

FINAL SERVICE ROAD STUDY



Wake and Johnston Counties

TIP Project Numbers R-2721, R-2828, and R-2829

Prepared for:



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1. INTRODUCTION

This Service Road Study for the Complete 540 project (TIP Projects R-2721, R-2828, and R-2829) was initiated by the North Carolina Turnpike Authority (NCTA). The objective of this study is to evaluate those parcels that would be directly impacted by the project such that existing road access to some, or all, of the parcel is eliminated. The evaluation includes a comparison between the cost associated with providing service road access with the cost of purchasing the isolated or remnant parcel.

The preliminary project design for the Preferred Alternative was reviewed to identify those parcels that would likely lose access with implementation of the project. Once the impacted parcels were identified they were then evaluated to determine the cost of constructing a service road that gave them access from existing roadways near the project. This cost was then compared to the total acquisition cost for the isolated or remnant portions of the parcel. In order to adequately evaluate and establish this cost/benefit analysis, the study includes the approximate land and structure cost of purchasing the remaining portions of the parcel after the controlled access right of way (ROW) has been acquired versus the cost of providing a usable service road to service the remnant parcel(s). Several factors were included in formulating an approximate cost to provide service roads. These factors included the cost associated with constructing the service road including any major hydraulic structures that may be necessary, environmental mitigation costs, and additional ROW necessary to develop the service road.

The approach to evaluating the cost effectiveness of providing remnant parcels with service road access is a six-step process: 1) Identify those parcels that would potentially lose access through the existing network of roads and effectively becoming “land-locked” as a direct result of construction of the project; 2) Evaluate existing cross accesses, adjacent parcel ownership, and existing access patterns; 3) Of the remaining parcels that do not have access, determine which ones have viable service road solutions; 4) Develop preliminary service road designs that meet minimum design and construction standards; 5) Quantify the costs associated with each service road, some of which would effectively serve several land-locked parcels (in these cases the cost of the service road is divided equitably between those parcels it serves; and, 6) Compare the costs associated with providing a service road (tabulated in step 5) with the cost of purchasing the remaining portions of parcels.

Steps one through three are discussed in Section 2 Access Evaluation of this study. Steps four and five are discussed in Section 3 Design Options of this study. Step six is discussed in Section 4 Cost / Benefit Analysis. Based on the information revealed through this six step process, recommendations to either provide a service road or purchase the remnant parcel(s) are made. These recommendations are included in Section 5 Recommendations of this study.

2. ACCESS EVALUATION

To begin the evaluation process, the design team compiled the latest available CADD mapping data for the project including the following files: 1) Design base files; 2) Existing property line files; 3) Proposed ROW and controlled access files; and 4) Photogrammetric mapping files. These files and their data were supplemented with available data from Wake and Johnston County GIS/Mapping System (<http://www.wakegov.com/gis/services/Pages/data.aspx>) (<http://www.johnstonnc.com/gis2/content.cfm?PD=data>). Both web sites were accessed in March 2017.

The above noted information and data were utilized in the identification of parcels that would potentially lose access due to project design and/or controlled access along the corridor. These parcels, once identified, were reviewed to determine existing access configuration, adjacent ownership connectivity, and potential access concepts to provide parcel access. This level of evaluation was conducted to identify any fatal flaws with the potential service road options. Engineering judgment was exercised to determine valid access solutions that meet NCDOT design standards and criteria and identify both avoidable and unavoidable impacts.

Table 2-1 catalogues the parcels affected by the project that would have land-locked remnant acreage outside of the proposed ROW and control of access for the project. Specifically, the first column lists each area with land-locked parcels alphabetically. This letter index corresponds to the area identified in the figures included in Appendix A. Table 2-1 also includes a parcel identification number, known ownership information, approximate remnant acreage, existing access, whether or not a building structure occurs on the remnant portion of the parcel, and summary of access issues and/or solutions. This summarized information allowed the design team to review access for each parcel (or group of parcels) and determine the viability of providing access to each parcel. Parcels recommended for further evaluation are highlighted in green, and were carried into the next step of the study process where design solutions were developed and quantified.

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
R-2721							
A	1	NC Turnpike Authority	0.9	Adjoining Parcel	No	State owned parcel.	
	2	Blount, Katherine J	0.30	Adjoining Parcel	No	Will maintain access through adjoining parcel.	
B	3	Triangle Greenways Council	14	None	No	Will maintain access through proposed greenway culvert crossing	
C	4	Not Used	N/A				
D	5	NC Department of Transportation	1.65	None	No	Advance Acquisition Property.	
	6	H&B Stephenson Family LLC	5.31	Turner Dr.	No	Access could be provided from Sunset Lake Rd.	
	7	McKoy, Charles	0.73	Sunset Lake Road	No	Small undeveloped remnent of a larger tract	
	8	NC Department of Transportation	2.73	Sunset Lake Road	No	Advance Acquisition Property.	
	8A	NC Department of Transportation	0.58	Sunset Lake Road	No	Advance Acquisition Property.	
	9	Abdel-Ghani, Tawfiq Asad	5.06	Sunset Lake Road	No	Will maintain access through adjoining parcel.	
	10	Abdel-Ghani, Tawfiq Asad	9.03	Sunset Lake Road	No	Will maintain access through adjoining parcel.	
E	11	E&M Johnson Enterprises Inc.	0.33	Holly Springs Road	No	Access not allowed along Holly Springs Road due to interchange.	
	12	E&M Johnson Enterprises Inc.	0.48	Holly Springs Road	No	Access not allowed along Holly Springs Road due to interchange.	
	13	Reynolds, Anna	1.06	Holly Springs Road	Yes	Access available to Holly Springs Road	
	14	Wonder Day Partnership	1.10	Holly Springs Road	No	Access could be provided by connecting Wesley Ct and Fairview St or by	
	15	SECU RE INC	0.11	N. Carroll St. to Fariview St.	No	Minimal acerage left after Right Way	
	16	Ding, Xuezhou	0.45	N. Carroll St. to Fariview St.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	17	Howington Properties LLC	0.4	N. Carroll St. to Fariview St.	Yes		
	18	Matthews Margaret Sutton	0.34	N. Carroll St. to Fariview St.	No		
	19	Smith, John	0.48	N. Carroll St. to Fariview St.	No		
	20	Smith, Debra Ann Whitt	0.46	N. Carroll St. to Fariview St.	No		
	21	Ding, Xuezhou	0.23	Fairview Street	No		
	22	Morris, Gwendolyn	0.31	Holly Springs Road	No	Access not allowed along Holly Springs Road due to interchange.	
	23	Gensinger, John & Jones, David	0.3	Fairview Street	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	24	Gensinger, John & Jones, David	0.42	Fairview Street	Yes		
	25	Sullivan, Kenneth	0.37	Fairview Street	Yes		
	26	Gensinger, John & Jones, David	0.82	Fairview Street	Yes		
	27	Cromer, Gary & Rhonda	0.44	S. Carroll St. to Fairview St.	No		
	28	Walker, Charles	0.44	S. Carroll St. to Fairview St.	Yes		
	29	Nederhoff, Daniel	0.45	S. Carroll St. to Fairview St.	Yes		
	30	Howell, Timothy & Donna	0.45	S. Carroll St. to Fairview St.	Yes		
	31	Walton, Russell Lee	0.45	S. Carroll St. to Fairview St.	Yes		
	32	Harris, Teresa Starr	0.46	S. Carroll St. to Fairview St.	Yes		
	33	Jennings, Roger & Hedda	0.57	S. Carroll St. to Fairview St.	Yes		

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
E	34	Jennings, Hedda	0.5	Public Dr.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	35	Oney, Darrell & Rose	0.6	S. Carroll St. to Fairview St.	Yes		
	36	Weaver, Ricky	0.57	S. Carroll St. to Fairview St.	Yes		
	37	Hooker, Francis	0.69	Suncliffe Ct.	Yes		
	38	Grant, Steven & Yong	0.69	Suncliffe Ct.	Yes		
	39	Grant, Steven & Yong	0.73	Suncliffe Ct.	Yes		
	40	Griffin, Kelly & Kevin	0.69	Suncliffe Ct.	Yes		
	41	Arrington, Phillip & Brenda	0.69	Suncliffe Ct.	Yes		
	42	Arteaga, Jose & Maria	0.69	Suncliffe Ct.	Yes		
	43	Burl, Preston & Nancy	0.71	Suncliffe Ct.	Yes		
	44	Jones, Shelton	0.76	Suncliffe Ct.	No		
	45	Wiggins, Beulah	4.29	Holly Springs Road	Yes	Access across adjoining parcel	
	46	Arteaga Construction Inc.	0.7	N. Bell Haven St.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	47	Pippin, Mary & Jeffrey	0.55	N. Bell Haven St.	Yes		
	48	Ding, Xuezhou	0.93	N. Bell Haven St.	Yes		
	49	Barrett, Timothy & Linda	0.48	N. Bell Haven St.	Yes		
	50	Pathan, A Karim & Jubeda	0.48	N. Bell Haven St.	Yes		
	51	Gensinger, John	0.96	S. Bell Haven St.	Yes		
	52	Jones, Leamon Jr.	0.96	S. Bell Haven St.	Yes		
	53	Stephens, Aubrey Lee Jr & Bonnie	0.95	S. Bell Haven St.	Yes		
	54	Wilson, Nellie & James	0.55	New Haven St.	Yes		
	55	Wilson, Nellie	0.48	New Haven St.	Yes		
	56	Gensinger, John	0.44	New Haven St.	Yes		
	57	Ding, Xuezhou	0.45	New Haven St.	No		
	58	Ding, Xuezhou	0.48	New Haven St.	No		
	59	Fisher, Jason Ray	0.52	New Haven St.	Yes		
	60	Callahan, Nathaniel	0.89	Fair Haven St.	Yes		
	61	Alderson, Bruce & Jennifer	0.76	N. Bell Haven St.	Yes		
	62	Davy, Thomas	0.75	New Haven St.	Yes		
	63	Jones, Gregory	0.5	N. Bell Haven St.	Yes		
	64	Justice, John & Helen	0.49	N. Bell Haven St.	Yes		
	65	Ellington, James & Elizabeth	0.49	N. Bell Haven St.	Yes		
	66	Pinkard, Janet & Richard	0.71	N. Bell Haven St.	Yes		
	67	Benitez, Olga & Bernardo	0.71	Suncliffe Ct.	Yes		
	68	Mack, Louise & John	0.85	S. Carroll St. to Fairview St.	Yes		
	69	Ding, Xuezhou	0.65	Fair Haven St.	Yes		
	70	Arteaga-Lara, Stephanie	0.63	Fair Haven St.	Yes		

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
E	71	Arteaga, Jose & Maria	1.08	Fair Haven St.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	72	Hauver, Robert & Doris	0.51	Fair Haven St.	Yes		
	73	Ding, Xuezhou	0.58	New Haven St.	No		
	74	Gensinger, John & Kenneth	0.45	Fair Haven St.	Yes		
	75	Starzman, Ronald	0.46	Fair Haven St.	Yes		
	76	Bolton, Cecillia	0.48	Fair Haven St.	Yes		
	77	Lopez Gomez, Epifanio	0.47	Fair Haven St.	Yes		
	78	Nederhoff, Daniel	0.51	S. Carroll St. to Fairview St.	Yes		
	79	Smith, John Christian	0.47	Fair Haven St.	Yes		
	80	Nederhoff, Daniel	0.57	S. Carroll St. to Fairview St.	Yes		
	81	Sutterfield, George & Pamela	0.45	Fair Haven St.	No		
	82	Nederhoff, Daniel	0.68	S. Carroll St. to Fairview St.	Yes		
	83	Sutterfield, George & Pamela	0.43	Fair Haven St.	Yes		
	84	Sullivan, Kenneth	1.01	S. Carroll St. to Fairview St.	Yes		
	85	Wilson, Tonya & Cianna	0.69	S. Carroll St. to Fairview St.	Yes		
	86	J&D Property Management	0.82	Fair Haven St.	Yes		
	87	Zhang, Huanqing	0.52	Fair Haven St.	Yes		
	88	Gensinger, John	0.61	Fair Haven St.	Yes		
	89	Verhoeven, Cary Dale	0.82	Fair Haven St.	Yes		
	90	Madden, Gary	1.78	Fair Haven St.	No		
	91	Tingen, Robert & Tillie	3.11	Fair Haven St.	Yes		
	92	Millis, Josepheus	0.6	Fair Haven St.	Yes		
	93	Sullivan, Kenneth	0.83	Fair Haven St.	Yes		
	94	Taylor, James & Brenda	0.86	Fair Haven St.	Yes		
	95	Gensinger, John	0.54	Fair Haven St.	Yes		
	96	Steele, Ronnie	0.53	Fair Haven St.	Yes		
	97	Curtis, Robert Michael	0.74	Fair Haven St.	Yes		
	98	Jones, Randy & Larry	6.37	Fair Haven St.	Yes		
	99	Jones, Randy & Larry	0.52	Fair Haven St.	Yes		
	100	Harvey, Henry & Evelyln	1.93	S. Carroll St. to Fairview St.	No		
	101	Hair, William & Willie	1.59	S. Carroll St. to Fairview St.	Yes		
	102	Lester, Mary	1.16	S. Carroll St. to Fairview St.	Yes		
	103	Davis, Johnie & Judy	1.77	Ashley Rd.	Yes		
	104	Johnson, Robert Armaah	0.69	Ashley Rd.	No		
	105	Ding, Xuezhou	0.86	S. Carroll St. to Fairview St.	No		
	106	Williford, David & Steven	0.49	Ashley Rd.	Yes		

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
E	107	Williford, David & Steven	0.48	Ashley Rd.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	108	Rangel, Sendi Mendoza & Ignacio Terrones	0.49	Ashley Rd.	Yes		
	109	DWB Properties	0.73	S. Carroll St. to Fairview St.	Yes		
	110	Reams, James	1.09	S. Carroll St. to Fairview St.	Yes		
	111	Harte, Virgina & John	0.98	Ashley Rd.	Yes		
	112	Nederhoff, Daniel	0.47	Ashley Rd.	Yes		
	113	Nederhoff, Daniel	0.48	Ashley Rd.	Yes		
	114	Nederhoff, Daniel	0.54	S. Carroll St. to Fairview St.	Yes		
	115	Welch, Leatta	0.46	Ashley Rd.	Yes		
	116	Shuller, Edgar	0.41	S. Carroll St. to Fairview St.	Yes		
	117	Ding, Xuezhou	0.47	Ashley Rd.	Yes		
	118	Sullivan, Kenneth	0.5	S. Carroll St. to Fairview St.	Yes		
	119	McCarthy, Yvelyne & Henry	0.48	Ashley Rd.	Yes		
	120	Rush, Annie	0.48	S. Carroll St. to Fairview St.	Yes		
	121	Ding, Xuezhou	0.45	Ashley Rd.	Yes		
	122	Jennings, Hedda	0.48	S. Carroll St. to Fairview St.	Yes		
	123	Adams, Dempsey Heirs	0.45	Ashley Rd.	Yes		
	124	Norris, Geraldine	0.46	S. Carroll St. to Fairview St.	Yes		
	125	Jennings, Hedda	0.44	Ashley Rd.	Yes		
	126	Ellington, Joan	0.43	S. Carroll St. to Fairview St.	Yes		
	127	Aqua North Carolina, Inc.	0.47	Ashley Rd.	No		
	128	Ding, Xuezhou	0.52	S. Carroll St. to Fairview St.	Yes		
	129	Aqua North Carolina, Inc.	0.49	Ashley Rd.	Yes		
	130	Davis, Johnie & Judy	0.5	Ashley Rd.	Yes		
	131	Davis, Johnie & Judy	0.51	Ashley Rd.	Yes		
	132	Williams, Danny	0.51	Ashley Rd.	Yes		
	133	Davis, Donald	0.51	Ashley Rd.	Yes		
	134	Davis, Donald	0.53	Ashley Rd.	Yes		
	135	Davis, Donald	0.3	Ashley Rd.	Yes		
	136	Gensinger, John	0.28	Ashley Rd.	No		
	137	Gensinger, John	0.54	Ashley Rd.	No		
	138	Gensinger, John	0.49	Ashley Rd.	Yes		
	139	Jordan, Karen	0.55	Ashley Rd.	Yes		
	140	Cole, Donald	0.52	Ashley Rd.	Yes		
	141	Ding, Xuezhou	0.52	Ashley Rd.	Yes		

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
E	142	Clark, Brian	0.56	Ashley Rd.	No	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	143	Clark, Brian	0.52	Ashley Rd.	Yes		
	144	J&D Property Management	0.53	Ashley Rd.	No		
	145	J&D Property Management	0.49	Ashley Rd.	Yes		
	146	J&D Property Management	0.54	Ashley Rd.	Yes		
	147	Gensinger, John	0.57	S. Carroll St. to Fairview St.	Yes		
	148	Gensinger, John	0.47	S. Carroll St. to Fairview St.	Yes		
	149	Gensinger, John	0.49	S. Carroll St. to Fairview St.	Yes		
	150	Nutt, Bonnie	0.47	S. Carroll St. to Fairview St.	Yes		
	151	Lowery, Ronald & Stella	0.37	S. Carroll St. to Fairview St.	No		
	152	Lowery, Ronald & Stella	0.43	Oakland Dr.	Yes		
	153	Nederhoff, Daniel	0.43	Oakland Dr.	Yes		
	154	Howell, Timothy & Jennifer	0.57	Oakland Dr.	Yes		
	155	Craven, Keith & Robert	0.85	Oakland Dr.	Yes		
	156	Gensinger, John	0.4	Oakland Dr.	Yes		
	157	Gensinger, John	0.39	Oakland Dr.	Yes		
	158	Gensinger, John	0.53	Oakland Dr.	No		
	159	Lynn, Bobby & Mary	2.15	Oakland Dr.	Yes		
	160	Sprague, Peter	2.35	Oakland Dr.	Yes		
	161	Battle, Mary	0.42	Oakland Dr.	Yes		
	162	Gensinger, John	0.4	Oakland Dr.	Yes		
	163	Nederhoff, Daniel	0.41	Spring St	Yes		
	164	Ottaway, Danny & Joan	0.45	Spring St	Yes		
	165	Nederhoff, Daniel	0.24	Spring St	Yes		
	166	Boger, George	3.83	Spring St	No		
	167	NC Department of Transportation	2.22	Sunrise Ave	No	Advance Acquisition Property.	
	168	Morris, Leatha	0.61	Spring St	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	169	Duke, Josehyne Trust	0.48	N. Carroll St. to Fariview St.	No		
	170	Duke, Josehyne Trust	0.47	N. Carroll St. to Fariview St.	Yes		
	171	Nederhoff, Daniel	0.38	Oakland Dr.	Yes	Access could be provided by connecting Wesley Ct and Fairview St or by extending Suncliffe Ct to Holly Springs Rd	
	172	Nederhoff, Daniel	0.5	Oakland Dr.	Yes		
	173	White, Tony Allen	0.49	Oakland Dr.	Yes		
F	174	NC Department of Transportation	4.46	N/A	No	Advance Acquisition Property.	
	175	Unkown	0.35	West Lake Rd.	No	Small undevelopable remnant remainder of the large tract.	
	176	Rhodes, Pansy	0.72	Lorbacher Rd.	No	Small undevelopable remnant remainder of the large tract.	

