Season Water Table (C2)						
Sediment Deposits (B2)		Oxidized Rhizo		ng Roots (C	3)		_	Crayfish Bur					
Drift Deposits (B3)		Presence of Red					_		sible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)		Recent Iron Rec		Soils (C6)			_		ressed Plants (D1)				
Iron Deposits (B5)	(D7)	Thin Muck Surf	ace (C7)				-		Position (D2)				
Inundation Visible on Aerial I	magery (B7)	Other					-	Shallow Aqu	aphic Relief (D4)				
							_	FAC-Neutral					
Water Depths (inches):				Remarks:	HYDROLO	GY PA	RAMETER NO		5 - 7				
	Surface Water:	_											
	Water Table:	_		1									
N	Saturated soil:												
Vegetation Parameter:													
D	ominant Species	Stratur	n IND	%		Non-D	Dominant Specie	s	Stratum IND %				
	Euonymus alatus	Shrub	UPL	15		Tarax	xacum officinale		Herbaceous FACU 5				
	Poa pratensis	Herbaceo	ous FACU	90									
	% Dominant species I	FAC or wetter: 0					Pre	valence Index:	4.1				
	NOTE: SPECIES INDICATOR S		ATIONAL WETLA	ND PLANT L	IST			d using all species p					
Rapid Test for Hy	drophytic Vegetation:			Remarks:	VEGETAT	ON PA	RAMETER NO						
D	ominance Test >50%:												
Prev	alence Index is ≤ 3.0 :												
	ological Adaptations:												
	drophytic Vegetation:												
Soil Parameter:		Matrix		r –	n	edox Fe	- 4						
Donth (inches)	Color (Mo		%	Cal	or (Moist)	edox Fe		Loc	Texture				
Depth (inches) 0-3	7.5YR 3/		100	Col	or (Moist)	70	Туре	Loc	LOAM				
3-20	7.5YR 3/		100						CLAY LOAM				
Hydric Soil Indicators:								7					
		0 1 14 1 16	1 (01)		D 1 / 114			In	dicators for Problematic Hydric Soils				
Histosol (A1) Histic Epipedon (A2)		Sandy Mucky Miner Sandy Gleyed Matrix		-	Depleted Ma Redox Dark				2cm Muck (A10) Coast Prairie Redox (A16)				
Black Histic (A3)		Sandy Redox (S5)	(34)		Depleted Dark			-	Piedmont Floodplain Soils (F19)				
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		_	Redox Depre			-	Red Parent Material (TF2)				
Stratified Layers (A5)		Dark Surface (S7)		_	Iron-Mangan			_	Very Shallow Dark Surface (TF12)				
2 cm Muck (A10)		Polyvalue Below Sur	face (S8)	-	Umbric Surfa				Other				
Depleted Below Dark Surface	(A11)	Thin Dark Surface (S	59)	Piedmont Floodplain Soils (F19)									
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)										
	•			n í	007	1	D NOT NOT						
Restrictive Layer (If Observed				Remarks:	SOIL PARA	METE	R NOT MET.						
	Type:			1									
L	Depth (inches):												

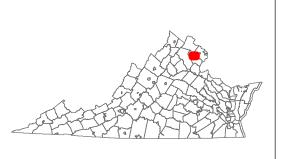
A -	Project: ROUTE 28 CORRIDOR Applicant: PARSONS TRANSPORTATION GROUP INC.												
() Stantec	Stantec Applicant: PARSONS TRANSPORT City/County: PRINCE WILLIAM COUNTY, CITY OF MANASSA							ownship/Range:		N/A LRR S			
			IANASSAS, MANAS /IRGINIA	SAS PARK &	FAIRFAX COUNTY		Subregion (1	.RR or MLRA):		38.79594			
	State:		. YOUNG					Site Latitude:		-77.4584			
	Investigator(s): Date:		5/25/2018					Site Longitude:					
	Date.	(5/25/2018				3011	Map Unit Name:	ARCOL	A SILT LOAM,	2-7% SLOF	'ES	
Summary of Findings:		UPLAND IN	SWALE EAST	OF CEN	TREVILLE RC	DAD ANI	D SOUTH OF	CONNER DRI	IVE:				
	Hydrophytic Veget				Normal Circums			NWI Classifica		N/A			
		oils are Present:	Dis		rameters (see Ren			Local Re		CONCA	VE		
		ology is Present:	Prob	lematic Par	rameters (see Rer	narks):		Landf		FLAT			
	Sampled Area is wit	hin a Wetland:			ydrology (see Rer			Slop	e %:	0-1			
Hydrology Parameter:													
	Pri	mary Indicators:					Secondary Indicators:						
							Surface Soil Cracks (B6)						
Surface Water (A1)		Water Stained L							egetated Concave	e Surface (B	8)		
High Water Table (A2) Saturation (A3)		Aquatic Fauna (True Aquatic Pl							atterns (B10)				
Water Marks (B1)		Hydrogen Sulfic					Moss Trim Lines (B16) Dry-Season Water Table (C2)						
Sediment Deposits (B2)		Oxidized Rhizos		ng Roots (O					irrows (C8)	2)			
Drift Deposits (B2)		Presence of Red		.g 10000 (1					Visible on Aerial	Imagery (C	9)		
Algal Mat or Crust (B4)		Recent Iron Red		Soils (C6	i)				Stressed Plants (,		
Iron Deposits (B5)		Thin Muck Surf	ace (C7)					Geomorphi	c Position (D2)				
Inundation Visible on Aerial	magery (B7)						Shallow Ac	uitard (D3)					
									raphic Relief (D	4)			
				D 1		GUBIE			al Test (D5)				
Water Depths (inches):	Courfe on Western			Remarks	: HYDROLO	GY PAF	RAMETER NO	OT MET.					
1	Surface Water: Water Table:	_		1									
	Saturated soil: 13												
Vegetation Parameter:	10												
	Oominant Species	Stratur		%			ominant Speci	es	Stratum	IND	%	1	
	chillea millefolium	Herbaceo		15			mex crispus		Herbaceous	FAC	5	1	
Se	lanum carolinense	Herbaceo	ous FACU	10		Trife	olium repens		Herbaceous	FACU	3	1	
												1	
												1	
												1	
												1	
												1	
												1	
	% Dominant species	s FAC or wetter: 0					Pi	evalence Index:	3.8				
	NOTE: SPECIES INDICATOR	STATUS ACCORDING TO 2016 N	ATIONAL WETLA	ND PLANT I	LIST		Calculat	ed using all species	present.				
	drophytic Vegetation:			Remarks	: VEGETAT	ION PAI	RAMETER N	OT MET.					
	ominance Test >50%:												
Pre	valence Index is ≤ 3.0 :				U	NIDENT	TELED DOMIN	JANT SPECIES	OF FESCUE P	RESENT			
	nological Adaptations:				-								
	drophytic Vegetation:												
Soil Parameter:													
	~	Matrix		~		edox Fea							
Depth (inches)	Color (M		%	Co	olor (Moist)	%	Туре	Loc		Textur			
0-10 10-20	10YR :		100						CI	CLAY LO			
10-20	5YR 3	6/4	100						51	LTY CLAY	LUAM		
Hydric Soil Indicators:													
								i i	Indicators for Pr	oblematic H	ydric Soi	ils	
Histosol (A1)		Sandy Mucky Minera	al (S1)		Depleted Ma	trix (F3)			2cm Muck				
Histic Epipedon (A2)		Sandy Gleyed Matrix	(S4)	_	Redox Dark					ie Redox (A			
Black Histic (A3)		Sandy Redox (S5)		-	Depleted Da					loodplain S)	
Hydrogen Sulfide (A4)		Stripped Matrix (S6)		-	Redox Depre					Material (T			
	Stratified Layers (A5) Dark Surface (S7)				U	ganese Masses (F12)			Very Shallo Other	ow Dark Sur	race (TF	12)	
	2 cm Muck (A10) Polyvalue Below Surface (S8)												
Depleted Below Dark Surface	e (A11)	Thin Dark Surface (S											
Thick Dark Surface (A12)		Loamy Gleyed Matri	x (F2)										
Restrictive Layer (If Observe	4)			Remarks	SOIL PADA	METEI	R NOT MET.	l					
Residence Layer (1) Observer	Type:				. JOILTAR								
	Depth (inches):			1									
P				•									