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
G	177	Rhodes, Claybone & Pansy	8.49	Bells Lake Rd.	No	Access can be provided by extending Pony Soldier Dr to Oxford Green Dr and utilized existing ROW connecting Oxford Green Dr to Parcel 177	
	178	Ball, William Alton	1.33	Oxford Green Dr.	Yes	Access can be provided by extending Pony Soldier Dr to Oxford Green Dr or connecting Oxford Green Dr to Truelove Dr.	
	179	Ozment, Julius & Teresa	1.78	Oxford Green Dr.	Yes		
	180	Guertin, Elizabeth & Paul	2.03	Oxford Green Dr.	Yes		
	181	Thoemmes, Tammy	1.68	Oxford Green Dr.	Yes		
	182	Street, Brett & Jennifer	0.8	Oxford Green Dr.	Yes		
	183	Conversano, Frank & Sara	0.8	Oxford Green Dr.	Yes		
	184	Hilton, Dennis & Sharon	0.75	Oxford Green Dr.	Yes		
	185	Cooper, Linda	0.69	Oxford Green Dr.	Yes		
	186	Gordon, Charles & Heather	0.69	Oxford Green Dr.	Yes		
	187	Cole, Twyla	0.69	Oxford Green Dr.	Yes		
	188	Conroy, Jeremy	0.7	Oxford Green Dr.	Yes		
	189	Blakesley, Susan	0.94	Oxford Green Dr.	Yes		
	190	Barnes, Patrick & Linwood	1.59	Oxford Green Dr.	Yes		
	191	Lake, Heather	1.61	Oxford Green Dr.	Yes		
	192	Mowery, Herman	1.07	Oxford Green Dr.	Yes		
	193	Mullin, Charles & Julia	1.65	Oxford Green Dr.	Yes		
	193A	Thiele, Karl & Mary	2.56	Oxford Green Dr.	Yes	Access can be provided by connecting Oxford Green Dr to Truelove Dr.	
	194	Clear, Michael & Lauren	0.75	Oxford Green Dr.	Yes	Access can be provided by connecting Oxford Green Dr to Truelove Dr.	
	195	Lamb, Elizabeth	0.13	Oxford Green Dr.	No	Small remnant remainder of the large tract.	
	196	Ferguson, Lowell & Chelsy	0.94	Bells Lake Rd.	Yes	Access can be provided by connecting Oxford Green Dr to Truelove Dr.	
	197	Guy, Randy & Steve	0.67	Bells Lake Rd.	Yes		
	198	Guy, Randy & Steve	0.71	Bells Lake Rd.	No		
	199	JH/MH Holdings LLC	1.87	Bells Lake Rd.	Yes	Access can be provided with service road from Bells Lake	
	200	Blevins, Ricky & Twilah	0.87	Bells Lake Rd.	Yes		
	201	Strickland, Ralph	1.79	Bells Lake Rd.	Yes		
	202	Hogan, Richard & Mary	0.89	Bells Lake Rd.	Yes		
	203	Deans, Carol & James	5.54	Bells Lake Rd.	No		
	204	Yates, Willie Heirs	5.96	Highland Creek Dr.	No		
	205	Deans, Carol & James	0.14	Bells Lake Rd.	No	Small undevelopable remnant remainder of the large tract.	
	206	Grappier Investments, LLC	0.04	Bells Lake Rd.	No	Small undevelopable remnant remainder of the large tract.	

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TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
G	207	Stegeman, Sandra & Jerry	0.56	Bells Lake Rd.	No	Will lose access to Bells Lake Rd. due to C/A	
	208	Baker, John & Marsha	0.92	Bells Lake Rd.	Yes	Will lose access to Bells Lake Rd. due to C/A	
	209	NC Department of Transportation	2.2	Bells Lake Rd.	No	Advance Acquisition Property.	
	210	Rhodes, Claybone & Pansy	1.04	Bells Lake Rd.	No	Access through adjoining parcel	
	211	Prior Construction Co. Inc.	0.7	Buckhorn Dr.	No	Access can be provided by extending Deerborn Dr. to Deer Meadow Dr.	
H	212	Prior Construction Co. Inc.	1.46	Buckhorn Dr.	No		
	213	Prior Construction Co. Inc.	0.82	Buckhorn Dr.	No		
	214	Samjlagic, Nijaz & Mirsada	0.62	Deer Meadow Dr.	Yes		
	215	NC Department of Transportation	0.15	Deer Meadow Dr.	No	Advance Acquisition Property.	
	216	Wooten, Annette & Tim	0.49	Deer Meadow Dr.	Yes	Parcel will lose access to Deer Meadow Dr. due to C/A	
	217	Dean, Anthony & Carolyn	0.61	Buckwood Dr.	Yes	Access would require buying two non-affected parcels to connect Deer Meadow Dr. and Pineslope Dr.	
	218	Tutor, Karon & Sharon	0.69	Buckwood Dr.	Yes		
	219	Price, Elise & Christopher	0.7	Pineslope Dr.	Yes		
	220	Vines, Kenneth & Judy	0.7	Pineslope Dr.	Yes		
	221	Not Used	N/A				
	222	Barnes, Charles & Lynn	0.71	Pineslope Dr.	Yes	Access would require buying two non-affected parcels to connect Deer Meadow Dr. and Pineslope Dr.	
	223	Capital Match LLC	0.72	Pineslope Dr.	Yes		
	224	Dickerson, Robert & Deborah	0.6	Pineslope Dr.	Yes		
	225	Spievogel, Linda	0.76	Buckwood Dr.	Yes		
	226	Pittman, Andrew & Teodora	0.84	Buckwood Dr.	Yes		
	227	Biagini, Anthony	0.86	Buckwood Dr.	Yes		
	228	Orr, Patricia	1.56	Buckwood Dr.	Yes		
	229	Rutherford, Neal & Joy	0.85	Fawnview Ct.	No	Usable remainder is small and undesirable	
	230	Passner, Laura	0.97	Buckwood Dr.	Yes	Access would require buying two non-affected parcels to connect Deer Meadow Dr. and Pineslope Dr.	
	231	Dickerson, Robert & Deborah	0.73	Pineslope Dr.	Yes		
	232	Wiseman, Mose & Martha	0.19	Buckwood Dr.	No	Small undevelopable remnant remainder of the large tract.	
	233	NC Department of Transportation	0.12	Deer Meadow Dr.	No	Advance Acquisition Property.	
	234	Coleman, Grant & Susan	0.06	Fawnview Ct.	No	Small undevelopable remnant remainder of the large tract.	
	235	Bowser, Maria	0.62	Fawnview Ct.	No	Access from Deer Meadow would require buying non-affected parcel.	
	236	Mills, Willie & Eva	0.35	Fawnview Ct.	No	Small undevelopable remnant remainder of the large tract.	
	237	Atkins, Steven & John	4.01	Johnson Pond Rd.	No	Access could be provided from Heavy Weight Dr.	
	238	Williams, JW Heirs	0.18	Johnson Pond Rd.	No	Small undevelopable remnant remainder of the large tract.	
	239	Williams, Kinston & Eula	0.36	Johnson Pond Rd.	No	Small undevelopable remnant remainder of the large tract.	

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
H	240	Williams, JW Heirs	0.79	Johnson Pond Rd.	No	Small undevelopable remnant remainder of the large tract.	
	241	Ennis, Terry	0.06	Johnson Pond Rd.	No	Small undevelopable remnant remainder of the large tract.	
	242	Ennis & Atksins Nursery	0.11	Johnson Pond Rd.	No	Small undevelopable remnant remainder of the large tract.	
I	243	Ennis, Joseph Leo Ennis, Yvonne Gower	8.8	Johnson Pond Rd.	No	Access could be provided with a service road running parallel to C/A from Lake Wheeler Rd.	
	244	Arnold, Winifred W	9.71	Sugg Farm Ln.	No		
	244A	Arnold, Winifred W	2.29	Sugg Farm Ln.	No	Access could be provided by connecting Arnold Park Ln and Sugg Farm Ln	
	245	Arnold, Winifred W Arnold, Winifred W	0.34	Sugg Farm Ln.	No		
	246	Walton, Helen A	2.69	Sugg Farm Ln.	No		
	247	O'Bryant, Patrick C O'Bryant, Hubert A	22.36	Sugg Farm Ln.	No		
	248	Walton, Helen A	6.2	Sugg Farm Ln.	No		
	249	Rudd, Ronda	1.1	Sugg Farm Ln.	Yes		
	250	Walton, Jonathan Bruce	1.9	Sugg Farm Ln.	Yes		
	251	Wetherill, Ted J	1.14	Sugg Farm Ln.	Yes		
J	252	Sears, Nancy S Sears, James M	1.64	Donny Brook Rd.	No	Small undevelopable remnant remainder of the large tract.	
	253	NC Department of Transportation	15.83	Donny Brook Rd.	No	Advance Acquisition Property.	
	254	Lucas, Kenneth A	0.47	Fayetteville Rd.	No	Access would cross non-affected properties to gain access outside the controlled access at the interchange.	
	255	Lucas, Kenneth A	0.21	Fayetteville Rd.	No		
	256	Nash, Anne Marie	0.35	Fayetteville Rd.	No		
	257	Nash, Annie M	0.36	Fayetteville Rd.	Yes		
	258	Lewis, Lubie L Heirs	0.37	Fayetteville Rd.	Yes		
	259	Tingen Broadwell Family LLC	0.08	Fayetteville Rd.	No		
	260	Tingen Broadwell Family LLC	14.93	Fayetteville Rd.	No	Access could be provided by utilized existing ROW to connect parcel to Allen St.	

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
R-2828							
K	261	Circle M Properties Inc	0.88	Advantage Way	No	Access could be provided with service road from Fanny Brown Rd.	
	262	Rowland, Neal Morris	1.91	Chris Dr.	No		
	263	NC Department of Transportation	11.09	Fanny Brown Rd.	No		
	264	Not Used	N/A				
	265	NC Department of Transportation	2.79	Fanny Brown Rd.	No	Advance Acquisition Property.	
L	266	King, Royal Mark David King, Sandra Lynn	20.14	Fanny Brown Rd.	N/A	Access could be provided by utilizing existing ROW to connect parcel to Trotter Dr.	
	267	Evans, Nannie S	18.07	Old Stage Rd.	Yes	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr.	
	268	Mcdaniel, Carlton S Jr Mcdaniel, Cynthia W	1.32	Old Stage Rd.	Yes		
	269	Ledbetter Timber & Pulpwood Inc	6.29	Old Stage Rd.	Yes		
	270	Dickens, Kenneth F Dickens, Sharron E	3.91	Rolling Farm Dr.	Yes		
	271	Buchanan, Wesley S Buchanan, Wendy S	1.09	Rolling Farm Dr.	Yes		
	272	Harrison, Andrew Craig	1.23	Rolling Farm Dr.	Yes		
	273	Brown, Richard A Brown, Janette S	2	Rolling Farm Dr.	Yes		
	274	Chamblee, Allan Chamblee, Constance Lucas	0.6	Rolling Farm Dr.	Yes		
	275	Pham, Michael R Pham, Sophia Auco	0.99	Rolling Farm Dr.	Yes		
	276	Garcia, Eric	0.49	Rolling Farm Dr.	Yes		
	277	Johnson, Timothy Wayne Johnson, Kimberly Call	0.49	Rolling Farm Dr.	Yes		
	278	Mcgee, Roy T III Mcgee, Tammy B	0.46	Rolling Farm Dr.	Yes		
	279	Cummings, Omar	0.59	Rolling Farm Dr.	Yes		
	280	Barnes, Gary S Barnes, Patricia A	1.07	Rolling Farm Dr.	Yes		
	281	Tew, Robert Tew, Phyllis	2.48	Rolling Farm Dr.	Yes		
	282	Old Stage Place Homeowners Assc Inc	3.71	No Access	No		
	283	Pfenning, Tim L Pfenning, Betsy S	2.43	Rolling Farm Dr.	Yes		
	284	Barfield, Thomas Goodson, Shannon	0.84	Rolling Farm Dr.	Yes		
	285	Morrisey, Gloria M	0.72	Rolling Farm Dr.	Yes		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
L	286	Greene, Wondus L Greene, Tamara L	0.71	Rolling Farm Dr.	Yes	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr.	
	287	Galloway, Jamela R Galloway, Michael K	0.64	Rolling Farm Dr.	Yes		
	288	Ball Rentals LLC	0.59	Rolling Farm Dr.	Yes		
	289	Not Used	N/A				
	290	Pulliam, Larry C Pulliam, Gloria Ann	0.55	Rolling Farm Dr.	Yes		
	291	House, John Barton, Magdalen	1.05	Rolling Farm Dr.	Yes		
	292	Not Used	N/A				
	293	Morf, Fredi	0.53	Rolling Farm Dr.	Yes	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr.	
	294	Dineen, Matthew Dineen, Angela M	0.48	Rolling Farm Dr.	Yes		
	295	Brown, Danny R Brown, Tonya M	0.48	Rolling Farm Dr.	Yes		
	296	Akinbuli, Akin Laurence	0.66	Rolling Farm Dr.	Yes		
	297	Ball, Forrest H Ball, Delores G	0.12	Old Stage Rd.	No	Access could be provided by realigning Rolling Meadows and adding a service road from Rolling Meadows Dr.	
	298	Old Stage Place Homeowners Assc Inc	0.17	Rolling Farm Dr.	No	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr.	
	299	Braaten, David Braaten, Lena A	1.31	Rolling Farm Dr.	Yes		
	300	Blackman, Jerry D Blackman, Betty Jean	0.49	Rolling Farm Dr.	Yes		
	301	Crawley, Richard R Jr Crawley, Melanie P	0.76	Rolling Farm Dr.	Yes		
	302	Lawhorne, Harvey W	0.8	Rolling Farm Dr.	Yes		
	303	Agbodjan, Armel Akouete	0.55	Rolling Farm Dr.	Yes		
	304	West, Joseph H West, Debra S	0.68	Rolling Farm Dr.	Yes		
	305	Duval, Garfield L Duval, Arvian I	0.85	Rolling Farm Dr.	Yes		
	306	Cecil, David Allan	1.06	Old Stage Rd.	Yes	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr. and a connection through another parcel	
	307	Aqua North Carolina, Inc	0.72	Rolling Farm Dr.	Yes	Access could be provided with a service road from Old Stage Rd to Rolling Farm Dr.	
	308	Ball, Forrest H Ball, Delores G	5.91	Old Stage Rd.	No	Access could be provided by extending Trotter Dr., but would require the state to take over maintenance of neighborhood roads.	
	309	Ball, Forrest H	12.51	Old Stage Rd.	Yes		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
L	310	Ball Rentals LLC	0.92	Old Stage Rd.	Yes	Access could be provided by realigning Rolling Meadows and adding a service road from Rolling Meadows Dr. (Access through adjoining parcel)	
	311	Bowling, Julia S	0.43	Old Stage Rd.	No	Will lose access to Old Stage Rd. due to C/A	
	312	Not Used	N/A				
	313	Not Used	N/A				
	314	Not Used	N/A				
	315	Not Used	N/A				
	316	Not Used	N/A				
	317	Not Used	N/A				
	318	Not Used	N/A				
	319	Not Used	N/A				
	320	Not Used	N/A				
	321	Not Used	N/A				
	322	Not Used	N/A				
	323	Not Used	N/A				
	324	Not Used	N/A				
	325	Not Used	N/A				
	326	Not Used	N/A				
	327	Not Used	N/A				
	328	Not Used	N/A				
	329	Not Used	N/A				
	330	Not Used	N/A				
	331	Not Used	N/A				
	332	Not Used	N/A				
	333	Not Used	N/A				
	334	Rackley, Sallie	0.64	Old Stage Rd.	No	Access will not be allowed along Old Stage Rd. due to interchange	
	335	Mary T Ball Properties LLC	14.35	Old Stage Rd.	No	Access could be provided with service road from Gentle Slope Way	
	335A	Mary T Ball Properties LLC	0.12	Old Stage Rd.	No	Small undeveloped remnant remainder of a larger tract	
	335B	Mary T Ball Properties LLC	2.64	Old Stage Rd.	No	Undeveloped remnant remainder of a larger tract	
	336	Mary T Ball Properties LLC	3.92	Old Stage Rd.	No	Access could be provided with service road from Gentle Slope Way	
	337	Mary T Ball Properties LLC	5.02	Old Stage Rd.	No		
	338	Mary T Ball Properties LLC	21.63	Old Stage Rd.	No	Access could be provided with service road from Gentle Slope Way	
	339	Carwell, Ronald G CarwellL, Vickie R	1.79	Old Stage Rd.	Yes		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
M	340	Neal, Sherry Upchurch Ball, David W /Trustee	7.1	Holland Church Rd.	No	Access could be provided with service road from Holland Church Rd (Access through adjoining parcel)	
	341	Neal, Sherry Upchurch	12.08	Holland Church Rd.	No	Access could be provided with service road from Holland Church Rd	
	342	Mary T Ball Properties LLC	49.27	Holland Church Rd.	No		
	342A	Mary T Ball Properties LLC	0.78	Holland Church Rd.	No	Small undeveloped remnant remainder of a larger tract	
	343	Morin, Deane Joseph	4.02	Holland Church Rd.	No	Access could be provided with service road from Holland Church Rd	
	344	Neal, Sherry Upchurch Ball, David W /Trustee	15.24	Holland Church Rd.	No		
N	345	Auton, John L III	0.58	Sauls Rd.	No	Access would require buying property from non-affected parcel	
	346	NC Department of Transportation	1.54	Pondsedge TRL	No	Advanced acquisition property	
	346A	NC Department of Transportation	0.19	Pondsedge TRL	No	Advanced acquisition property	
	346B	NC Department of Transportation	2.01	Pondsedge TRL	No	Advanced acquisition property	
	347	NC Department of Transportation	2.14	Pondsedge TRL	Yes	Advanced acquisition property	
	348	Wingo, Earl R Jr Wingo, Kelley Lynne	8.99	Pondsedge TRL	Yes	Access could be provided by realigning Pondsedge Trail to connect to Sauls Rd outside of controlled access.	
	348A	Wingo, Earl R Jr Wingo, Kelley Lynne	0.15	Pondsedge TRL	No	Small undeveloped remnant remainder of a larger tract	
	349	Hicks, Linwood Thomas Hicks, Carolyn	0.57	Community Garden Rd	No	Small undeveloped remnant remainder of a larger tract	
	350	Wake Acquisitions LLC	0.71	Joe Leach Rd.	No	Advanced acquisition property	
	351	Simpkins, Walter E Jr	8.15	Joe Leach Rd.	No	Access could be provided by extending Community Garden Rd to run parallel to C/A	
	352	Waldo, Betty H Humpherson, Amy H	9.44	Joe Leach Rd.	No		
	353	Lassiter, Susan S	10.71	Joe Leach Rd.	No		
	354	Lassiter, Jerry C	1.4	Joe Leach Rd.	Yes	Access could be provided by realigning Joe Leach Rd. to run parallel to C/A	
	355	Mcnally, Katie B	20.61	Joe Leach Rd.	No	Access could be provided by extending Community Garden Rd to run parallel to C/A	
	355A	Mcnally, Katie B	5.21	Hunters Farm Rd	No	Access could be provided by realigning Joe Leach Rd., but would require buying the home from adjacent parcel.	
	356	NC Department of Transportation	3.39	Jordan Rd.	No	Advanced acquisition property	
	356A	NC Department of Transportation	3.67	Jordan Rd.	No	Advanced acquisition property	
	357	NC Department of Transportation	3.49	Jordan Rd.	Yes	Advanced acquisition property	
	358	Phillippe, Donald Keith Phillippe, Eric	0.9	Jordan Rd.	No	Small undeveloped remnant remainder of a larger tract	

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
O	359	Ennis, David Lavon Ennis, T G	1.06	No Access	No	Small undeveloped remnant remainder of a larger tract	
	360	Penny, Horace Donald	5.62	Benson Rd.	Yes	Access would require going through subdivision and buying property from non-affected parcel(s)	
	361	Not Used	N/A				
	362	Norris, Betty L	0.44	Benson Rd.	No	Small undeveloped remnant remainder of a larger tract	
	363	Not Used	N/A				
	364	NC Department of Transportation	0.75	Benson Rd.	No	Advanced acquisition property	
	365	Penny, Randy K	0.4	Benson Rd.	Yes	Access would require buying property from non-affected parcels and moving the entrance to the back side of property	
	366	Penny, Randy K	0.61	Benson Rd.	Yes		
	367	Mcgee, Robert L Mcgee, Barbara	0.61	Benson Rd.	Yes		
	368	Matthews, Robert Casey Matthews, Billie P	0.39	Benson Rd.	Yes		
	368A	Matthews, Billie Rose Matthews, Casey	0.85	Benson Rd.	Yes	Access would require long service road to serve small property remnant	
	369	NC Department of Transportation	6.25	Benson Rd.	No	Advanced acquisition property	
	370	T H Turner Farms Inc	1.54	No Access	No	Small undeveloped remnant remainder of a larger tract	
	371	Biggerstaff, Susan Adair	14.06	Reca Rd.	No	Access would require crossing Swift Creek	
P	372	City of Raleigh	9.27	Wrenn Rd.	No	Access would require buying non-affected property, extending the bridge over Swift Creek, and additional impacts to wetlands and streams	
	373	Bryan, Jean Ball	44.87	Wrenn Rd.	No		
	374	B T & Betsy Henderson Family LLC Morris, Ashley Carlyle Jr	79.75	SR 5589	No		
	375	B T & Betsy Henderson Family LLC Ch Young Properties LLC	58.62	SR 5589	No	Access would require buying non-affected property, extending the bridge over Swift Creek, and additional impacts to wetlands and streams (access through adjoining parcel)	
	376	B T & Betsy Henderson Family LLC Ch Young Properties LLC	41.44	SR 5589	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
R-2829							
Q	377	Nixon, Joyce J	2.68	New Bethel Church Rd.	No	Access would not be allowed along I-540 due to interchange	
	378	Bryan, Jean Ball Robert Angus Bryan Sr Family Trust	1.4	New Bethel Church Rd.	No	Small undeveloped remnant remainder of a larger tract	
	379	Aman, John R	59.06	Hillington Rd.	No	Access could be provided by extending Alonzo Rd to parcel 379	
	379A	Aman, John R	1.12	Hillington Rd.	No		
	380	Burnette, R Garland	37.28	White Oak Rd.	No	Access would require buying propery from non-affected parcel or extending Vitex St.	
	381	Burnette, R Garland	64.41	White Oak Rd.	No		
	382	Gilchrist, Derrick G Gilchrist, Maggie Alaina	3.72	Old Cascade Dr.	Yes	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	383	Platinum Investors LLC	1.18	Old Cascade Dr.	Yes		
	384	Davis, Sarah Bell	0.23	Old Cascade Dr.	No		
	385	Davis, Sarah Bell	0.24	Old Cascade Dr.	No		
	386	Joyner, Leslie T Turner, Phyllis A	0.47	Old Cascade Dr.	Yes		
	387	Yarborough, Lenoris Jr	0.22	Old Cascade Dr.	No		
	388	Yarborough, Lenoris Jr	0.24	Old Cascade Dr.	No		
	389	Spencer, Mary I	0.24	Old Cascade Dr.	No		
	390	Spencer, Mary I	0.24	Old Cascade Dr.	No		
	391	Metzker, David W	0.46	Old Cascade Dr.	Yes		
	392	Bass, Lonzell Bass, Daisey	0.24	Old Cascade Dr.	No		
	393	Bass, Lonzell Bass, Daisey	0.23	Old Cascade Dr.	No		
	394	Hinton, Earnest Junior	0.24	Old Cascade Dr.	No		
	395	Hinton, Earnest Junior	0.24	Old Cascade Dr.	No		
	396	Baker, Joe Blue, Louise B	0.48	Old Cascade Dr.	Yes		
	397	Browning, Randall Browning, Tracy	0.96	Old Cascade Dr.	Yes		
	398	Leslie, Loris Heirs	0.23	Old Cascade Dr.	No		
	399	Holden, Willie Jr Heirs	0.25	Old Cascade Dr.	No		
	400	National Realty Co	0.24	Old Cascade Dr.	No		
	401	National Realty Co	0.24	Old Cascade Dr.	No		
	402	Davis, Willie C Davis, Virginia	0.24	Old Cascade Dr.	No		
	403	Davis, Willie C Davis, Virginia	0.24	Old Cascade Dr.	No		
	404	Lofton, Ernest	0.25	Old Cascade Dr.	No		
	405	Lofton, Ernest	0.25	Old Cascade Dr.	No		
	406	Robinson, Katie	0.48	Old Cascade Dr.	Yes		
	407	National Realty Co	0.24	Old Cascade Dr.	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
Q	408	National Realty Co	0.25	Old Cascade Dr.	No	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	409	Rourk, Jvon Marcelle	0.25	Old Cascade Dr.	No		
	410	Burton, Jacquelyn M	0.25	Old Cascade Dr.	No		
	411	Cannon, Annie M Ham Louis, Kate Ham	0.25	Old Cascade Dr.	No		
	412	Cannon, Annie M Ham Louis, Kate Ham	0.24	Old Cascade Dr.	No		
	413	Williams, Willie Williams, Joyce	0.26	Old Cascade Dr.	No		
	414	Williams, Willie Williams, Joyce	0.23	Old Cascade Dr.	No		
	415	Johnson, Pamela Johnson, Allen	0.29	Old Cascade Dr.	Yes		
	416	Johnson, Pamela Johnson, Allen	0.31	Old Cascade Dr.	Yes		
	417	Johnson, Sandra K Johnson, Helen Louise	0.24	Old Cascade Dr.	Yes		
	418	Johnson, Sandra K Johnson, Helen Louise	0.24	Old Cascade Dr.	Yes		
	419	Willis, Johnsie M	0.48	Old Cascade Dr.	Yes		
	420	Pope, Anthony M	0.48	Old Cascade Dr.	Yes		
	421	Aguilar, Lelis Y Gonzalez	0.48	Old Cascade Dr.	Yes		
	422	Whitley, Donald Whitley, Valerie	0.96	Old Cascade Dr.	Yes		
	423	Woods, William M Jr Woods, Lucille R	0.25	Old Cascade Dr.	Yes		
	424	Woods, William M Jr Woods, Lucille R	0.24	Old Cascade Dr.	Yes		
	425	Reyes-Rea, Francisco Javier	0.49	Old Cascade Dr.	No		
	426	Lamberth, Dorothy W Heirs	0.24	Old Cascade Dr.	No		
	427	Lamberth, Dorothy W Heirs	0.24	Old Cascade Dr.	No		
	428	Mciver, Willie J Mciver, Frances H	0.24	Old Cascade Dr.	No		
	429	Mciver, Willie J Mciver, Frances H	0.24	Old Cascade Dr.	No		
	430	Mciver, Willie J Mciver, Frances H	0.25	Old Cascade Dr.	No		
	431	Mciver, Willie J Mciver, Frances	0.24	Old Cascade Dr.	No		
	432	Mciver, Willie J Mciver, Frances H	0.24	Old Cascade Dr.	No		
	433	Mciver, Willie J Mciver, Frances H	0.24	Old Cascade Dr.	No		
	434	Mciver, Willie J Mciver, Frances H	0.24	Old Cascade Dr.	No		
	435	Rea, Francisco Reyes	0.48	Old Cascade Dr.	No		
	436	Woods, Barbara	0.47	Old Cascade Dr.	Yes		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
Q	437	Conyers, Frank Douglas Conyers, Margaret Best	0.49	Old Cascade Dr.	Yes	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	438	Darden, Joetta Farrar	0.72	Old Cascade Dr.	Yes		
	439	Gaskill, Richard P	0.48	Old Cascade Dr.	Yes		
	440	Mckithen, Yolanda	0.24	Old Cascade Dr.	No		
	441	Mckithen, Yolanda	0.24	Old Cascade Dr.	No		
	442	Sampson, Rosilyn	0.48	Old Cascade Dr.	Yes		
	443	Boykin, John Franklin	0.25	Old Cascade Dr.	No		
	444	Boykin, John Franklin	0.25	Old Cascade Dr.	No		
	445	Lenger, Jerry P	0.24	Old Cascade Dr.	Yes		
	446	Lenger, Jerry P	0.24	Old Cascade Dr.	No		
	447	Allen, Mollie Boylen Heirs	0.24	Old Cascade Dr.	No		
	448	Allen, Mollie Boylen Heirs	0.25	Old Cascade Dr.	No		
	449	Mitchell, Elizabeth Dodd Heirs	0.49	Old Cascade Dr.	Yes		
	450	Smith, Lila Mae Smith Samuel Lee Zachary Terry	0.5	Old Cascade Dr.	Yes		
	451	Smith, Lila Mae Smith Samuel Lee	0.24	Old Cascade Dr.	Yes		
	452	Smith, Lila Mae Smith, Samuel Lee Zachary	0.25	Old Cascade Dr.	No		
	453	Garris, Linwood E Garris, Holly B	0.25	Old Cascade Dr.	No		
	454	Garris, Linwood Garris, Holly B	0.24	Old Cascade Dr.	No		
	455	Mitchell, Charles Dodd	0.24	Old Cascade Dr.	No		
	456	Mitchell, Charles Dodd	0.29	Old Cascade Dr.	No		
	457	Foster, John Early III	0.25	Old Cascade Dr.	No		
	458	Oneal-Gamboa, Tisha	0.23	Old Cascade Dr.	No		
	459	Oneal-Gamboa, Tisha	0.24	Old Cascade Dr.	No		
	460	Leach, Zola M Heirs	0.24	Old Cascade Dr.	No		
	461	Leach, Zola M Heirs	0.25	Old Cascade Dr.	No		
	462	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.25	Old Cascade Dr.	No		
	463	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.27	Old Cascade Dr.	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
Q	464	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.25	Old Cascade Dr.	No	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	465	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.26	Old Cascade Dr.	No		
	466	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.27	Old Cascade Dr.	No		
	467	Bright, Pamela Batey Trustee Pamela Batey Bright Revocable Living Trust	0.28	Old Cascade Dr.	No		
	468	Smith, Kenneth Bryant	0.24	Old Cascade Dr.	No		
	469	Smith, Kenneth Bryant	0.24	Old Cascade Dr.	No		
	470	Jones, Ellis R Jones, Ora M	0.23	Old Cascade Dr.	No		
	471	Jones, Ellis R Jones, Ora M	0.23	Old Cascade Dr.	No		
	472	Plummer, Linda P	0.81	Old Cascade Dr.	Yes		
	473	Edgerton, Dennis E Edgerton, Katie S	0.64	Old Cascade Dr.	Yes		
	474	Yarbrough, Heather	0.64	Old Cascade Dr.	Yes		
	475	Joyner, Leslie T Joyner, Phyllis A	0.29	Old Cascade Dr.	Yes		
	476	Joyner, Leslie T Joyner, Phyllis A	0.26	Old Cascade Dr.	Yes		
	477	Sanders, William E	0.25	Villa St.	Yes		
	478	Sanders, William E	0.25	Villa St.	No		
	479	Mcgrath, Mark Robert Mcgrath, Nancy Joan	0.47	Villa St.	Yes		
	480	Ganus, George W	0.51	Old Cascade Dr.	Yes		
	481	Fuller, Kit	0.48	Old Cascade Dr.	Yes		
	482	Castillo, Isaac Matus Matus, Perla Juarez	0.45	Villa St.	Yes		
	483	Chrisp, Mozelle E	0.48	Villa St.	Yes		
	484	Mangum, Willard Heirs	0.26	Salem St	No		
	485	Mangum, Willard Heirs	0.24	Salem St	No		
	486	Bryant, Susan L	0.24	Salem St	No		
	487	Bryant, Susan L	0.2	Salem St	No		
	488	Bryant, Susan L	0.24	Salem St	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
Q	489	Mitchell, Edna	0.25	Old Cascade Dr.	Yes	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	490	Mitchell, Edna	0.26	Old Cascade Dr.	Yes		
	491	Harris, James A Jr	0.26	Old Cascade Dr.	No		
	492	Bradsher, Eric J	0.5	Salem St	Yes		
	493	Mendoza-Rivero, Davadip Gonzalez-Noyola, Celia	0.48	Salem St	Yes		
	494	Wilson, Linda Ruth	0.24	Branch St.	No		
	495	Wilson, Linda Ruth	0.27	Branch St.	No		
	496	Nunn, Louise E	0.23	Branch St.	No		
	497	Nunn, Louise E	0.24	Branch St.	No		
	498	Woods, Timothy L Woods, Barbara W	0.79	Old Cascade Dr.	Yes		
	498A	Harris, James A Jr	0.25	Old Cascade Dr.	No		
	499	Sinclair, Tristan	0.32	Old Cascade Dr.	No		
	500	Walls, Douglas Walls, Delnora W	0.3	Branch St.	No		
	501	Walls, Douglas Walls, Delnora W	0.23	Branch St.	No		
	502	Walls, Douglas Walls, Delnora W	0.26	Branch St.	No		
	503	Walls, Douglas Walls, Delnora W	0.26	Branch St.	No		
	504	Walls, Douglas Walls, Delnora W	0.24	Branch St.	No		
	505	Walls, Douglas Walls, Delnora W	0.22	Branch St.	No		
	506	Walls, Douglas Walls, Delnora W	0.33	Branch St.	No		
	507	Keck, Charles D Jr Heirs	0.24	Amherst St.	No		
	508	Keck, Charles D Jr Heirs	0.24	Amherst St.	No		
	509	Keck, Charles D Jr Heirs	0.25	Amherst St.	No		
	510	Sanders, Levi Jr	0.22	Amherst St.	No		
	511	Sanders, Levi Jr	0.23	Amherst St.	No		
	512	Byrd, Della M	0.49	Old Cascade Dr.	Yes		
	513	Sinclair, Tristan	0.28	Old Cascade Dr.	No		
	514	Amherst 4304 Trust	0.48	Amherst St.	Yes		
	515	Byrd, Fred Heirs	0.24	Amherst St.	No		
	516	Byrd, Fred Heirs	0.22	Amherst St.	No		
	517	Turner, James Carlton Turner, Priscilla Wood	0.23	Amherst St.	Yes		
	518	Turner, James Carlton Turner, Priscilla Wood	0.24	Amherst St.	Yes		
	519	Mack, Paulette P	0.28	Amherst St.	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
Q	520	Mack, Paulette P	0.31	Old Cascade Dr.	No	Access would require extending Tiffany Creek Dr to Old Cascade Dr.	
	521	Mack, Paulette P	0.32	Lexington St.	No		
	522	Gulley, James	0.48	Lexington St.	Yes		
	523	English, Gregory	0.48	Lexington St.	No		
	524	Portier, Ellen M Portier, Wilfred	0.24	Lexington St.	No		
	525	Portier, Ellen M Portier, Wilfred	0.24	Lexington St.	No		
	526	Perez, Yasmin Rea, Francisco Reyes	0.49	Lexington St.	Yes		
	527	Haywood, Charles	0.25	Lexington St.	No		
	528	Haywood, Charles	0.24	Lexington St.	No		
	529	Haywood, Charles	0.21	Lexington St.	No		
	530	Carwell, Ronald G Carwell, Vickie R	0.23	Lexington St.	No		
	531	Wright, Lumichel	0.25	Lexington St.	No		
	532	Wright, Lumichel	0.28	Lexington St.	No		
	533	Ramon, Angie	0.29	Old Cascade Dr.	No		
	534	Ramon, Angie	0.25	Old Cascade Dr.	No		
	535	Wright, Doll Whitaker	0.45	Old Cascade Dr.	Yes		
	536	Wright, Derek L	0.47	Old Cascade Dr.	Yes		
	537	Wright, Lumichel	0.24	Old Cascade Dr.	No		
	538	Wright, Lumichel	0.24	Old Cascade Dr.	No		
R	539	Parker, Kisha	1.23	White Oak Rd.	No	Access could be provided with a service rd running perpendicular to Tiffany Creek Dr., but would require buying property from non-affected parcel	
	540	Peacock, Scott Fitzgerald Matthews, Sylvia Diane	0.28	White Oak Rd.	No	Access through adjoining parcel	
	540A	Parrish, Ella Grace Parrish, Phillip West	0.62	White Oak Rd.	No	Access would require buying property from non-affected parcel	
	541	Hocutt, Victor A	2.95	Escondido Farm Rd.	Yes	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
R	541A	Dean, Donald Ray Dean, Kay M	0.33	Escondido Farm Rd.	No		
	541B	Dean, Donald R Dean, Kay M	1.85	Escondido Farm Rd.	No		
	541C	Boyd, Clarence L Jr Boyd, Samantha B	2	Escondido Farm Rd.	Yes		
	541D	Caviness, John M	2.02	Escondido Farm Rd.	No		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
R	541E	Caviness, John M Caviness, Diane H	1.81	Escondido Farm Rd.	Yes	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
	541F	Musulin, Samuel Michael Musulin, Annette D	4.28	Escondido Farm Rd.	Yes		
	542	Hocutt, Victor A Hocutt, Rose H	2.35	Escondido Farm Rd.	Yes		
	543	Dufner, Patrick J Dufner, Lana R G	28.07	Escondido Farm Rd.	Yes		
	544	Truelove, Steven Brett Truelove, Anne S	4.98	Escondido Farm Rd.	Yes		
	545	Burnette, R G Jr	44.78	Escondido Farm Rd.	No	Access could be provided by realigning Hidden Acres Trail to Raynor Rd.	
	545A	Burnette, R G Jr		Escondido Farm Rd.	No		
	546	2701 Hidden Acre Land Trust	10.68	Hidden Acres Trail	Yes	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
	546A	2702 Hidden Acre Land Trust	0.22	Hidden Acres Trail	No	Access could be provided by realigning Hidden Acres Trail to Raynor Rd.	
	547	Early, Sara Ray	3.81	Hidden Acres Trail	No	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
	547A	Early, Sara Ray	2.39	Hidden Acres Trail	Yes	Access could be provided by realigning Hidden Acres Trail to Raynor Rd.	
	548	Bailey, Joseph R Bailey, Velancia P	9.11	Cabin View Ln.	Yes	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
	548A	Bailey, Joseph R Bailey, Velancia P	1.91	Cabin View Ln.	No	Access could be provided by realigning Hidden Acres Trail to Raynor Rd.	
	549	Elmo T Williams Trust Williams, Alice H	5.54	Raynor Rd.	No	Access could be provided with service road from White Oak Rd., but would require additional stream and wetland impacts	
	550	Capital Cities Communications Inc	1.73	Transmitter Rd.	No	Access would require additional stream and wetland impacts	
	551	NC Department of Transportation	31.8	TV Tower rd.	No	Advanced acquisition property	
S	552	Rogers, Richard Trustee Rogers, Ann R Trustee	3.88	US 70	No	Access would require extending TV Tower Rd to parcel. Doing so would allow Store Master Funding to have a 2nd access point	
	553	Rogers, Richard Trustee Rogers, Ann R Trustee	6.56	US 70	No	Access would require additional wetland impacts or buying property from non-affected parcels	
	554	Johnson, Betty H	5.6	US 70	Yes	Access would require additional wetland impacts or buying property from non-affected parcels	
	555	Partlo Garner LLC	1.24	US 70	No	Access would require additional wetland impacts or buying property from non-affected parcels	