•	Project: ROUTE 28 CORI											
() Stantec	Stantec Applicant: PARSONS TRANSPOR City/County: PRINCE WILLIAM COUNTY, CITY OF MANASS							wnship/Range:		N/A		
Jocancee	· · ·			SAS PARK &	FAIRFAX COUNTY		Subregion (LI	RR or MLRA):		LRR S		
	State:		VIRGINIA							38.795940°		
	Investigator(s):		J. MANN					Site Longitude:		-77.458450		
	Date:		6/25/2018				Soil M	ap Unit Name:	ARCO	LA SILT LOAM, 2-7	7% SLOPES	ŝ
Summary of Findings:		LIDE A ND IN S'	WALE WEST	OF CENT	DEVILLE DOA	DAND	D NORTH OF BREEDEN AVENUE;					
Summary of Findings:	Undrophytic	Vegetation is Present:	WALE WEST		Normal Circums			NWI Classifica		N/A		
		ydric Soils are Present:	Di		ameters (see Ren			Local R		NONE		
		Hydrology is Present:	Proh	lomatic Par	ameters (see Ren	narke).		Locar R		FLAT		
		is within a Wetland:			drology (see Rer				e %:	0-1		
Hardensle and Demonstern	Sampleu Area	is within a wettand.	Atypical	Cilliate/11y	drology (see Rei	11ai KS).		2101	<i>je 7</i> 0.	0-1		
Hydrology Parameter:		Primary Indicators:							Secondary India	ators		
		Trimary Indicators.										
Surface Water (A1)		Water Stained I	eaves (B9)				-		il Cracks (B6) egetated Concay	e Surface (B8)		
High Water Table (A2)		Aquatic Fauna					Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16)					
Saturation (A3)		True Aquatic P										
Water Marks (B1)		Hydrogen Sulfi					-		n Water Table (C	·2)		
				- D (C	22)		-			.2)		
	Sediment Deposits (B2) Oxidized Rhizospheres on I Drift Deposits (B3) Presence of Reduced Iron (C Algal Mat or Crust (B4) Recent Iron Reduction in Ti Iron Deposits (B5) Thin Muck Surface (C7)						-		urrows (C8)	11 (20)		
							_		Visible on Aeria			
							_		Stressed Plants (D1)		
							_	Geomorph	ic Position (D2)			
Inundation Visible on Aerial	Inundation Visible on Aerial Imagery (B7) Other						_	Shallow A	quitard (D3)			
								Microtopo	graphic Relief (E	94)		
							FAC-Neut	ral Test (D5)				
Water Depths (inches):							RAMETER NO	T MET.				
	Surface Water:											
	Water Table:											
	Saturated soil:											
Vegetation Parameter:												
	D	St	. DD	0/		N I	·····		Stratum	IND	0/	
	Dominant Species Pinus strobus	Stratu Tree	m IND FACU	% 15		Non-L	Jominant Specie	nant Species		IND	%	
	Poa pratensis	Herbace		90								
	1 ou pratensis	Ticibaeco	11100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
		species FAC or wetter: 0					Pre	valence Index:	4.0	-		
	NOTE: SPECIES INDI	CATOR STATUS ACCORDING TO 2016 !	NATIONAL WETLA	ND PLANT L	IST		Calculated	d using all species	s present.			
Rapid Test for H	ydrophytic Vegetation:			Remarks:	VEGETAT	ION PA	RAMETER NO	DT MET.				
- I	Dominance Test >50%:											
Pre	valence Index is ≤ 3.0 :											
	hological Adaptations:											
1	ydrophytic Vegetation:											
Soil Parameter:	jurophytic vegetation.			1								
		Matrix		T	R	Redox F	eatures					
Depth (inches)	Ca	blor (Moist)	%	Co	lor (Moist)	%	Туре	Loc		Texture		
0-3		7.5YR 3/4	100	Cu	ioi (wioist)	/0	туре	Lot		LOAM		
						-					м	
3-20	1	7.5YR 4/6	100			-				CLAY LOA	M	
Hydric Soil Indicators:								1	L. B	1.1		
									Indicators for Pr		ric Soils	
	Histosol (A1) Sandy Mucky Mineral (S1)					atrix (F3			2cm Muck			
	Histic Epipedon (A2) Sandy Gleyed Matrix (S4)					Surface			Coast Prairie Redox (A16)			
Black Histic (A3)	Black Histic (A3) Sandy Redox (S5)					rk Surfa	ce (F7)		Piedmont Floodplain Soils (F19)			
Hydrogen Sulfide (A4)					Redox Depre	essions (F8)		Red Parent Material (TF2)			
Stratified Layers (A5)		Dark Surface (S7)		_	Iron-Mangar	iese Ma	sses (F12)		Verv Shall	ow Dark Surfac	ce (TF12	.)
2 cm Muck (A10)		Polyvalue Below Su	rface (S8)		Umbric Surf				Other			,
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface (-	Piedmont Flo							
Thick Dark Surface (A12)	(AII)	Loamy Gleyed Matr		-	r leamont Flo	ooupiali	1 JUIS (1 17)					
TIIICK Dark Sufface (A12)		Loamy Gleyed Matr	іл (Г2)									
Restrictive Layer (If Observe	<i>.</i>			Remarks:	SOIL DADA	METE	R NOT MET.					
Resilicuve Layer (1) Observe	a) Type:			ACHIAIKS:	SULL FAKE	SIVIE I E	A NOT MET.					
	Depth (inches):		-									
L	Depui (menes).			1								