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
S	556	Buffaloe Mini Storage LLC	5.83	Walnut Dr	Yes	Access could be provided with a service road from US 70 to Walnut Dr.	
	557	Buffaloe Mini Storage LLC	4.67	Walnut Dr	Yes		
	558	Buffaloe Enterprises LLC	28.27	Walnut Dr	Yes		
	559	Buffaloe Enterprises LLC	3.57	Walnut Dr	Yes	Access could be provided with a service road from US 70 to Walnut Dr. (Access through adjoining parcel)	
	560	L & L Company LLC	22.37	US 70	No	Access could be provided with service road from US 70 to parcel	
	560A	L & L Company LLC	7.41	US 71	No	Access would require additional stream and wetland impacts	
	560B	Alexander, Randy	4.71	US 70	Yes	Access could be provided with service road that would run parallel to US 70 to parcel	
	561	Edge Of Auburn LLC	19.63	Rock Quarry Rd	No	Access could be provided with service road to Holly Brook Farm Rd.	
T	561A	Union B&T Co	0.11	Branch Rd.	No	Small undeveloped remnant remainder of the large tract.	
	562	Francis, Laura S	0.83	Branch Rd.	No	Small undeveloped remnant remainder of the large tract.	
	563	Union B&T Co	2.44	Battle Bridge Rd.	No	Small undeveloped remnant remainder of the large tract.	
	564	City of Raleigh	90.43	Auburn Knightdale Rd.	No	Access could be provided with service road from Battle Bridge Rd to parcel	
	565	Billy Adams Farms Inc	29.58	Auburn Knightdale Rd.	Yes	Access could be provided with service road running parallel to Auburn Knightdale to parcel	
	566	Davis, James Ray	2.52	Auburn Knightdale Rd.	Yes	Access could be provided with service road running parallel to Auburn Knightdale to parcel	
	567	Everhart, Rex M Everhart, Carol S	0.39	Auburn Knightdale Rd.	No	Small undeveloped remnant remainder of the large tract.	
	568	Burchette, Barbara Ann Glover	0.81	Auburn Knightdale Rd.	No	Small undeveloped remnant remainder of the large tract.	
	569	Jefferys, Grady B Jefferys, Thelma M	0.24	Auburn Knightdale Rd.	No	Small undeveloped remnant remainder of the large tract.	
	570	Sanok, Jacob J Sanok, Marylu	1.12	Auburn Knightdale Rd.	No	Access could be provided with service road running parallel to Auburn Knightdale	
	571	West, Nancy C	3.23	Auburn Knightdale Rd.	Yes		
	572	Glover, Wallace Edward Jr	1.53	Auburn Knightdale Rd.	No	Access would require large impacts to wetlands	
	573	Baker, Ted Preston Baker, Geraldine G	1.05	Auburn Knightdale Rd.	No	Access would require large impacts to wetlands	
	574	Bailey, Barry Bailey, Sue G	0.32	Auburn Knightdale Rd.	No	Small undeveloped remnant remainder of the large tract.	
U	575	Raynor, Bobby C Raynor, Margaret F	37.97	Leonard Rd.	No	Access could be provided with one service road running perpendicular from Leonard dr and another one running parellel to the C/A (access through adjoining parcel)	

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
U	575A	Raynor, Bobby C Raynor, Margaret F	10.06	Auburn Knightdale Rd.	No	Access across adjoining parcel	
	576	Raynor, Bobby C Raynor, Margaret F	12.6	Leonard Rd.	No	Access could be provided with one service road running perpendicular from Leonard dr and another one running parallel to the C/A	
	576A	Raynor, Bobby C Raynor, Margaret F	8.35	Auburn Knightdale Rd.	No	Access across adjoining parcel	
	577	Myrick, Billy S	12.27	Sidecreek Dr.	No	Access could be provided by extending Flower Blossom Cir to a service road that runs along the edge of large parcel	
	578	Powell, Jacob L Powell, Anthony J	2.72	No Access	No		
	579	Crenshaw, John C III Crenshaw, Laurie L	12.02	No Access	No		
	579A	Crenshaw, John C III Crenshaw, Laurie L	6.83	No Access	No	Access could be provided with one service road running perpendicular from Leonard dr and another one running parallel to the C/A	
	580	Hodge Road LLC	64.14	Scenic Woods Rd.	No	Access could be provided with service road running parallel to Poole Rd, but would require additional stream and wetland impacts	
	581	Paul, Linda Turner Mcdonald, Mary Dwight T Heirs	5.56	Poole Rd.	No		
V	582	Broadie, Andrew P Heirs	1.7	Poole Rd.	Yes	Access could be provided by extending Old Stone Mills St., but would require upgrading streets leading up to it	
	583	Stanford, Larry Stanford, Vickie T	0.83	Poole Rd.	Yes		
	584	Banks, Eugene Banks, Janet P	0.78	Poole Rd.	No	Access not allowed along Poole Rd due to interchange	
	585	Broadie, Andrew P Heirs	8.47	Poole Rd.	No	Access could be provided with service road off of Stoney Falls Way	
	586	Raleigh Rugby Football Club Inc	5.67	Poole Rd.	No	Access could be provided by extending Old Stone Mills St., but would require upgrading streets leading up to it	
	586A	Raleigh Rugby Football Club Inc	3.65	Poole Rd.	No	Access could be provided with service road off of Stoney Falls Way	
	587	Knightdale Estates Mhp Ltd Prtnrp	9.27	Lodge Rd.	No	Access could be provided with service roads off of Stoney Falls Way	
	588	Vater, Monica Wynn	0.7	Kemp Rd.	Yes	Access could be provided by realigning Kemp Rd. and running it parallel to the C/A	
	589	Gonzales, Ignacio Alcaraz, Alejandra	1.09	Kemp Rd.	Yes	Access could be provided by realigning Kemp Rd. and running it parallel to the C/A	
	590	Tripp, Misty Michelle	0.82	Kemp Rd.	Yes		
	591	Rosales, Salvador Peru	0.92	Kemp Rd.	Yes		
	592	Ennis, Mickey R Ennis, Rhonda M	0.89	Kemp Rd.	Yes		

SERVICE ROAD STUDY

TABLE 2-1: PARCEL EVALUATION

Area	Parcel ID.	Parcel Owner Name	Aprox. Acreage Remaining	Existing Access	Structure Remaining	Remarks	
						Further Analysis	No Further Analysis
V	593	Hernandez, Ernesto Hernandez, Silvia	0.87	Kemp Rd.	Yes	Access could be provided by realigning Kemp Rd. and running it parallel to the C/A	
	594	Tart, Harold Thurmond	0.84	Kemp Rd.	Yes		
	595	Miranda, German Beneraldo	0.75	Kemp Rd.	Yes		
	596	NC Department of Transportation	0.65	Kemp Rd.	No	Advanced acquisition property	
	597	NC Department of Transportation	0.29	Kemp Rd.	No	Advanced acquisition property	

3. DESIGN OPTIONS

3.1 SERVICE ROAD DESIGN

Those parcels with feasible options to provide new access (identified in green in Table 2-1) were carried forward in the study process. This step in the study process included the planning and the development of preliminary design alternatives for feasible service roads to land-locked parcels. Several factors were used in determining the location of each new service road including the location of the parcel, where the existing access is, and location of streams and wetlands. If possible, the new service road was developed to connect to the existing access road for the land-locked parcel. In these cases, the new service road would parallel the new controlled access limits and reconnect to the existing road. If there were two viable service road solutions that would serve the same set of parcels, both were brought forward in the design process and analyzed separately.

In addition to the factors utilized to determine the location of the new service road, certain design criteria were developed to guide the design of each service road. These criteria were developed to serve the land-locked parcel with safe and cost-effective access. The intended use and expected traffic volumes including vehicle mix were major considerations in developing the following design criteria:

- 1. Design Speed:** The design speed varies per service road. For service roads leading to a subdivision, a design speed of 25 mph was used in order to mimic the subdivision roads. Service roads leading to just a few parcels were designed at 30 mph with an anticipated posted speed of 25mph per the NCDOT Roadway Design Manual. These facilities are intended to be low volume (less than 400 ADT) roadways providing access only to local, mainly residential, properties. Design speed adjustments were made for unusual circumstances and unique property use situations, as necessary.
- 2. Typical Section:** Exhibits 3-1 and 3-2 show the two typical sections that were utilized in the design of service roads. For service roads leading to subdivisions, as shown in Exhibit 3-1, the Average Daily Traffic (ADT) is likely higher than 400 vehicle, and therefore required wider lanes and shoulders. Based on the NCDOT Roadway Design manual these roads were designed with two 11-foot lanes and 6-foot unpaved shoulders on each side. Service roads leading to just a few parcels utilized the typical section shown in Exhibit 3-2. These facilities were anticipated to have an ADT of less than 400 vehicles and therefore only require 9-foot lanes with 2-foot shoulders. Depending on the profile, roadside ditches would be provided to convey drainage away from the roadway facility and reduce future maintenance costs. Only major drainage conveyances would be included, as necessary.

SERVICE ROAD STUDY

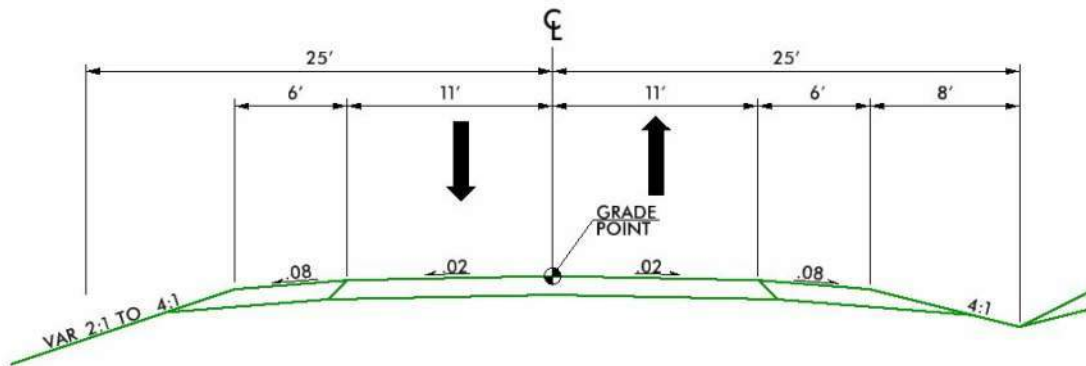


EXHIBIT 3-1: SUBDIVISION ROAD TYPICAL SECTION

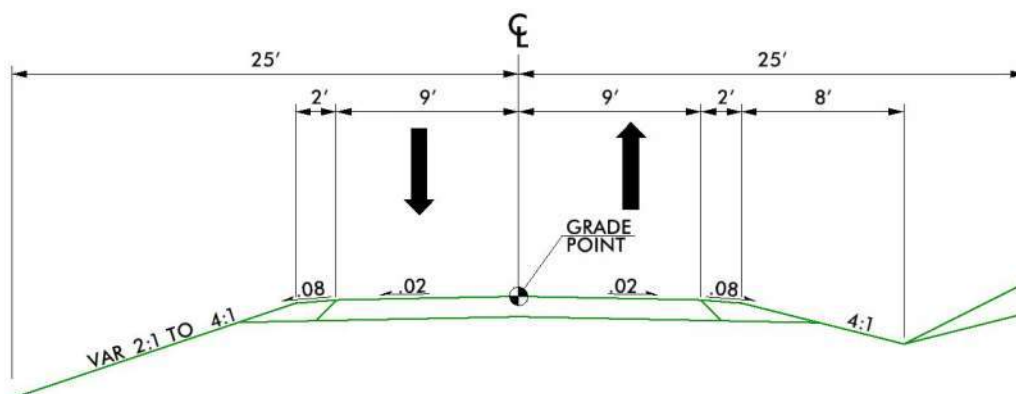


EXHIBIT 3-2: LOCAL ROAD TYPICAL SECTION

- 3. Alignment:** The alignments of the individual service roads varies based on property configurations. Each situation is unique and were treated as such to develop the best design solution. The goal was to minimize the loss of adjacent properties by paralleling the control of access portion of the facility as closely as possible. Where following the control of access is not an option or would result in an unusually long service road, the alignment would typically parallel or straddle the property line to balance the loss of property between the two adjacent parcels.