Sampling Point Number: <u>43</u>

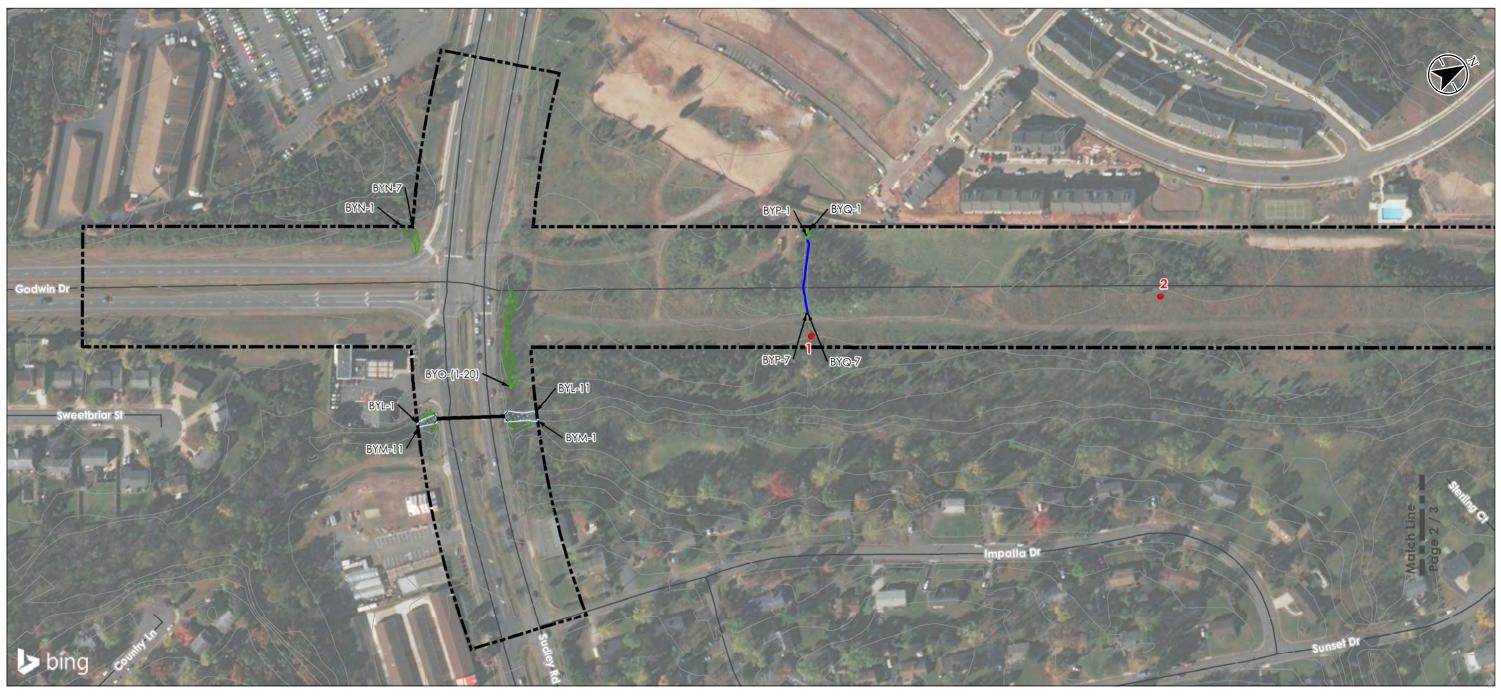
Acres 1	Project: ROUTE 28 CORRIDOR Applicant: PARSONS TRANSPORTATION GROUP IN													
() Stantec	SLATTLEC City/County: PRINCE WILLIAM COUNTY, CITY OF MANA							RR or MLRA)		LRR S				
•	State:		VIRGINIA					Site Latitude		38.79594				
	Investigator(s):		B. YOUNG					Site Longitude		-77.45845				
	Date:		6/25/2018				Soil N	/ap Unit Name	: MANAS	SSAS SILT LOAN	1, 2-7% SLC	PES		
Summary of Findings:	TT 1 1 TT		UPLA		EPRESSION NE			NULCI :C		NI/A				
	Hydrophytic Veg	Soils are Present:	Di		Normal Circums rameters (see Ren			NWI Classific Local R		N/A CONCA	VF			
		rology is Present:	Prob	lematic Pa	rameters (see Rer	narks):		Locar N		DRAINAGE				
	Sampled Area is w				ydrology (see Rer				pe %:	0-1				
Hydrology Parameter:														
	Pi	rimary Indicators:					Secondary Indicators:							
Starfanz Water (A1)		Weter Ctained	L (D0)				-		oil Cracks (B6)		0)			
Surface Water (A1) High Water Table (A2)		Water Stained Aquatic Fauna					Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)							
Saturation (A3)		True Aquatic I					-		Lines (B16)					
Water Marks (B1)		Hydrogen Sulf							n Water Table (C	.2)				
Sediment Deposits (B2)			ospheres on Livi	ng Roots (C3)				urrows (C8)					
Drift Deposits (B3)			educed Iron (C4)				-		Visible on Aeria		9)			
Algal Mat or Crust (B4) Iron Deposits (B5)		Thin Muck Su	eduction in Tilled	Soils (Ce)		-		Stressed Plants (ic Position (D2)	DI)				
Inundation Visible on Aerial	Imagery (B7)	Other	frace (C7)				-		quitard (D3)					
							-		graphic Relief (I	04)				
							-		ral Test (D5)	,				
Water Depths (inches):				Remarks	HYDROLO	GY PA	RAMETER NO	OT MET.		,		,		
	Surface Water:													
	Water Table:	_												
Vegetation Parameter:	Saturated soil:													
vegetation i arameter.														
]]	Dominant Species			%		Non-I	Dominant Specie	es	Stratum	IND	%			
	Prunus serotina													
	Rubus argutus Rumex crispus		Stratum IND % Tree FACU 35 Herbaceous FACU 15 Herbaceous FAC 5 Herbaceous FACU 5 Vine FAC 15											
Ta	waxacum officinale													
	icodendron radicans													
	0/ D	FAG (1)					P		2.7					
	% Dominant specie	es FAC or wetter: 40%		ND DI ANT	1 107			evalence Index		-				
Donid Tost for U		K STATUS ACCORDING TO 2016	NATIONAL WEIL	Remarks			Calculate RAMETER N	ed using all specie	s present.					
	vdrophytic Vegetation: ominance Test >50%:			Remarks	VEGEIAI		KANLLIEKIN	OI MEI.						
	valence Index is ≤ 3.0 :													
	hological Adaptations:													
	drophytic Vegetation:													
Soil Parameter:														
		Matrix		T	R	edox F	eatures							
Depth (inches)	Color (Moist)	%	C	olor (Moist)	%	Туре	Loc		Textur	e			
0-20	2.5Y	4/4	100						(GRAVELLY	CLAY			
												-		
						+								
Hadaia Cali Indiantana														
Hydric Soil Indicators:									Indicators for P	roblamatic H	vdric Soi	15		
Histosol (A1)		Sandy Mucky Mine	ral (S1)		Depleted Ma	trix (F3)		2cm Muck		yaric sou	13		
	Histic Epipedon (A2) Sandy Gleyed Matrix (S					Surface				rie Redox (A	16)			
Black Histic (A3)						rk Surfa			Piedmont	Floodplain So	oils (F19))		
Hydrogen Sulfide (A4)					Redox Depre				Red Paren	t Material (TI	F2)			
Stratified Layers (A5)		Dark Surface (S7)			Iron-Mangar	iese Ma	sses (F12)		Very Shall	ow Dark Sur	face (TF1	12)		
2 cm Muck (A10)		Polyvalue Below S		-	Umbric Surf				Other					
Depleted Below Dark Surfac	e (A11)	Thin Dark Surface		Piedmont Floodplain Soils (F19)										
Thick Dark Surface (A12)		Loamy Gleyed Mat	rix (F2)											
Restrictive Layer (If Observe	<i>d</i>)			Remarks	SOIL DADA	METE	R NOT MET.							
Restrictive Layer (1) Observe	a) Type:			Nennar KS	SOIL FARA	1.VIC I E	A NOT MEL.							
1	Depth (inches):		_											
p														





3. Base Map © National Geographic

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- Flag Location
- Data Point Location •
- i___ Alternative 2A Limits
- Alternative 2B Limits

- Alternative 4 Limits Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) +++ Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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1:2,400 (At original document size of 11x17)

- Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
 Parcel data provided by Fairfax, Manassas, and Prince William
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1 Title **Delineation Map**

Page 2 of 16



- Flag Location
- Data Point Location •
- . . . Alternative 2A Limits I___
- Alternative 2B Limits Alternative 4 Limits
- Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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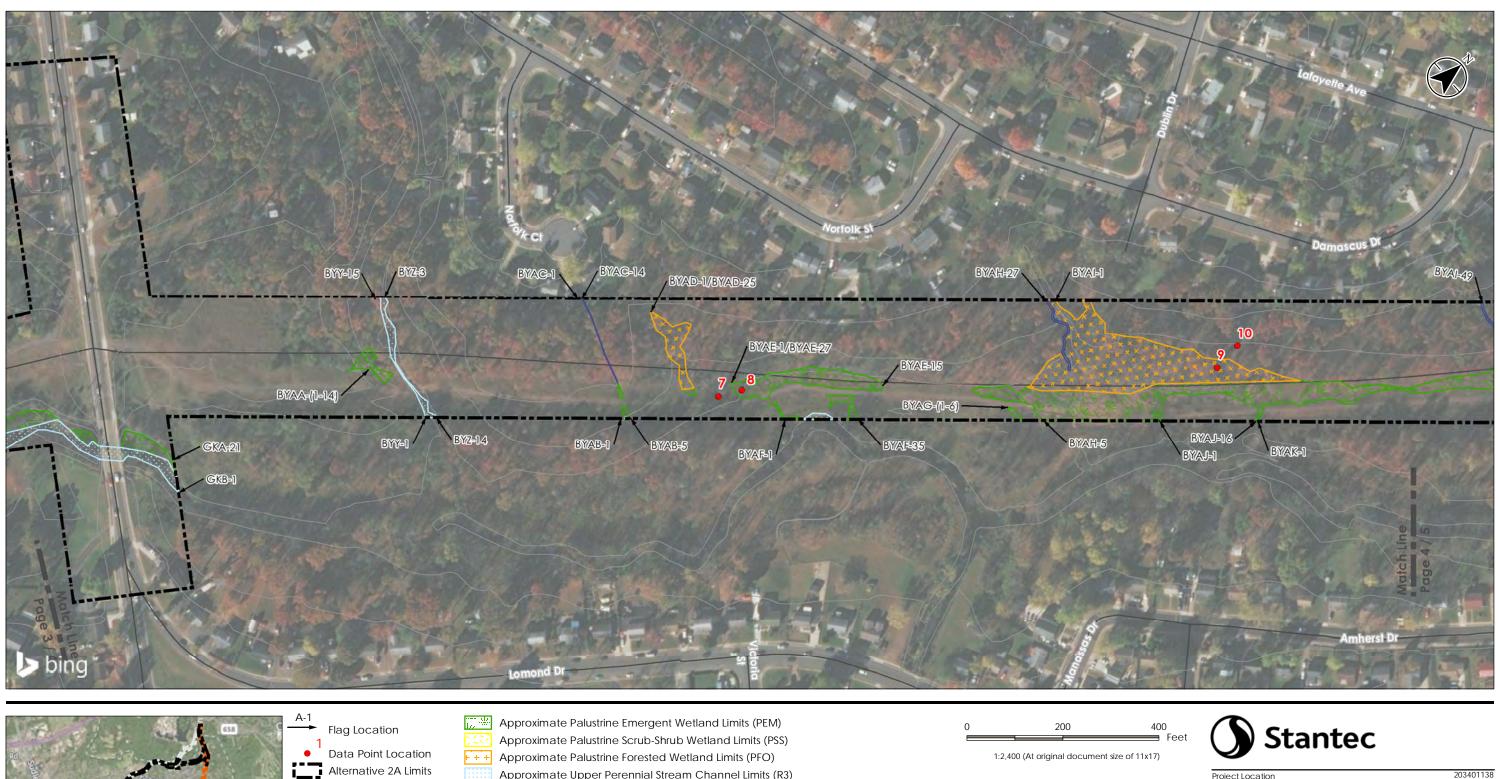
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Figure No.