The alignments follow the design speed considerations as to minimum radii and T-type intersections were considered where appropriate. Super-elevation would not be proposed due to the low design speed of these facilities.

- 4. Grade:** The profile grade of the proposed service roads are in part dictated by the existing topography. To cost-effectively design these facilities, the service roads would need to follow the existing contour of the land closely to reduce cut and fill associated with significant departures from existing grades. Vertical grades were set such that adequate sight distances

are provided meeting the intended design speed of the facility. Unusually steep grades necessitating high cuts and fills were only considered if necessary.

5. **Hydraulic/Environmental Feature Crossings:** A few of the service roads crossed drainage features and possibly some stream and wetland areas. In these cases, efforts to avoid impacting these resources were made by adjusting the horizontal alignments as necessary. However, if unavoidable, effort was made to minimize the design “footprint” impacts to these environmental features to the extent possible by tightly controlling the profile and steepening side slopes as necessary through these areas. In the case of stream crossings, the nearest hydraulic crossing structure, upstream or downstream, would be used to evaluate and assist in the selection of the appropriate type and size of crossing conveyance to be considered in the design study.

3.2 COST QUANTIFICATION

With the facilities designed, the approximate construction cost of each service road was quantified using values provided from NCDOT. These quantities are typical of the type NCDOT estimates for functional designs. These quantities and costs include:

- **Pavement Items.** Includes new pavement, pavement widening, and pavement resurfacing in square yards.
- **Earthwork/Grading.** Typically include cut/fill, borrow earthwork as necessary.
- **Clearing.** Includes any necessary clearing for the service road.
- **Drainage.** Includes any box culverts necessary to construct the road.
- **ROW Cost.** Includes the necessary additional ROW outside of the control of access limits to contain the facility. Costs for this additional ROW were based on a prorated value for each parcel obtained through the Wake and Johnston County GIS/Mapping systems based on a per-acre or per-square foot cost plus the value of structures impacted.
- **Miscellaneous.** Includes a 15 percent contingency for structure items (e.g., culverts and bridges) and utility items (e.g., water lines, sewer, etc.) that may be necessary to construct the roadway or tie to the existing roadway.
- **Contingency.** Utilizes a 45 percent contingency to cover unforeseen elements that may need to be constructed with each facility.
- **Engineering.** Includes 15 percent to cover the development of the final designs and construction management of each service road.
- **Environmental Impacts.** Includes a value of \$80,594 per acre of wetlands impacted and \$594 per linear foot of stream impacts. These costs account for a 2:1 ratio of mitigation, so for every linear foot or acre of environmental impact, two linear feet or acres are mitigated. Wetland areas were rounded up to the nearest quarter acre. For the majority of the service roads, wetland and stream impacts were calculated using environmental surveys dated in 2017. If the service road went outside the survey boundary, GIS information was used to calculate impacts.

Comparative land and structure values were used to evaluate if construction costs were outweighed by associated costs of completely acquiring the remnant parcels. These costs did not take into account any loss of use, relocation cost differentials, or other impacts associated with losing all rights to the property by the owner. These costs included the straight forward land value costs based on current parcel tax values and approximate appraised values from the Wake and Johnston County GIS/Mapping systems and a prorated land value would be calculated for the remaining acreage. Structure and dwelling values would also be obtained from these resources. All estimates of property value and acquisition costs are approximate in nature and should not be used to determine actual appraised value or as the basis for any acquisition negotiations. These estimates are being used to reasonably evaluate the feasibility of providing access to impacted parcels along the project.

The designs for roads serving the impacted parcels are included in Appendix B. The supporting quantities and cost estimate data used to derive the construction cost for each land-locked parcel are included in Appendix C.

4. COST/BENEFIT ANALYSIS

With all the designs for the service roads developed and estimated costs compiled for each facility, the total acquisition cost versus the overall construction cost associated with providing permanent access to the land-locked parcels were calculated and are provided in Table 4-1. In some cases, construction of one service road would be required in order to provide access to another service road. In those scenarios, both service roads were analyzed separately to prove the worth of each road, but it is noted that one could not be built without the other. In areas with T-Type intersections, there are two alignments and therefore two roads. The name of each alignment is listed in Table 4-1, but they are quantified as a set.

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
R-2721									
D1	6	5.31	\$242,789	\$0	\$242,789	\$270,792	ROW: 1.56 Ac.	ROW: \$103,973	\$374,765
E1 & E2 or E3 & E4	14	1.1	\$144,994	\$0	\$144,994	\$1,252,448 (E1 & E2) or \$455,956 (E3 & E4)	E1 & E2: ROW: 2.73 Ac. E3 & E4: ROW: 1.85 Ac.	E1 & E2: \$399,455 E3 & E4: \$208,198	\$1,651,903 (E1 & E2) or \$664,155 (E3 & E4)
	16	0.45	\$25,000	\$0	\$25,000				
	17	0.4	\$25,000	\$400	\$25,400				
	18	0.34	\$14,655	\$0	\$14,655				
	19	0.48	\$25,000	\$0	\$25,000				
	20	0.46	\$25,000	\$0	\$25,000				
	21	0.23	\$13,068	\$0	\$13,068				
	23	0.3	\$25,000	\$0	\$25,000				
	24	0.42	\$25,000	\$3,050	\$28,050				
	25	0.37	\$25,000	\$0	\$25,000				
	26	0.82	\$27,500	\$0	\$27,500				
	27	0.44	\$5,000	\$0	\$5,000				
	28	0.44	\$25,000	\$32,981	\$57,981				
	29	0.45	\$25,000	\$17,788	\$42,788				
	30	0.45	\$25,000	\$18,338	\$43,338				
	31	0.45	\$25,000	\$500	\$25,500				
	32	0.46	\$25,000	\$21,979	\$46,979				
	33	0.57	\$25,000	\$47,482	\$72,482				
	34	0.5	\$25,000	\$0	\$25,000				
	35	0.6	\$25,000	\$0	\$25,000				
	36	0.57	\$25,000	\$24,571	\$49,571				
	37	0.69	\$25,000	\$0	\$25,000				
	38	0.69	\$25,000	\$0	\$25,000				
	39	0.73	\$27,500	\$0	\$27,500				
	40	0.69	\$25,000	\$29,365	\$54,365				
	41	0.69	\$25,000	\$50,947	\$75,947				
	42	0.69	\$25,000	\$87,320	\$112,320				
	43	0.71	\$27,500	\$57,931	\$85,431				
	44	0.76	\$27,500	\$0	\$27,500				
	46	0.7	\$27,500	\$0	\$93,260				
	47	0.55	\$25,000	\$65,760	\$73,513				
	48	0.93	\$31,250	\$48,513	\$31,250				
	49	0.48	\$25,000	\$0	\$51,254				
	50	0.48	\$25,000	\$26,254	\$25,000				
	51	0.96	\$31,250	\$0	\$31,250				
	52	0.96	\$31,250	\$0	\$53,859				
	53	0.95	\$31,250	\$22,609	\$194,168				
	54	0.55	\$25,000	\$162,918	\$72,370				
	55	0.48	\$25,000	\$47,370	\$25,200				
	56	0.44	\$25,000	\$200	\$25,000				
	57	0.45	\$25,000	\$0	\$25,000				
	58	0.48	\$25,000	\$0	\$25,000				
	59	0.52	\$25,000	\$0	\$81,811				
	60	0.89	\$31,250	\$56,811	\$129,559				
	61	0.76	\$27,500	\$98,309	\$103,655				
	62	0.75	\$24,750	\$76,155	\$24,750				
	63	0.5	\$25,000	\$0	\$92,573				
	64	0.49	\$25,000	\$67,573	\$47,045				
65	0.49	\$25,000	\$22,045	\$96,668					
66	0.71	\$27,500	\$71,668	\$98,623					
67	0.71	\$27,500	\$71,123	\$45,403					
68	0.85	\$31,250	\$17,903	\$57,463					
69	0.65	\$25,000	\$26,213	\$41,644					
70	0.63	\$25,000	\$16,644	\$25,000					
71	1.08	\$37,500	\$0	\$140,390					
72	0.51	\$25,000	\$102,890	\$120,334					
73	0.58	\$25,000	\$95,334	\$25,000					
74	0.45	\$25,000	\$0	\$25,000					

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
E1 & E2 or E3 & E4	75	0.46	\$25,000	\$0	\$47,942	\$1,252,448 (E1 & E2) or \$455,956 (E3 & E4)	E1 & E2: ROW: 2.73 Ac. E3 & E4: ROW: 1.85 Ac.	E1 & E2: \$399,455 E3 & E4: \$208,198	\$1,651,903 (E1 & E2) or \$664,155 (E3 & E4)
	76	0.48	\$25,000	\$22,942	\$71,333				
	77	0.47	\$25,000	\$46,333	\$25,000				
	78	0.51	\$25,000	\$0	\$55,110				
	79	0.47	\$25,000	\$30,110	\$30,570				
	80	0.57	\$25,000	\$5,570	\$70,191				
	81	0.45	\$25,000	\$45,191	\$25,000				
	82	0.68	\$25,000	\$0	\$48,180				
	83	0.43	\$25,000	\$23,180	\$25,000				
	84	1.01	\$30,000	\$0	\$30,000				
	85	0.69	\$25,000	\$0	\$25,000				
	86	0.82	\$31,250	\$0	\$33,440				
	87	0.52	\$25,000	\$2,190	\$25,000				
	88	0.61	\$25,000	\$0	\$25,000				
	89	0.82	\$31,250	\$0	\$66,587				
	90	1.78	\$30,000	\$35,337	\$30,000				
	91	3.11	\$50,000	\$0	\$131,409				
	92	0.6	\$25,000	\$81,409	\$79,023				
	93	0.83	\$31,250	\$54,023	\$31,250				
	94	0.86	\$31,250	\$0	\$52,025				
	95	0.54	\$25,000	\$20,775	\$25,000				
	96	0.53	\$25,000	\$0	\$48,043				
	97	0.74	\$27,500	\$23,043	\$85,524				
	98	6.37	\$186,323	\$58,024	\$188,213				
	99	0.52	\$25,000	\$1,890	\$25,000				
	100	1.93	\$37,500	\$0	\$37,500				
	101	1.59	\$37,500	\$0	\$39,500				
	102	1.16	\$30,000	\$2,000	\$59,116				
	103	1.77	\$28,125	\$29,116	\$31,125				
	104	0.69	\$25,000	\$3,000	\$25,000				
	105	0.86	\$27,500	\$0	\$27,500				
	106	0.49	\$25,000	\$0	\$25,000				
	107	0.48	\$25,000	\$0	\$52,620				
	108	0.49	\$25,000	\$27,620	\$54,820				
	109	0.73	\$27,500	\$29,820	\$27,500				
	110	1.09	\$37,500	\$0	\$79,224				
	111	0.98	\$31,250	\$41,724	\$35,220				
	112	0.47	\$25,000	\$3,970	\$44,734				
	113	0.48	\$25,000	\$19,734	\$25,000				
	114	0.54	\$25,000	\$0	\$77,552				
	115	0.46	\$25,000	\$52,552	\$92,420				
	116	0.41	\$25,000	\$67,420	\$56,353				
	117	0.47	\$25,000	\$31,353	\$35,270				
	118	0.5	\$25,000	\$10,270	\$25,100				
	119	0.48	\$25,000	\$100	\$72,913				
	120	0.48	\$25,000	\$47,913	\$25,000				
	121	0.45	\$25,000	\$0	\$25,000				
	122	0.48	\$25,000	\$0	\$50,201				
	123	0.45	\$25,000	\$25,201	\$25,000				
	124	0.46	\$25,000	\$0	\$99,952				
	125	0.44	\$25,000	\$74,952	\$25,000				
	126	0.43	\$25,000	\$0	\$25,650				
	127	0.47	\$2,000	\$650	\$2,000				
	128	0.52	\$25,000	\$0	\$47,948				
	129	0.49	\$2,000	\$22,948	\$25,520				
	130	0.5	\$25,000	\$23,520	\$99,029				
	131	0.51	\$25,000	\$74,029	\$37,290				
	132	0.51	\$25,000	\$12,290	\$25,000				
	133	0.51	\$25,000	\$0	\$25,000				
	134	0.53	\$25,000	\$0	\$91,051				

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
E1 & E2 or E3 & E4	135	0.3	\$6,250	\$66,051	\$6,250	\$1,252,448 (E1 & E2) or \$455,956 (E3 & E4)	E1 & E2: ROW: 2.73 Ac. E3 & E4: ROW: 1.85 Ac.	E1 & E2: \$399,455 E3 & E4: \$208,198	\$1,651,903 (E1 & E2) or \$664,155 (E3 & E4)
	136	0.28	\$6,250	\$0	\$6,250				
	137	0.54	\$25,000	\$0	\$25,000				
	138	0.49	\$25,000	\$0	\$25,000				
	139	0.55	\$25,000	\$0	\$49,904				
	140	0.52	\$25,000	\$24,904	\$56,830				
	141	0.52	\$25,000	\$31,830	\$25,000				
	142	0.56	\$12,500	\$0	\$12,500				
	143	0.52	\$25,000	\$0	\$41,570				
	144	0.53	\$25,000	\$16,570	\$25,000				
	145	0.49	\$25,000	\$0	\$25,000				
	146	0.54	\$25,000	\$0	\$25,000				
	147	0.57	\$25,000	\$0	\$25,000				
	148	0.47	\$25,000	\$0	\$25,000				
	149	0.49	\$25,000	\$0	\$25,000				
	150	0.47	\$25,000	\$0	\$25,000				
	151	0.37	\$25,000	\$0	\$25,000				
	152	0.43	\$25,000	\$0	\$26,830				
	153	0.43	\$25,000	\$1,830	\$34,480				
	154	0.57	\$25,000	\$9,480	\$25,460				
	155	0.85	\$31,250	\$460	\$31,250				
	156	0.4	\$25,000	\$0	\$25,000				
	157	0.39	\$25,000	\$0	\$25,000				
	158	0.53	\$25,000	\$0	\$25,000				
	159	2.15	\$52,500	\$0	\$68,651				
	160	2.35	\$50,000	\$16,151	\$106,227				
	161	0.42	\$25,000	\$56,227	\$84,839				
	162	0.4	\$25,000	\$59,839	\$25,000				
	163	0.41	\$25,000	\$0	\$25,300				
	164	0.45	\$25,000	\$300	\$26,090				
	165	0.24	\$20,000	\$1,090	\$28,706				
	166	3.83	\$18,637	\$8,706	\$18,637				
	168	0.61	\$25,000	\$33,636	\$58,636				
	169	0.48	\$12,500	\$0	\$12,500				
	170	0.47	\$25,000	\$0	\$25,000				
	171	0.38	\$25,000	\$12,705	\$37,705				
	172	0.5	\$25,000	\$0	\$25,000				
	173	0.49	\$25,000	\$870	\$25,870				
G1	177	8.49	\$429,433	\$0	\$429,433	\$111,969	ROW: 0.23 Ac. Stream: 171 LF Wetland: 0.14 Ac.	ROW: \$10,222 Stream: \$101,574 Wetland: \$20,149	\$243,913
G2 or G5	178	1.33	\$75,000	\$130,735	\$205,735	\$113,955 (G2) or \$140,622 (G5)	G2: ROW: 0.11 Ac. G5: ROW: 0.28 Ac.	G2: ROW: \$11,577 G5: ROW: \$32,020	\$125,532 (G2) or \$172,642 (G5)
	179	1.78	\$75,000	\$153,856	\$228,856				
	180	2.03	\$90,000	\$188,902	\$278,902				
	181	1.68	\$75,000	\$111,173	\$186,173				
	182	0.8	\$75,000	\$150,709	\$225,709				
	183	0.8	\$74,074	\$127,639	\$201,713				
	184	0.75	\$38,265	\$132,506	\$170,771				
	185	0.69	\$75,000	\$125,387	\$200,387				
	186	0.69	\$75,000	\$124,348	\$199,348				
	187	0.69	\$75,000	\$123,672	\$198,672				
	188	0.7	\$75,000	\$134,324	\$209,324				
	189	0.94	\$75,000	\$128,521	\$203,521				
	190	1.59	\$75,000	\$100,649	\$175,649				
	191	1.61	\$75,000	\$108,944	\$183,944				
	192	1.07	\$75,000	\$114,651	\$189,651				
G2 or G5	193	1.65	\$75,000	\$154,016	\$229,016	\$113,955 (G2) or \$140,622 (G5)	G2: ROW: 0.11 Ac. G5: ROW: 0.28 Ac.	G2: ROW: \$11,577 G5: ROW: \$32,020	\$125,532 (G2) or \$172,642 (G5)
	193A	2.56	\$86,617	\$168,222	\$254,839				