1 Title

Delineation Map

Page 3 of 16



- Alternative 2A Limits
- Alternative 2B Limits
- Alternative 4 Limits Culvert
 - 2-Foot Contour

Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

- 1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet 2. Parcel data provided by Fairfax, Manassas, and Prince William 3. The limits of waters of the U.S., including wetlands, shown on this map have
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- 5. Topography provided by Prince William and Fairfax Counties 6. Orthoimagery © Bing Maps 7. Microsoft product screen shot(s) reprinted with permission from Microsoft been field located by means of sub-meter capable GPS technology and
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Delineation Map



- Flag Location
- Data Point Location • i___ Alternative 2A Limits
- Alternative 2B Limits
- Alternative 4 Limits Culvert
 - 2-Foot Contour
- Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)



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Environmental Documentation for Route 28 Corridor

Figure No. 1

Title

Delineation Map

Page 5 of 16



- Flag Location
- Data Point Location •
- i___ Alternative 2A Limits
- Alternative 2B Limits

- Alternative 4 Limits Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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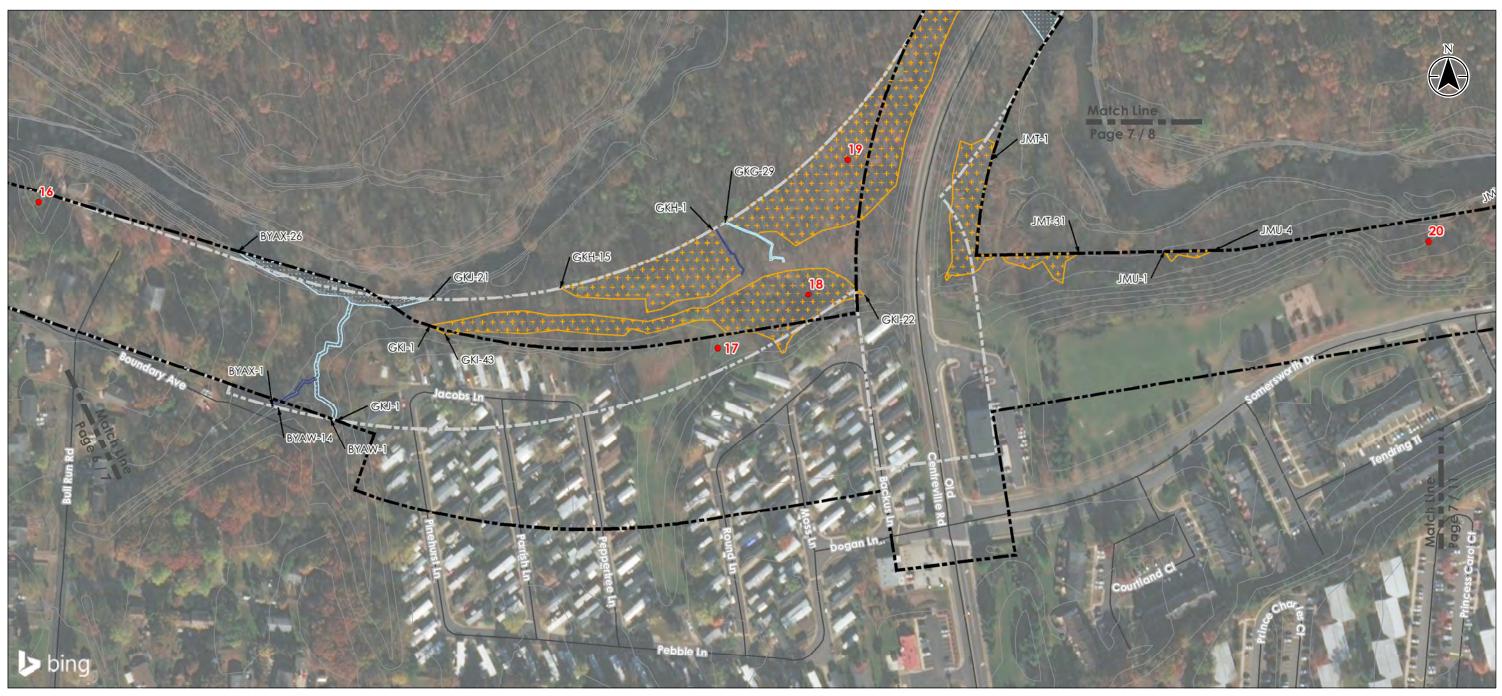
Client/Project

Parsons Transportation Group, Inc. Environmental Documentation for Route 28 Corridor

Figure No. 1

Title **Delineation Map**

Page 6 of 16



- Flag Location
- Data Point Location **y** = 1
 - Alternative 2A Limits Alternative 2B Limits
- Alternative 4 Limits

- Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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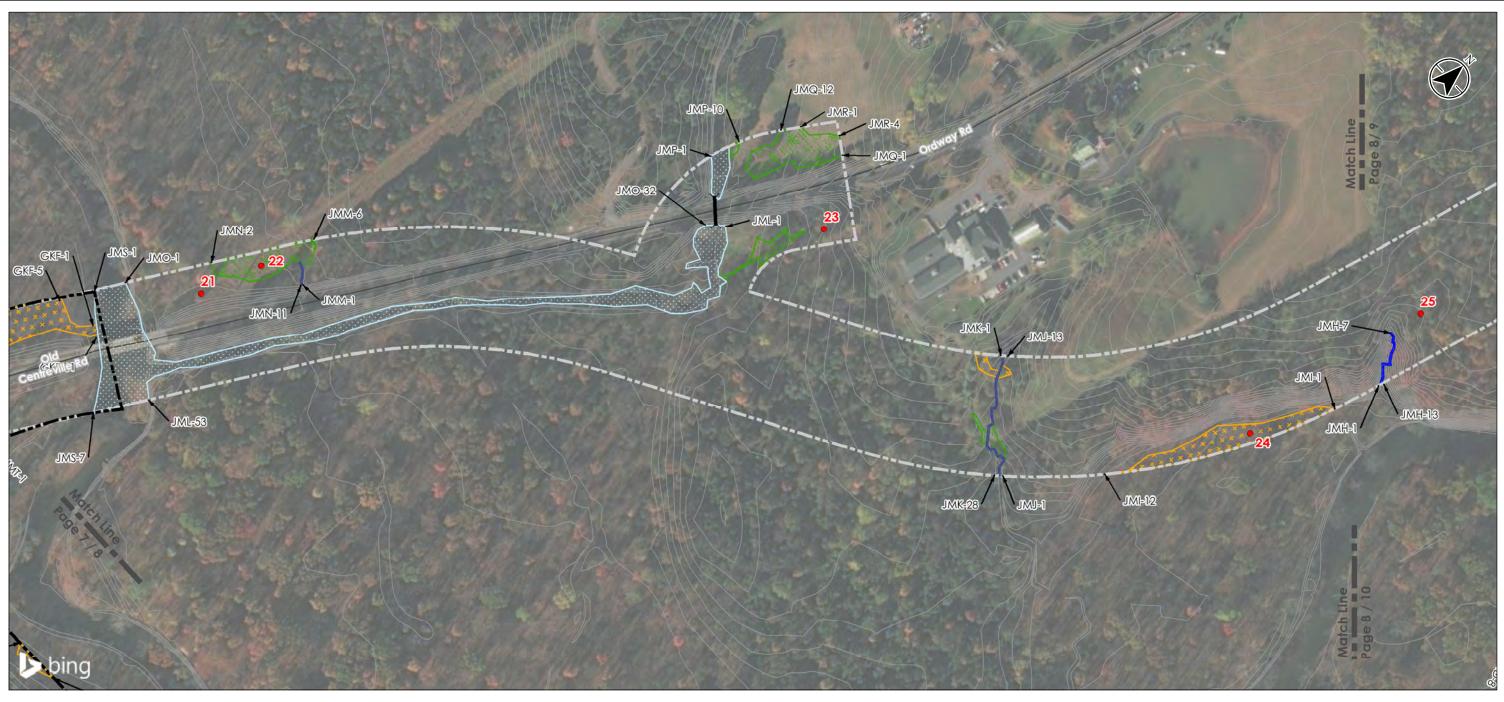
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Figure No. 1

Title **Delineation Map**

Page 7 of 16



- Flag Location
- Data Point Location • Alternative 2A Limits
- i___ Alternative 2B Limits

- Alternative 4 Limits
- Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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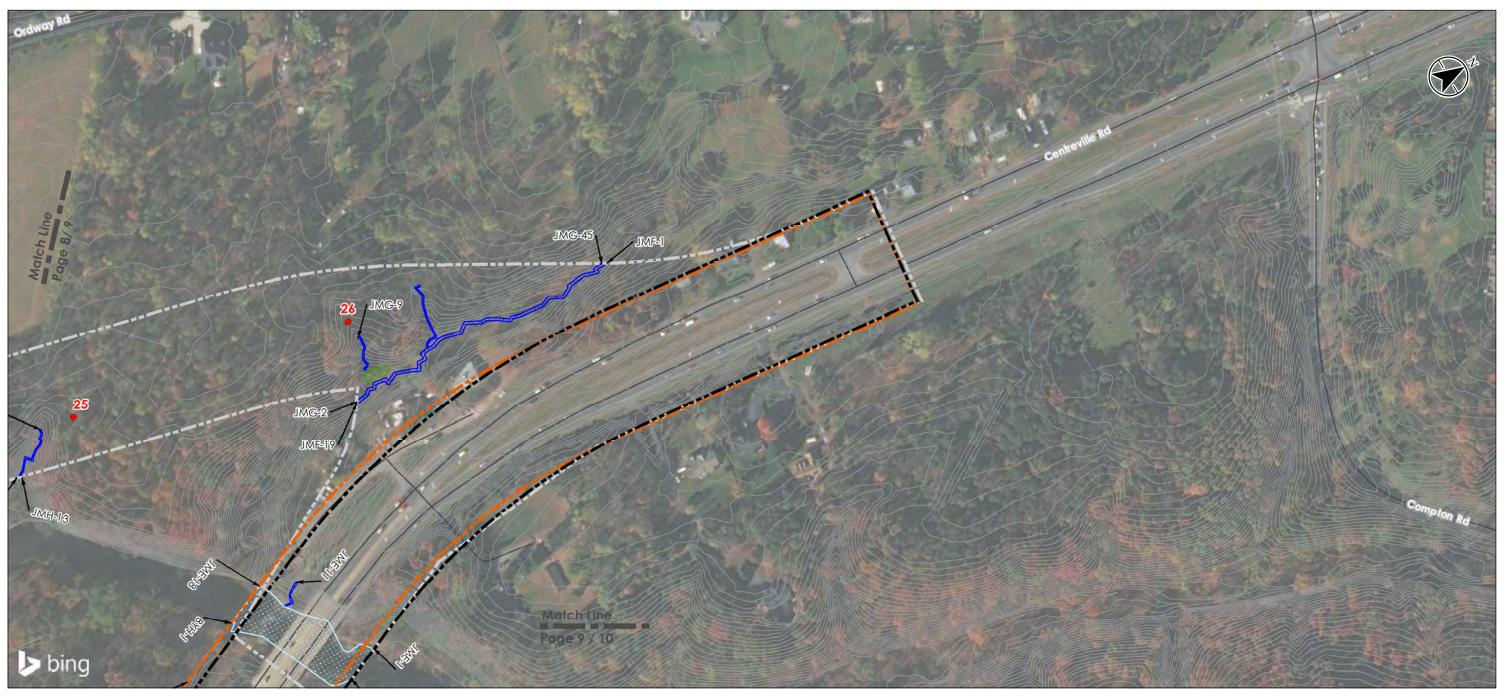
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Title **Delineation Map**

Page 8 of 16



- Flag Location
- Data Point Location • i___ Alternative 2A Limits
- Alternative 2B Limits

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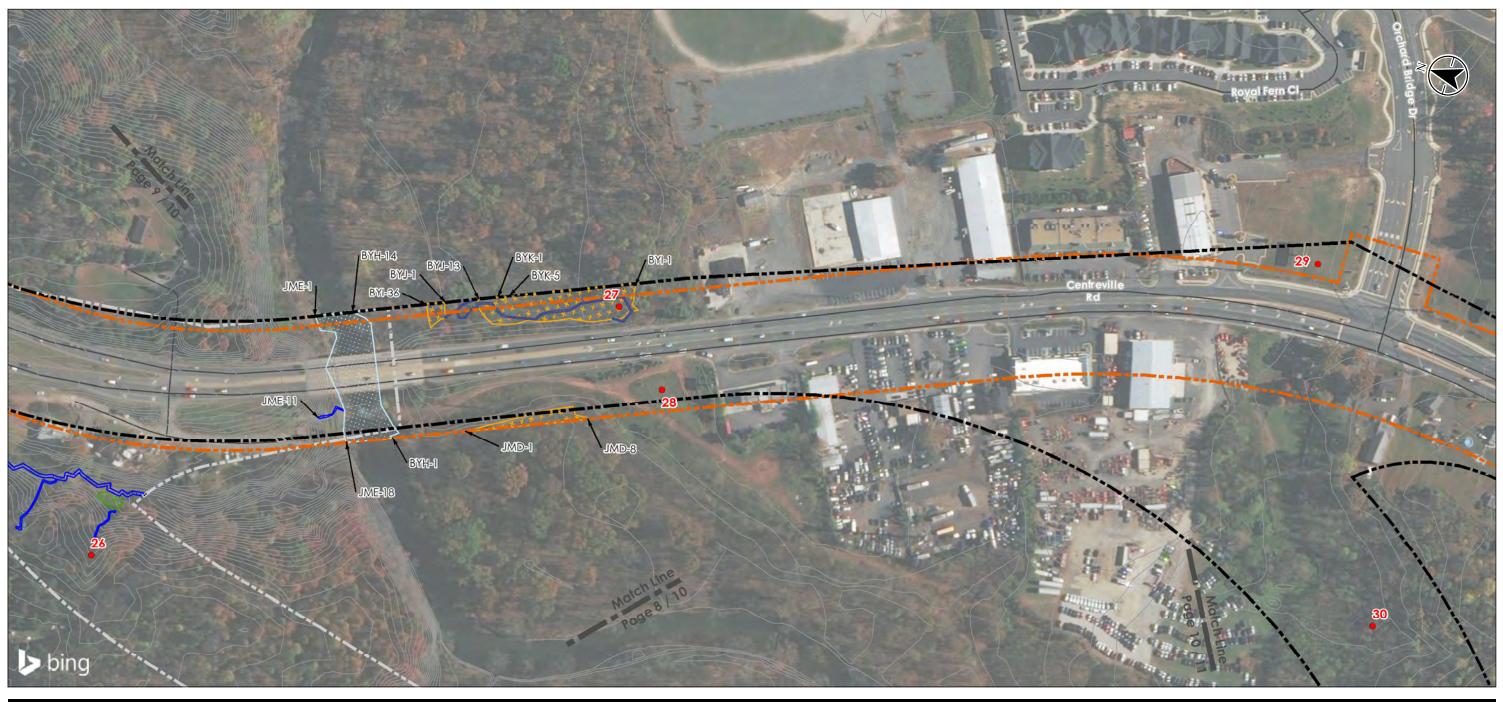
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Figure No. 1