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
G3	178	1.33	\$75,000	\$130,735	\$205,735	\$684,787	ROW: 2.43 Ac. Stream: 57 LF	ROW: \$596,960 Stream: \$33,858	\$1,315,605
	179	1.78	\$75,000	\$153,856	\$228,856				
	180	2.03	\$90,000	\$188,902	\$278,902				
	181	1.68	\$75,000	\$111,173	\$186,173				
	182	0.8	\$75,000	\$150,709	\$225,709				
	183	0.8	\$74,074	\$127,639	\$201,713				
	184	0.75	\$38,265	\$132,506	\$170,771				
	185	0.69	\$75,000	\$125,387	\$200,387				
	186	0.69	\$75,000	\$124,348	\$199,348				
	187	0.69	\$75,000	\$123,672	\$198,672				
	188	0.7	\$75,000	\$134,324	\$209,324				
	189	0.94	\$75,000	\$128,521	\$203,521				
	190	1.59	\$75,000	\$100,649	\$175,649				
	191	1.61	\$75,000	\$108,944	\$183,944				
	192	1.07	\$75,000	\$114,651	\$189,651				
	193	1.65	\$75,000	\$154,016	\$229,016				
	193A	2.56	\$86,617	\$168,222	\$254,839				
	194	0.75	\$57,990	\$231,371	\$289,361				
	196	0.94	\$75,000	\$0	\$180,142				
	197	0.67	\$76,571	\$105,142	\$125,407				
	198	0.71	\$77,808	\$48,836	\$77,808				
	199	1.87	\$131,478	\$0	\$278,348				
G4	200	0.87	\$69,600	\$146,870	\$162,500	\$499,088	ROW: 2.62 Ac.	ROW: \$370,512	\$869,600
	201	1.79	\$125,300	\$92,900	\$252,096				
	202	0.89	\$70,851	\$126,796	\$127,594				
	203	5.54	\$137,129	\$56,743	\$137,129				
	204	5.96	\$172,406	\$0	\$172,406				
H1	217	0.61	\$51,275	\$184,753	\$236,028	\$266,219	ROW: 1.38 Ac.	ROW: \$91,757	\$357,976
	218	0.69	\$58,000	\$206,076	\$264,076				
	219	0.7	\$58,000	\$140,646	\$198,646				
	220	0.7	\$58,000	\$125,770	\$183,770				
	222	0.71	\$58,000	\$117,757	\$175,757				
	223	0.72	\$58,000	\$100,817	\$158,817				
	224	0.6	\$46,400	\$33,669	\$80,069				
	225	0.76	\$58,000	\$122,709	\$180,709				
	226	0.84	\$58,000	\$126,348	\$184,348				
	227	0.86	\$58,000	\$143,501	\$201,501				
	228	1.56	\$64,246	\$177,163	\$241,409				
	230	0.97	\$58,000	\$122,798	\$180,798				
	231	0.73	\$58,000	\$162,032	\$220,032				
H2	211	0.7	\$11,765	\$0	\$11,765	\$421,185	ROW: 2 Ac.	ROW: \$210,729	\$631,914
	212	1.46	\$66,853	\$0	\$66,853				
	213	0.82	\$55,953	\$0	\$55,953				
	214	0.62	\$52,116	\$114,587	\$166,703				
H3	237	4.01	\$155,664	\$0	\$155,664	\$233,859	ROW: 1.48 Ac.	ROW: \$83,780	\$317,638
I1	243	8.8	\$325,840	\$0	\$325,840	\$471,135	ROW: 3.24 Ac. Wetland: 0.36 Ac.	ROW: \$129,993 Wetland: \$30,223	\$631,351
	244	9.71	\$299,991	\$0	\$299,991				
I2	244A	2.29	\$70,750	\$0	\$70,750	\$242,368	ROW: 1.44 Ac.	ROW: \$78,705	\$321,073
	245	0.34	\$19,440	\$0	\$19,440				
	246	2.69	\$56,490	\$0	\$56,490				
	247	22.36	\$975,527	\$0	\$975,527				
	248	6.2	\$168,600	\$0	\$168,600				
	249	1.1	\$52,200	\$44,071	\$96,271				
	250	1.9	\$56,200	\$56,067	\$112,267				
	251	1.14	\$53,880	\$163,166	\$217,046				
J1	260	14.93	\$440,061	\$0	\$440,061	\$56,412	ROW: 0.13 Ac. Stream: 115 LF	ROW: \$4,766 Stream: \$68,310	\$129,488

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

TABLE 4: R-2828 COMPARISON									
Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
R-2828									
K1	261	0.88	\$72,449	\$0	\$72,449	\$708,012	ROW: 4.01 Ac. Wetland: 0.05 Ac.	ROW: \$32,849 Wetland: \$10,074	\$750,936
	262	1.91	\$32,207	\$0	\$32,207				
	263	11.09	\$241,258	\$0	\$241,258				
L1	266	20.14	\$481,034	\$0	\$481,034	\$67,832	ROW: 0.14 Ac.	ROW: \$6,136	\$73,969
L2 & L2A	308	5.91	\$153,660	\$0	\$153,660	\$139,153	ROW: 0.8 Ac.	ROW: \$17,069	\$156,222
	309	12.51	\$331,569	\$24,359	\$355,928				
	310	0.92	\$33,740	\$107,276	\$141,016				
L3	267	18.07	\$384,286	\$106,539	\$490,825	\$336,483	ROW: 2.51 Ac.	ROW: \$116,376	\$452,860
	268	1.32	\$50,712	\$151,859	\$202,571				
	269	6.29	\$145,569	\$177,630	\$323,199				
	270	3.91	\$67,500	\$276,081	\$343,581				
	271	1.09	\$45,000	\$246,319	\$291,319				
	272	1.23	\$45,000	\$295,470	\$340,470				
	273	2	\$58,500	\$328,159	\$386,659				
	274	0.6	\$45,000	\$306,762	\$351,762				
	275	0.99	\$45,000	\$230,235	\$275,235				
	276	0.49	\$45,000	\$277,702	\$322,702				
	277	0.49	\$45,000	\$250,269	\$295,269				
	278	0.46	\$45,000	\$229,912	\$274,912				
	279	0.59	\$45,000	\$226,453	\$271,453				
	280	1.07	\$45,000	\$244,011	\$289,011				
	281	2.48	\$63,000	\$359,460	\$422,460				
	282	3.71	\$0	\$0	\$0				
	283	2.43	\$58,500	\$271,550	\$330,050				
	284	0.84	\$45,000	\$351,643	\$396,643				
	285	0.72	\$45,000	\$213,568	\$258,568				
	286	0.71	\$45,000	\$232,380	\$277,380				
	287	0.64	\$45,000	\$255,809	\$300,809				
	288	0.59	\$45,000	\$281,683	\$326,683				
	290	0.55	\$45,000	\$260,938	\$305,938				
	291	1.05	\$45,000	\$265,939	\$310,939				
	293	0.53	\$45,000	\$280,461	\$325,461				
	294	0.48	\$45,000	\$280,461	\$379,881				
	295	0.48	\$45,000	\$334,881	\$282,353				
	296	0.66	\$45,000	\$237,353	\$297,087				
	298	0.17	\$0	\$0	\$0				
	299	1.31	\$45,000	\$284,742	\$329,742				
	300	0.49	\$45,000	\$222,956	\$267,956				
	301	0.76	\$45,000	\$233,149	\$278,149				
	302	0.8	\$45,000	\$261,726	\$306,726				
	303	0.55	\$45,000	\$218,547	\$263,547				
	304	0.68	\$45,000	\$262,570	\$307,570				
	305	0.85	\$40,691	\$235,279	\$275,970				
	307	0.72	\$2,000	\$6,900	\$8,900				
L4	335	14.35	\$280,368	\$0	\$280,368	\$122,146	ROW: 0.7 Ac.	ROW: \$17,392	\$139,538
	336	3.92	\$99,474	\$0	\$99,474				
	337	5.02	\$111,501	\$0	\$111,501				
	338	21.63	\$475,171	\$0	\$475,171				
	339	1.79	\$26,545	\$0	\$26,545				
L5	306	1.06	\$41,355	\$320,028	\$361,383	\$49,361	ROW: 0.18 Ac.	ROW: \$8,617	\$57,978
M1	343	4.02	\$81,233	\$0	\$81,233	\$280,063	ROW: 1.76 Ac.	ROW: \$27,844	\$307,907
	344	15.24	\$290,100	\$0	\$290,100				
M2	340	7.1	\$139,255	\$0	\$139,255	\$506,675	ROW: 4.29 Ac.	ROW: \$100,342	\$607,017
	341	12.08	\$312,958	\$0	\$312,958				
	342	49.27	\$1,126,127	\$0	\$1,126,127				
N1	348	8.99	\$194,284	\$233,093	\$427,377	\$127,349	ROW: 0.8 Ac.	ROW: \$20,800	\$148,149

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
N2	351	8.15	\$102,542	\$0	\$102,542	\$950,152	ROW: 5.22 Ac. Stream: 195 LF Wetland: 0.44 Ac.	ROW: \$98,277 Stream: \$115,830 Wetland: \$40,297	\$1,204,556
	352	9.44	\$175,760	\$0	\$175,760				
	353	10.71	\$213,885	\$0	\$213,885				
	355	20.61	\$330,486	\$0	\$330,486				
N3	354	1.4	\$41,183	\$93,592	\$134,775	\$216,348	ROW: 1.35 Ac.	ROW: \$38,880	\$255,228
N3 & N4	355A	5.21	\$83,544	\$0	\$83,544	\$463,176	ROW: 2.50 Ac.	ROW: \$159,951	\$623,128
P1	372	9.27	\$174,516	\$0	\$174,516	\$5,804,023	ROW: 19.86 Ac. Stream: 1188 LF Wetland: 0.54 Ac.	ROW: \$281,453 Stream: \$705,672 Wetland: \$50,371	\$6,841,519
	373	44.87	\$499,107	\$0	\$499,107				
	374	79.75	\$1,106,810	\$0	\$1,106,810				
	375	58.62	\$459,363	\$0	\$459,363				
	376	41.44	\$73,855	\$0	\$73,855				

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Q1	379	59.06	\$585,544	\$0	\$585,544	\$209,048	ROW: 0.31 Ac. Stream: 141 LF	ROW: \$3966 Streams: \$83,754	\$296,768
	379A	1.12	\$12,320	\$0	\$12,320				
Q2 or Q3	380	37.28	\$538,631	\$0	\$538,631	Q2: \$308,504	Q2: ROW: 1.52 Ac. Stream: 116 LF Wetland: 0.03 Ac.	Q2: ROW: \$29,445 Stream: \$68,904 Wetland: \$10,074	Q2: \$416,927
	381	64.41	\$920,548	\$0	\$920,548	Q3: \$44,969	Q3: ROW: 0.03 Ac.	Q3: ROW: \$880	Q3: \$45,849
Q4	382	3.72	\$80,800	\$0	\$80,800	\$432,466	ROW: 2.9 Ac.	ROW: \$92,035	\$524,501
	383	1.18	\$15,600	\$0	\$15,600				
	384	0.23	\$10,800	\$0	\$10,800				
	385	0.24	\$10,800	\$0	\$10,800				
	386	0.47	\$11,880	\$107,104	\$118,984				
	387	0.22	\$10,800	\$0	\$10,800				
	388	0.24	\$6,000	\$0	\$6,000				
	389	0.24	\$6,000	\$0	\$6,000				
	390	0.24	\$12,000	\$0	\$12,000				
	391	0.46	\$13,200	\$111,915	\$125,115				
	392	0.24	\$12,000	\$0	\$12,000				
	393	0.23	\$12,000	\$0	\$12,000				
	394	0.24	\$12,000	\$0	\$12,000				
	395	0.24	\$10,800	\$0	\$10,800				
	396	0.48	\$11,880	\$74,481	\$86,361				
	397	0.96	\$12,960	\$73,537	\$86,497				
	398	0.23	\$7,200	\$0	\$7,200				
	399	0.25	\$7,200	\$0	\$7,200				
	400	0.24	\$600	\$0	\$600				
	401	0.24	\$600	\$0	\$600				
	402	0.24	\$7,200	\$0	\$7,200				
	403	0.24	\$7,200	\$0	\$7,200				
	404	0.25	\$7,200	\$0	\$7,200				
	405	0.25	\$7,200	\$0	\$7,200				
	406	0.48	\$10,800	\$92,041	\$102,841				
	407	0.24	\$7,200	\$0	\$7,200				
	408	0.25	\$7,200	\$0	\$7,200				
	409	0.25	\$7,200	\$0	\$7,200				
	410	0.25	\$7,200	\$0	\$7,200				
	411	0.25	\$7,200	\$0	\$7,200				
	412	0.24	\$7,200	\$0	\$7,200				
	413	0.26	\$7,200	\$0	\$7,200				
	414	0.23	\$7,200	\$0	\$7,200				
	415	0.29	\$12,000	\$0	\$12,000				
	416	0.31	\$12,000	\$63,222	\$75,222				
	417	0.24	\$12,000	\$60,875	\$72,875				
	418	0.24	\$12,000	\$0	\$12,000				
	419	0.48	\$13,200	\$74,197	\$87,397				

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
Q4	420	0.48	\$12,000	\$101,429	\$113,429	\$432,466	ROW: 2.9 Ac.	ROW: \$92,035	\$524,501
	421	0.48	\$12,000	\$64,804	\$76,804				
	422	0.96	\$14,400	\$72,314	\$86,714				
	423	0.25	\$12,000	\$161,808	\$173,808				
	424	0.24	\$12,000	\$0	\$12,000				
	425	0.49	\$12,000	\$0	\$12,000				
	426	0.24	\$12,000	\$0	\$12,000				
	427	0.24	\$2,400	\$0	\$2,400				
	428	0.24	\$2,400	\$0	\$2,400				
	429	0.24	\$2,400	\$0	\$2,400				
	430	0.25	\$2,400	\$0	\$2,400				
	431	0.24	\$2,400	\$0	\$2,400				
	432	0.24	\$6,000	\$0	\$6,000				
	433	0.24	\$6,000	\$0	\$6,000				
	434	0.24	\$6,000	\$0	\$6,000				
	435	0.48	\$18,000	\$0	\$18,000				
	436	0.47	\$13,200	\$56,946	\$70,146				
	437	0.49	\$12,000	\$57,697	\$69,697				
	438	0.72	\$14,400	\$36,909	\$51,309				
	439	0.48	\$18,000	\$51,423	\$69,423				
	440	0.24	\$12,000	\$0	\$12,000				
	441	0.24	\$12,000	\$0	\$12,000				
	442	0.48	\$13,200	\$55,130	\$68,330				
	443	0.25	\$12,000	\$0	\$12,000				
	444	0.25	\$6,000	\$0	\$6,000				
	445	0.24	\$12,000	\$72,497	\$84,497				
	446	0.24	\$12,000	\$0	\$12,000				
	447	0.24	\$12,000	\$0	\$12,000				
	448	0.25	\$6,000	\$0	\$6,000				
	449	0.49	\$13,200	\$65,568	\$78,768				
	450	0.5	\$21,600	\$121,525	\$143,125				
	451	0.24	\$12,000	\$0	\$12,000				
	452	0.25	\$12,000	\$0	\$12,000				
	453	0.25	\$12,000	\$0	\$12,000				
	454	0.24	\$12,000	\$0	\$12,000				
	455	0.24	\$12,000	\$0	\$12,000				
	456	0.29	\$12,000	\$0	\$12,000				
	457	0.25	\$12,000	\$0	\$12,000				
	458	0.23	\$12,000	\$0	\$12,000				
	459	0.24	\$12,000	\$0	\$12,000				
	460	0.24	\$6,000	\$0	\$6,000				
	461	0.25	\$6,000	\$0	\$6,000				
	462	0.25	\$6,000	\$0	\$6,000				
	463	0.27	\$6,000	\$0	\$6,000				
	464	0.25	\$3,600	\$0	\$3,600				
	465	0.26	\$3,600	\$0	\$3,600				
	466	0.27	\$3,600	\$0	\$3,600				
	467	0.28	\$600	\$0	\$600				
	468	0.24	\$4,200	\$0	\$4,200				
	469	0.24	\$3,000	\$0	\$3,000				
	470	0.23	\$3,600	\$0	\$3,600				
	471	0.23	\$9,600	\$0	\$9,600				
	472	0.81	\$14,400	\$60,582	\$74,982				
	473	0.64	\$13,200	\$97,469	\$110,669				
	474	0.64	\$13,200	\$0	\$13,200				
	475	0.29	\$12,000	\$0	\$12,000				
	476	0.26	\$12,000	\$205,847	\$217,847				
	477	0.25	\$12,000	\$0	\$12,000				
	478	0.25	\$12,000	\$0	\$12,000				
	479	0.47	\$13,200	\$55,591	\$68,791				
	480	0.51	\$13,200	\$77,656	\$90,856				

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
Q4	481	0.48	\$13,200	\$0	\$13,200	\$432,466	ROW: 2.9 Ac.	ROW: \$92,035	\$524,501
	482	0.45	\$13,200	\$131,950	\$145,150				
	483	0.48	\$13,200	\$89,711	\$102,911				
	484	0.26	\$5,400	\$0	\$5,400				
	485	0.24	\$5,400	\$0	\$5,400				
	486	0.24	\$10,800	\$0	\$10,800				
	487	0.2	\$10,800	\$0	\$10,800				
	488	0.24	\$10,800	\$0	\$10,800				
	489	0.25	\$12,000	\$0	\$12,000				
	490	0.26	\$12,000	\$74,403	\$86,403				
	491	0.26	\$12,000	\$0	\$12,000				
	492	0.5	\$11,880	\$107,447	\$119,327				
	493	0.48	\$11,880	\$52,230	\$64,110				
	494	0.24	\$7,200	\$0	\$7,200				
	495	0.27	\$7,200	\$0	\$7,200				
	496	0.23	\$7,200	\$0	\$7,200				
	497	0.24	\$7,200	\$0	\$7,200				
	498	0.79	\$14,400	\$171,802	\$186,202				
	498A	0.25	\$12,000	\$0	\$12,000				
	499	0.32	\$12,000	\$0	\$12,000				
	500	0.3	\$7,200	\$0	\$7,200				
	501	0.23	\$5,400	\$0	\$5,400				
	502	0.26	\$5,400	\$0	\$5,400				
	503	0.26	\$5,400	\$0	\$5,400				
	504	0.24	\$5,400	\$0	\$5,400				
	505	0.22	\$5,400	\$0	\$5,400				
	506	0.33	\$5,400	\$0	\$5,400				
	507	0.24	\$7,200	\$0	\$7,200				
	508	0.24	\$7,200	\$0	\$7,200				
	509	0.25	\$7,200	\$0	\$7,200				
	510	0.22	\$4,800	\$0	\$4,800				
	511	0.23	\$4,800	\$0	\$4,800				
	512	0.49	\$13,200	\$140,686	\$153,886				
	513	0.28	\$12,000	\$0	\$12,000				
	514	0.48	\$11,880	\$129,789	\$141,669				
	515	0.24	\$10,800	\$0	\$10,800				
	516	0.22	\$10,800	\$0	\$10,800				
	517	0.23	\$10,800	\$0	\$10,800				
	518	0.24	\$10,800	\$109,938	\$120,738				
	519	0.28	\$10,800	\$0	\$10,800				
	520	0.31	\$7,200	\$0	\$7,200				
	521	0.32	\$7,200	\$0	\$7,200				
	522	0.48	\$11,880	\$82,922	\$94,802				
	523	0.48	\$11,880	\$0	\$11,880				
	524	0.24	\$10,800	\$0	\$10,800				
	525	0.24	\$10,800	\$0	\$10,800				
	526	0.49	\$10,800	\$123,611	\$134,411				
	527	0.25	\$10,800	\$0	\$10,800				
	528	0.24	\$10,800	\$0	\$10,800				
	529	0.21	\$10,800	\$0	\$10,800				
	530	0.23	\$7,200	\$0	\$7,200				
	531	0.25	\$7,200	\$0	\$7,200				
	532	0.28	\$7,200	\$0	\$7,200				
	533	0.29	\$12,000	\$0	\$12,000				
	534	0.25	\$12,000	\$0	\$12,000				
	535	0.45	\$13,200	\$47,708	\$60,908				
	536	0.47	\$13,200	\$0	\$13,200				
	537	0.24	\$12,000	\$0	\$12,000				
	538	0.24	\$12,000	\$0	\$12,000				
Q5	539	1.23	\$33,825	\$0	\$33,825	\$147,692	ROW: 0.56 Ac. Stream: 156 LF	ROW: \$12,600 Stream: \$92,664	\$252,956

SERVICE ROAD STUDY

TABLE 4-1: COST COMPARISON

Service Road ID	Parcel ID.	Aprox. Acreage Remaining	Remnant Value (\$)	Structure Cost (\$)	Parcel Buyout (\$)	Road Construction Cost (\$)	ROW & Environmental		Total Cost (\$)
							Impact	Cost (\$)	
R1	545A	0	\$0	\$0	\$0	\$295,683	ROW: 2.25 Ac. Stream: 449 LF Wetland: 0.05 Ac.	ROW: \$22,680 Stream: \$266,706 Wetland: \$10,074	\$595,143
	546A	0.22	\$3,300	\$0	\$3,300				
	547A	2.39	\$35,116	\$63,821	\$98,937				
	548A	1.91	\$27,887	\$0	\$27,887				
R2	541	2.95	\$65,259	\$203,930	\$269,189	\$2,159,251	ROW: 12.01 Ac. Stream: 386 LF Wetland: 0.05 Ac.	ROW: \$194,159 Stream: \$229,284 Wetland: \$10,074	\$2,606,261
	541A	0.33	\$8,250	\$0	\$8,250				
	541B	1.85	\$50,875	\$0	\$50,875				
	541C	2	\$55,000	\$142,317	\$197,317				
	541D	2.02	\$55,300	\$0	\$55,300				
	541E	1.81	\$56,200	\$187,702	\$243,902				
	541F	4.28	\$89,200	\$206,139	\$295,339				
	542	2.35	\$60,250	\$0	\$60,250				
	543	28.07	\$374,650	\$255,558	\$630,208				
	544	4.98	\$139,500	\$246,973	\$386,473				
	545	44.78	\$668,439	\$0	\$668,439				
	546	10.68	\$160,200	\$32,450	\$192,650				
	547	3.81	\$55,979	\$0	\$55,979				
	548	9.11	\$133,009	\$8,050	\$141,059				
	549	5.54	\$68,966	\$0	\$68,966				
S1	552	3.88	\$77,712	\$0	\$77,712	\$382,846	ROW: 2.18 Ac.	ROW: \$42,993	\$425,839
S2	560	22.37	\$328,694	\$0	\$328,694	\$707,268	ROW: 3.33 Ac.	ROW: \$150,011	\$857,280
	560B	4.71	\$205,725	\$1,853,481	\$2,059,206				
S3	556	5.83	\$1,142,796	\$2,108,619	\$3,251,415	\$237,324	ROW: 1.22 Ac.	ROW: \$31,720	\$269,044
	557	4.67	\$223,170	\$32,900	\$256,070				
	558	28.27	\$1,125,106	\$0	\$1,125,106				
	559	3.57	\$166,177	\$0	\$166,177				
S4	561	19.63	\$279,514	\$0	\$279,514	\$783,363	ROW: 3.69 Ac. Stream: 274 LF	ROW: \$55,016 Stream: \$162,756	\$1,001,135
T1	564	90.43	\$2,351,180	\$0	\$2,351,180	\$113,547	ROW: 0.59 Ac.	ROW: \$12,617	\$126,164
T2	570	1.12	\$31,360	\$0	\$31,360	\$241,648	ROW: 1.49 Ac.	ROW: \$28,762	\$270,410
	571	3.23	\$85,165	\$22,996	\$108,161				
T3	565	29.58	\$307,784	\$100	\$307,884	\$307,053	ROW: 1.92 Ac.	ROW: \$38,220	\$345,274
T4	566	2.52	\$68,088	\$19,671	\$87,759	\$239,965	ROW: 1.41 Ac.	ROW: \$29,312	\$269,277
U1 & U2	575	37.97	\$654,535	\$0	\$654,535	\$500,670	ROW: 3.07 Ac.	ROW: \$71,291	\$571,962
	576	12.6	\$222,571	\$0	\$222,571				
	579A	6.83	\$115,617	\$0	\$115,617				
U3	577	12.27	\$283,065	\$0	\$283,065	\$815,894	ROW: 4.33 Ac. Streams: 461 LF	ROW: \$81,574 Stream: \$273,834	\$1,171,302
	578	2.72	\$70,272	\$0	\$70,272				
	579	12.02	\$203,472	\$0	\$203,472				
U4	580	64.14	\$1,268,285	\$0	\$1,268,285	\$620,072	ROW: 4.17 Ac. Stream: 123 LF Wetland: 0.37 Ac.	ROW: \$132,138 Stream: \$73,062 Wetland: \$30,223	\$855,494
	581	5.56	\$127,690	\$0	\$127,690				
V1	585	8.47	\$165,194	\$0	\$165,194	\$182,325	ROW: 0.97 Ac.	ROW: \$14,769	\$197,094
	587	9.27	\$284,662	\$0	\$251,314				
V2	586A	3.65	\$112,084	\$0	\$112,084	\$109,050	ROW: 0.55 Ac. Stream: 102 LF	ROW: \$10,839 Stream: \$60,588	\$180,477
V3	588	0.7	\$40,000	\$30,951	\$70,951	\$390,290	ROW: 0.69 Ac. Wetland: 0.01 Ac.	ROW: \$37,637 Wetland: \$10,074	\$438,001
	589	1.09	\$40,000	\$0	\$40,000				
	590	0.82	\$40,000	\$0	\$40,000				
	591	0.92	\$40,000	\$29,825	\$69,825				
	592	0.89	\$40,000	\$500	\$40,500				
	593	0.87	\$40,000	\$58,252	\$98,252				
	594	0.84	\$40,000	\$7,830	\$47,830				
	595	0.75	\$40,000	\$40,572	\$80,572				

SERVICE ROAD STUDY

5. RECOMMENDATIONS

The analysis conducted and summarized in Section 2 through Section 5 was used to further refine the design for some service roads. It should be noted that NCTA may elect to further modify the layout and design of the service roads based on potential cost and material savings or to suit modifications requested by individual land-locked property owners. Some service roads would require merging two neighborhoods which may not be preferred by affected homeowners. If the service road was built off of a neighborhood road, NCDOT would be required to take over maintenance of the neighborhood roads leading up to the service road. The cost of the maintenance was not included in the cost comparison or summary.

Table 5-1 was developed based on additional design details for each service road. To facilitate a comparison, the cost to purchase the properties and the total cost to provide a service road are listed in bold text. The roads that did not prove to be cost effective in this study were highlighted in red.

TABLE 5-1: COST SUMMARY

Service Road ID	Parcel I.D.	Purchase Cost	Road Cost	Environmental Cost	ROW Cost	Total Cost
D1	6	\$242,789	\$270,792	\$0	\$103,973	\$374,765
E1 & E2	14-173	\$7,146,845	\$1,252,448	\$0	\$399,455	\$1,651,903
E3 & E4	14-173	\$7,146,845	\$455,956	\$0	\$208,198	\$664,155
G1	177	\$429,433	\$111,969	\$121,723	\$10,222	\$243,913
G2	178-193, 193A	\$3,542,210	\$113,955	\$0	\$11,577	\$125,532
G3	178-199	\$4,493,277	\$684,787	\$33,858	\$596,960	\$1,315,605
G4	200-204	\$851,725	\$499,088	\$0	\$370,512	\$869,600
G5	178-193, 193A	\$3,542,210	\$140,622	\$0	\$32,020	\$172,642
H1	217-228, 230, 231	\$2,505,961	\$266,219	\$0	\$91,757	\$357,976
H2	211-214	\$301,274	\$421,185	\$0	\$210,729	\$631,914
H3	237	\$155,664	\$233,859	\$0	\$83,780	\$317,638
I1	243-244	\$625,830	\$471,135	\$30,223	\$129,993	\$631,351
I2	245-251, 244A	\$1,716,390	\$242,368	\$0	\$78,705	\$321,073
J1	260	\$440,061	\$56,412	\$68,310	\$4,766	\$129,488
K1	261-263	\$345,914	\$708,012	\$10,074	\$32,849	\$750,936
L1	266	\$481,034	\$67,832	\$0	\$6,136	\$73,969
L2 & L2A	308-310	\$650,604	\$139,153	\$0	\$17,069	\$156,222
L3	267-307	\$10,711,780	\$336,483	\$0	\$116,376	\$452,860
L4	335-339	\$993,060	\$122,146	\$0	\$17,392	\$139,538
L5	306	\$361,383	\$49,361	\$0	\$8,617	\$57,978
M1	343-344	\$371,333	\$280,063	\$0	\$27,844	\$307,907
M2	340-342	\$1,578,341	\$506,675	\$0	\$100,342	\$607,017
N1	348	\$427,377	\$127,349	\$0	\$20,800	\$148,149
N2	351-353, 355	\$822,673	\$950,152	\$156,127	\$98,277	\$1,204,556

SERVICE ROAD STUDY

Service Road ID	Parcel I.D.	Purchase Cost	Road Cost	Environmental Cost	ROW Cost	Total Cost
N3	354	\$134,775	\$216,348	\$0	\$38,880	\$255,228
N3 & N4	354, 355A	\$83,544	\$463,176	\$0	\$159,951	\$623,128
P1	372-376, 379, 379A	\$2,313,651	\$5,804,023	\$756,043	\$281,453	\$6,841,519
Q1	379, 379A	\$597,864	\$209,048	\$83,754	\$3,966	\$296,768
Q2	380-381	\$1,459,178	\$308,504	\$78,978	\$29,445	\$416,927
Q3	380-381	\$1,459,178	\$44,969	\$0	\$880	\$45,849
Q4	382-538	\$4,931,884	\$432,466	\$0	\$92,035	\$524,501
Q5	539	\$33,825	\$147,692	\$92,664	\$12,600	\$252,956
R1	545A, 546A, 547A, 548A	\$130,123	\$295,683	\$276,780	\$22,680	\$595,143
R2	541, 541A-541F, 542-549	\$3,324,196	\$2,159,251	\$239,358	\$207,652	\$2,606,261
S1	552	\$77,712	\$382,846	\$0	\$42,993	\$425,839
S2	560, 560B	\$2,387,900	\$707,268	\$0	\$150,011	\$857,280
S3	556-559	\$4,798,768	\$237,324	\$0	\$31,720	\$269,044
S4	561	\$279,514	\$783,363	\$162,756	\$55,016	\$1,001,135
T1	564	\$2,351,180	\$113,547	\$0	\$12,617	\$126,164
T2	570-571	\$139,521	\$241,648	\$0	\$28,762	\$270,410
T3	565	\$307,884	\$307,053	\$0	\$38,220	\$345,274
T4	566	\$87,759	\$239,965	\$0	\$29,312	\$269,277
U1 & U2	575-576, 279A	\$992,723	\$500,670	\$0	\$71,291	\$571,962
U3	577-579	\$556,809	\$815,894	\$273,834	\$81,574	\$1,171,302
U4	580-581	\$1,395,976	\$620,072	\$103,285	\$132,138	\$855,494
V1	585, 586A	\$416,508	\$182,325	\$0	\$14,769	\$197,094
V2	587	\$112,084	\$109,050	\$60,588	\$10,839	\$180,477
V3	588-595	\$487,930	\$390,290	\$10,074	\$37,637	\$438,001
V4	582, 583, 586	\$300,037	\$89,795	\$0	\$84,213	\$174,009

Table 5-1 represents the viability of each service road based on cost alone, but there are additional factors that will play a role in which service roads will be recommended for construction. For example, G2 is the most cost effective between the three options for the area, but would require NCDOT to take over maintenance of the most neighborhood roads. G3 is the most expensive of the three, but impacts the shortest length of neighborhood roads. G3 also would change the access point for parcels 196 through 199 to the back of the home making them less desirable and would potentially decrease their property value.

As mentioned in Section 3, some service roads would require another service road to be built first. In these scenarios, each service road was analyzed separately. For example, construction of V2 would require V1 to be built first. Because only the V1 portion was cost effective, the two roads were not analyzed together.

Another factor that may sway the service road recommendations is consideration for mitigation sites. Although some service roads may be cost effective, it's possible that the affected parcels could still be bought out to use

SERVICE ROAD STUDY

as mitigation sites for the Complete 540 project. Service road P1 did not prove to be cost effective, but the associated parcels provide a good example for eligible mitigation sites. Due to the conservation efforts to Swift Creek and the contributions it makes to the dwarf wedge mussel habitat, any property acquisitions in area P (Parcels 372-376, 379, and 379A) should be considered for conservation sites to reduce potential increases in impervious surface.

The final recommendations are listed in Table 5-2 along with the amount saved by constructing the service road(s) listed in bold. In scenarios where it was required to build one service road in order to build another, both roads were analyzed together.