Title **Delineation Map**

Page 9 of 16



- Flag Location Data Point Location
- i___ Alternative 2A Limits Alternative 2B Limits
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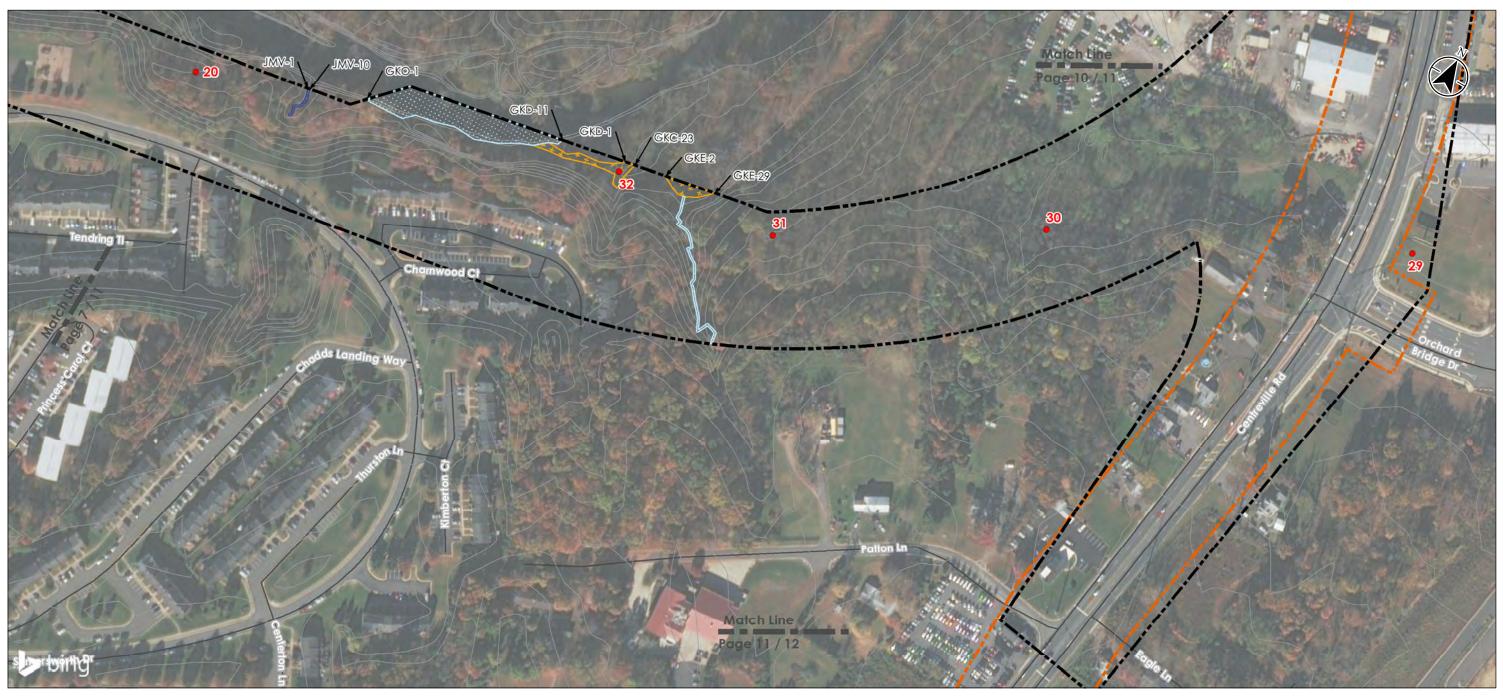
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1 Title

Delineation Map

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- Flag Location
- Data Point Location • ---Alternative 2A Limits
- Alternative 2B Limits

- Alternative 4 Limits
- Culvert
 - 2-Foot Contour

Approximate Palustrine Emergent Wetland Limits (PEM) Approximate Palustrine Scrub-Shrub Wetland Limits (PSS) Approximate Palustrine Forested Wetland Limits (PFO) Approximate Upper Perennial Stream Channel Limits (R3) Approximate Intermittent Stream Channel Limits (R4) Approximate Ephemeral Stream Channel Limits (R6)

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- 1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet 2. Parcel data provided by Fairfax, Manassas, and Prince William 3. The limits of waters of the U.S., including wetlands, shown on this map have
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Environmental Documentation for Route 28 Corridor

Figure No. 1

Title **Delineation Map**

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- Flag Location
- Data Point Location • Alternative 2A Limits
- I___ Alternative 2B Limits

- Alternative 4 Limits Culvert
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Environmental Documentation for Route 28 Corridor

Figure No. 1

Title **Delineation Map**

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Alternative 4 Limits

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Approximate Palustrine Emergent Wetland Limits (PEM)

Approximate Intermittent Stream Channel Limits (R4)

Approximate Ephemeral Stream Channel Limits (R6)

Approximate Palustrine Scrub-Shrub Wetland Limits (PSS)

Approximate Upper Perennial Stream Channel Limits (R3)

Approximate Palustrine Forested Wetland Limits (PFO)

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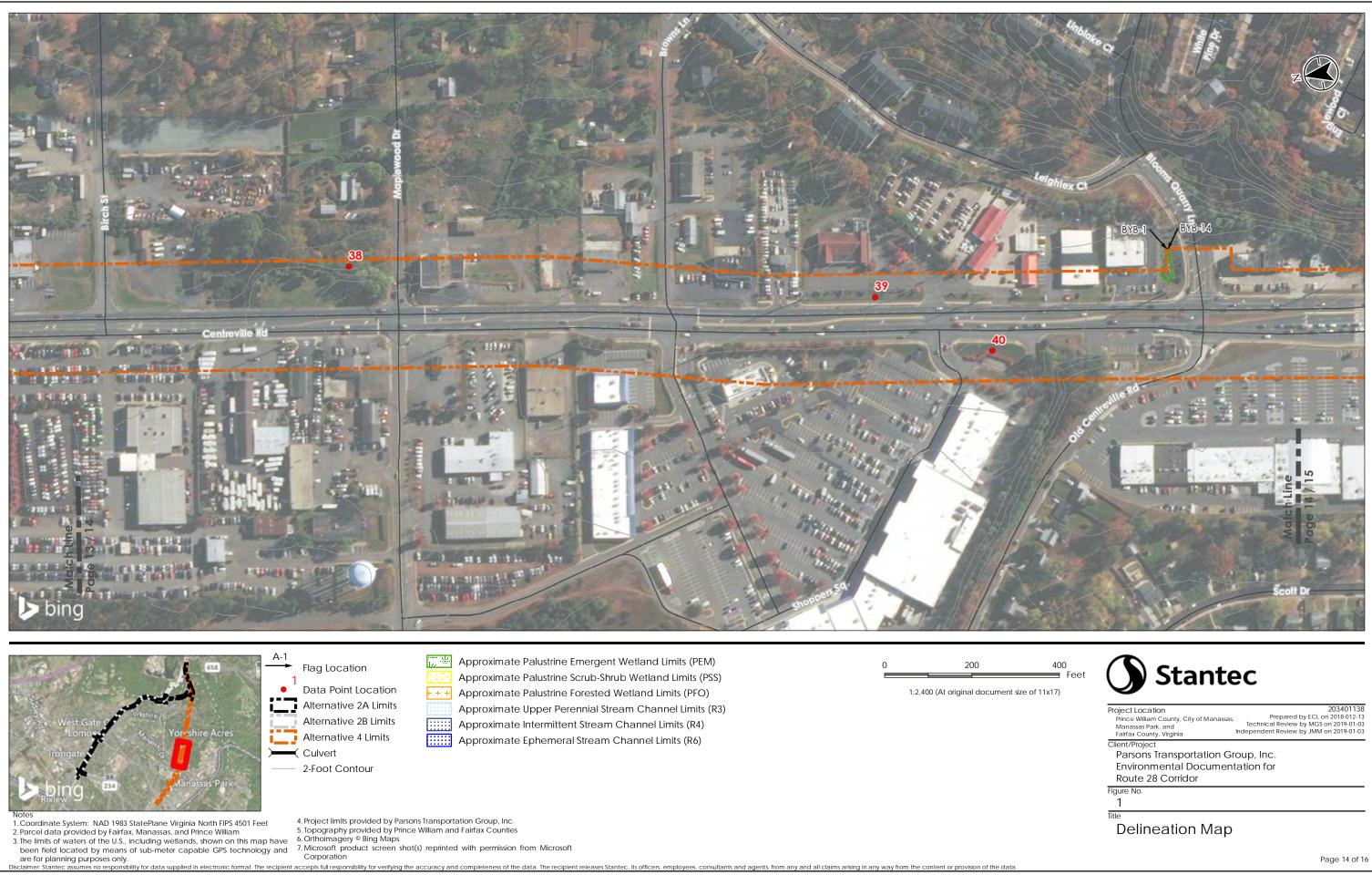
Figure No.

1 Title

Delineation Map

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203401138





- Flag Location
- Data Point Location • ---

- Alternative 2A Limits I___ Alternative 2B Limits
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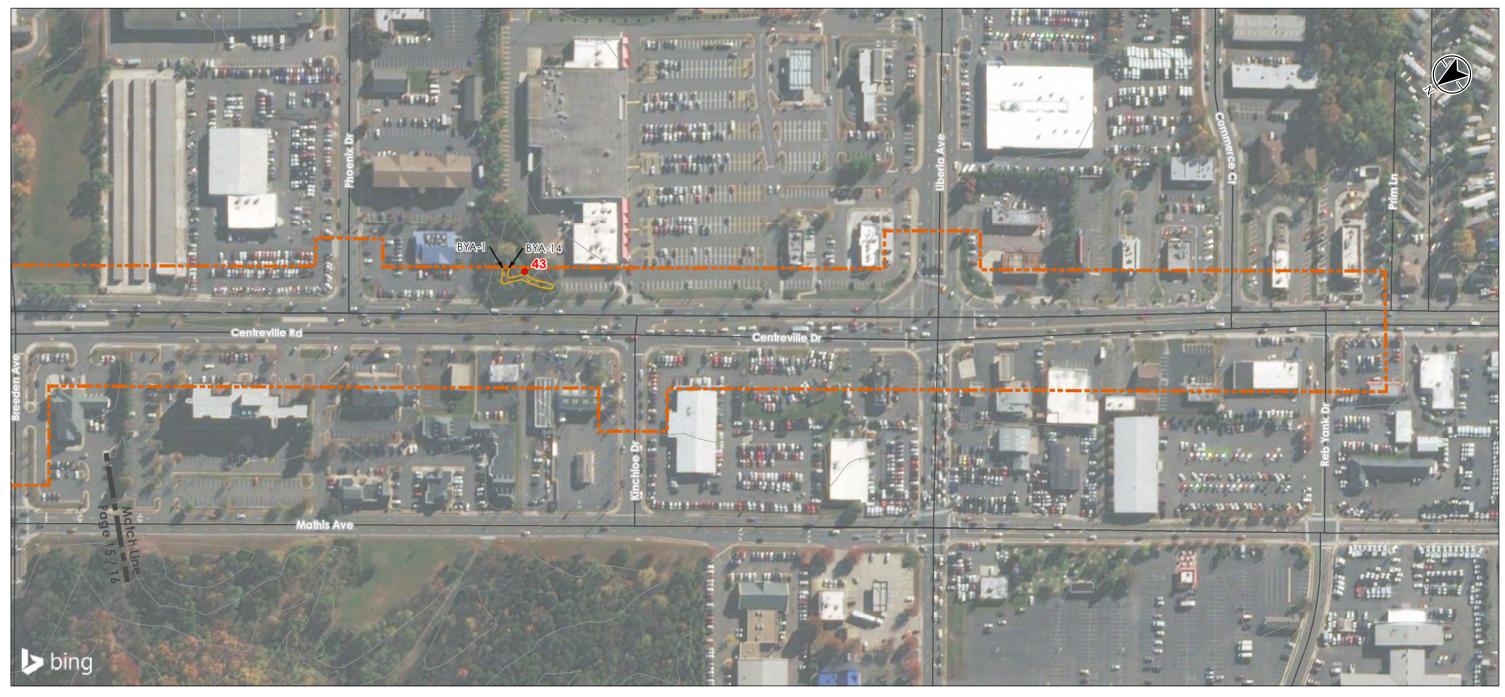
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Route 28 Corridor

Figure No. 1 Title

Delineation Map

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- Flag Location Data Point Location
- i___ Alternative 2A Limits
- Alternative 2B Limits

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- Alternative 4 Limits Culvert
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