TABLE 5-2: FINAL SERVICE ROAD RECOMMENDATIONS

TIP #	Appendix B Figure #	Service Road ID	No Build Cost	Build Cost	Delta
R-2721	B-2C	E1, E2, E3 & E4	\$7,146,845	\$2,316,057	\$4,830,787
	B-3A	G1 & G2	\$3,971,643	\$369,445	\$3,602,197
	B-5	H1	\$2,505,961	\$357,976	\$2,147,984
	B-6	H2	\$301,274	\$631,914	-\$330,641
	B-7	I1	\$625,830	\$631,351	-\$5,521
	B-9	I2	\$1,716,390	\$321,073	\$1,395,317
	B-10	J1	\$440,061	\$129,488	\$310,574
R-2828	B-12	L1	\$481,034	\$73,969	\$407,065
	B-13	L2 & L2A	\$650,604	\$156,222	\$494,382
	B-14	L3 & L5	\$11,073,163	\$510,838	\$10,562,325
	B-15	L4	\$993,060	\$139,538	\$853,522
	B-17	M1	\$371,333	\$307,907	\$63,426
	B-16	M2	\$1,578,341	\$607,017	\$971,324
	B-18	N1	\$427,377	\$148,149	\$279,229
R-2829	B-22	Q1	\$597,864	\$296,768	\$301,096
	B-23B	Q3	\$1,459,178	\$45,849	\$1,413,329
	B-24	Q4	\$4,931,884	\$524,501	\$4,407,383
	B-26	R2	\$3,324,196	\$2,606,261	\$717,935
	B-28	S2	\$2,387,900	\$857,280	\$1,530,620
	B-29	S3	\$4,798,768	\$269,044	\$4,529,725
	B-31	T1	\$2,351,180	\$126,164	\$2,225,016
	B-35	U1 & U2	\$992,723	\$571,962	\$420,762
	B-37	U4	\$1,395,976	\$855,494	\$540,481
	B-38A	V1	\$416,508	\$197,094	\$219,414
	B-40	V3	\$487,930	\$438,001	\$49,929
	B-39	V4	\$300,037	\$174,009	\$126,029

Because some areas had more than one option, not all roads were recommended even though they proved to be cost effective. If each option was cost effective, the one that costed the least per parcel saved was chosen

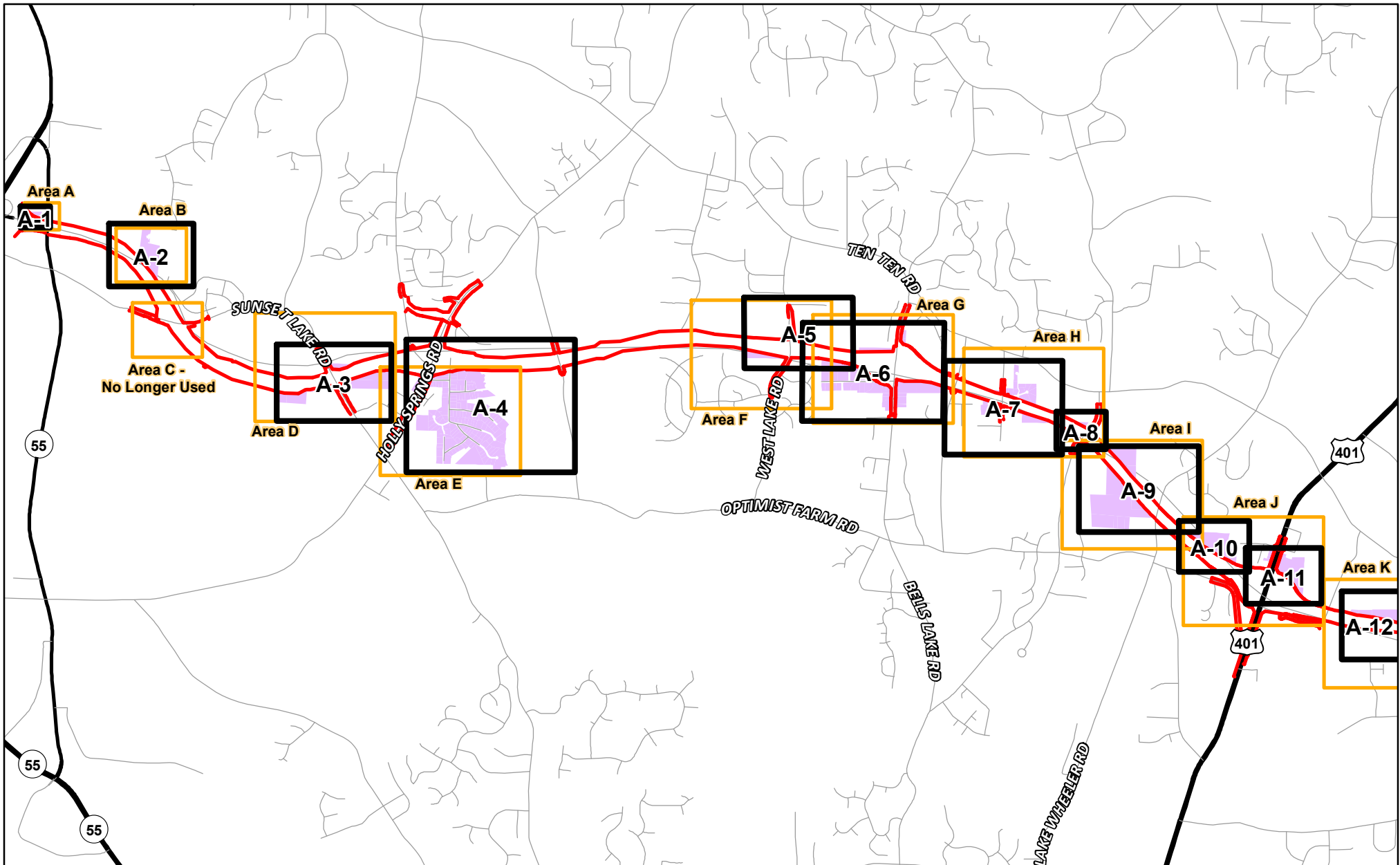
SERVICE ROAD STUDY

with the exception of Area E. In Area E, both road options were recommended to move forward due to the large number of parcels the roads would be serving. E3 and E4 were the most cost effective per parcel, but did not allow left turns into the subdivision. E1 and E2 are on Holly Springs' Long Range Transportation Plan and would allow all traffic movements to and from the subdivision. Table 5-2 shows the build cost of E1, E2, E3, and E4 all together compared to the total parcel buyout cost, and was still found to be cost effective.

Service Road H2 had a negative cost delta, but was still recommended for detour purposes. H2 will provide access to the southern portion of Deer Meadow Dr. during the construction of the bridge along Deer Meadow. Service road I1 also had a negative cost delta, but because the delta was so small, it was still recommended.

APPENDIX A

Property Access Figures



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS



Area Borders



Figure Borders

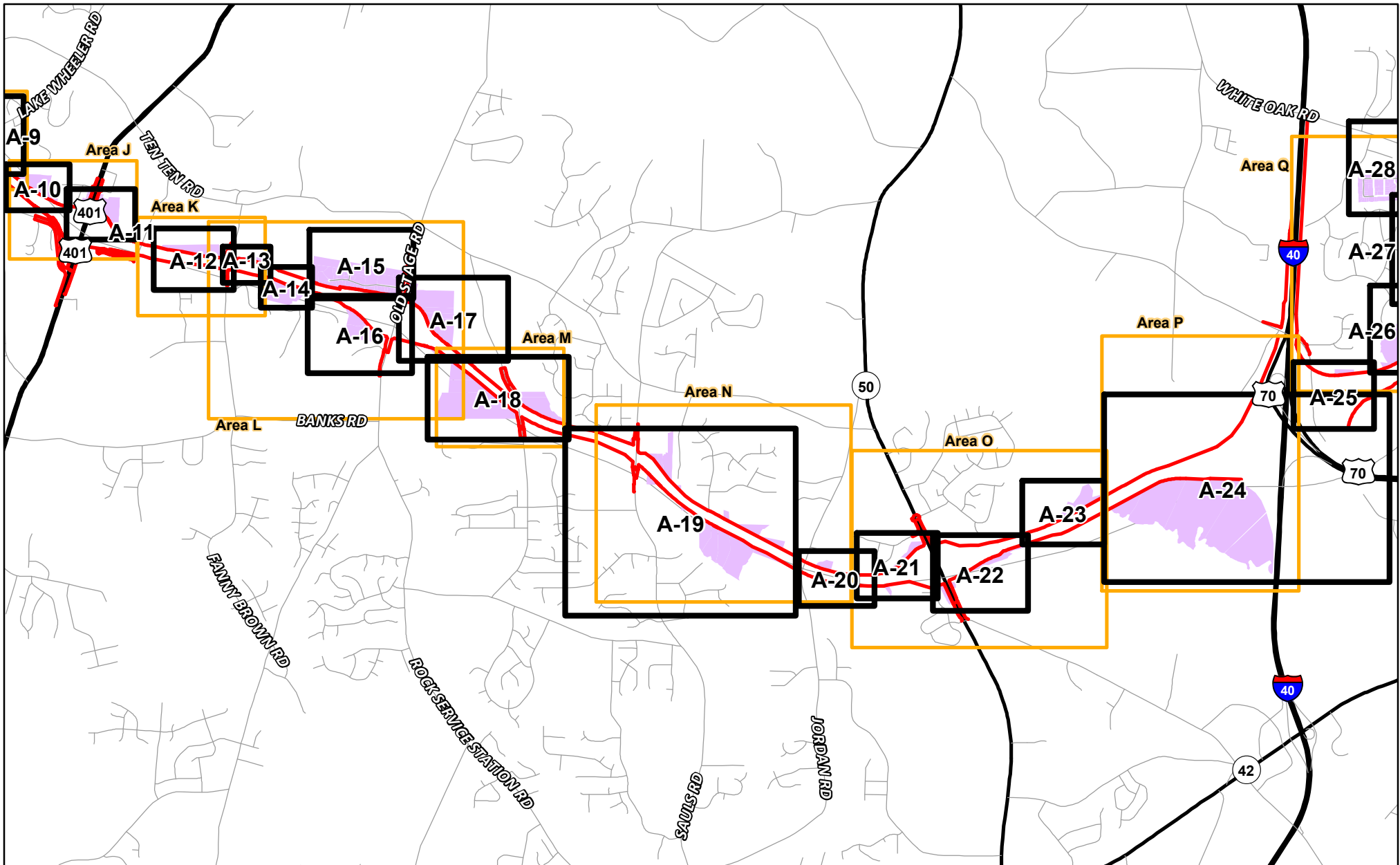
SR Route

Landlocked
Parcels

Right Of
Way

SERVICE ROAD STUDY APPENDIX A

Figure Index 1 of 3



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS

Area Borders

Figure Borders

SR Route

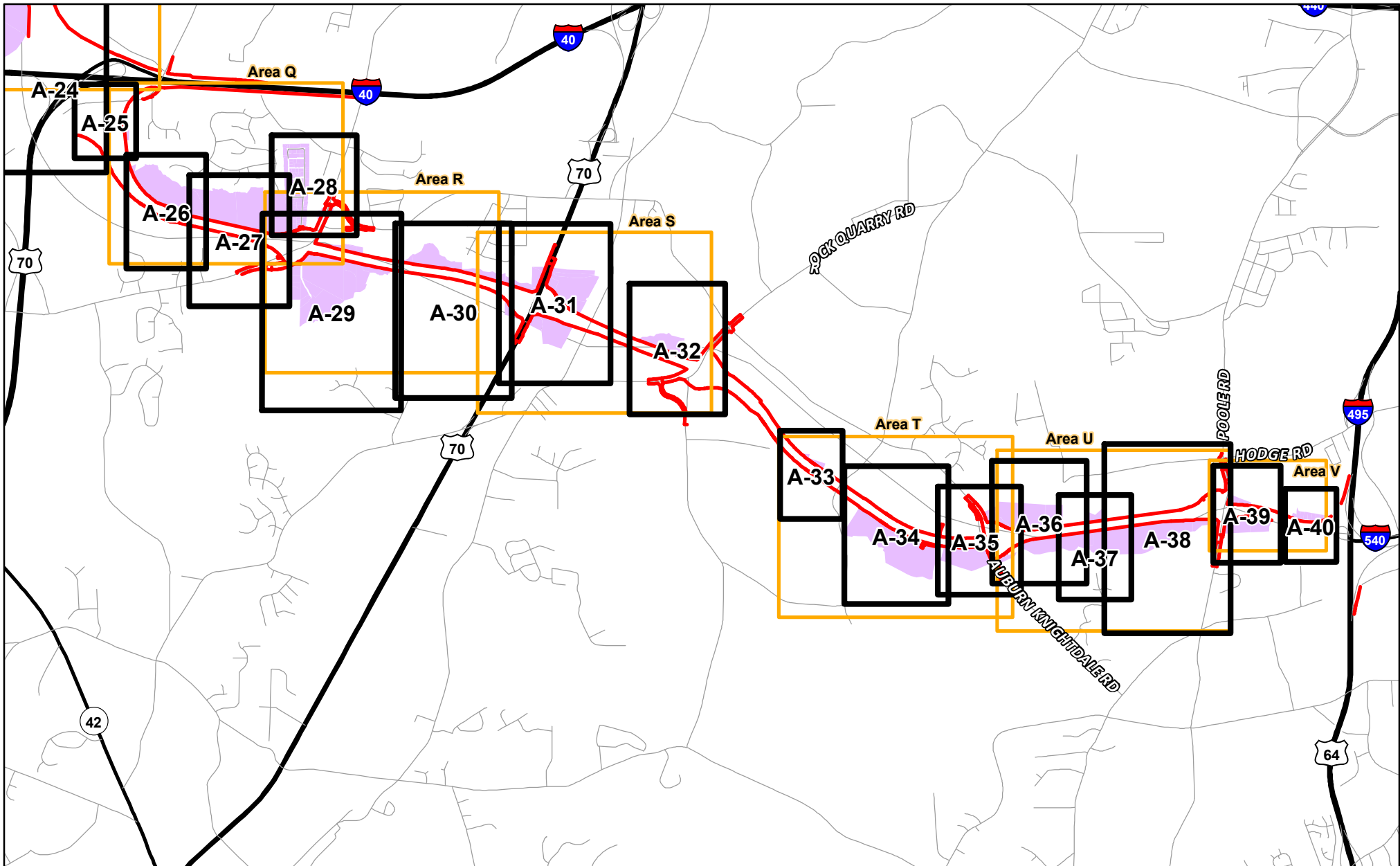
Landlocked
Parcels

Right Of
Way

SERVICE ROAD STUDY

APPENDIX A

Figure Index 2 of 3



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties

PRELIMINARY : SUBJECT TO CHANGE



NOT TO SCALE

Sources: Wake & Johnston Counties GIS

Area Borders

Figure Borders

SR Route

Landlocked
Parcels

Right Of
Way

SERVICE ROAD STUDY

APPENDIX A

Figure Index 3 of 3



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

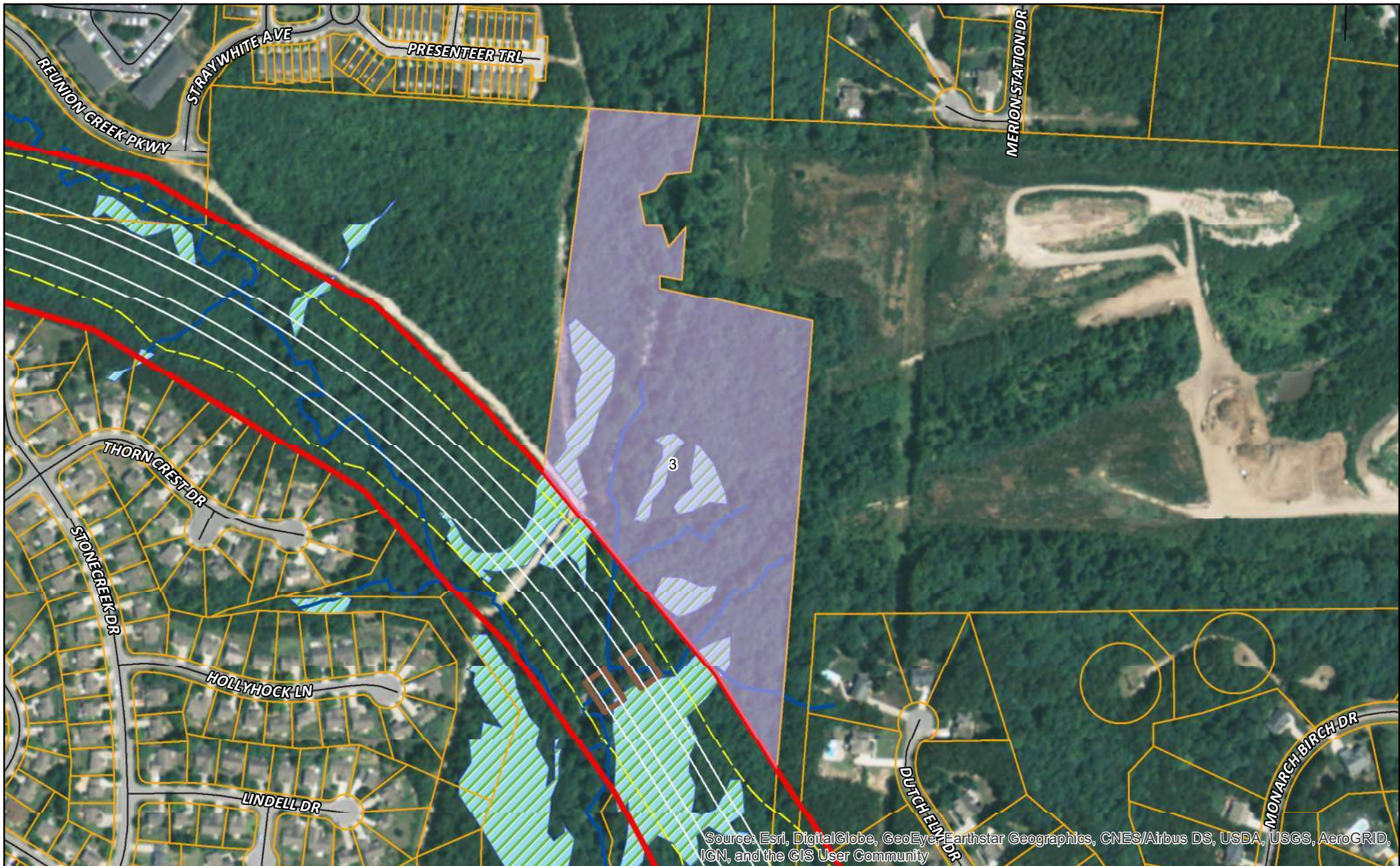
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: A

Figure: A-1



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

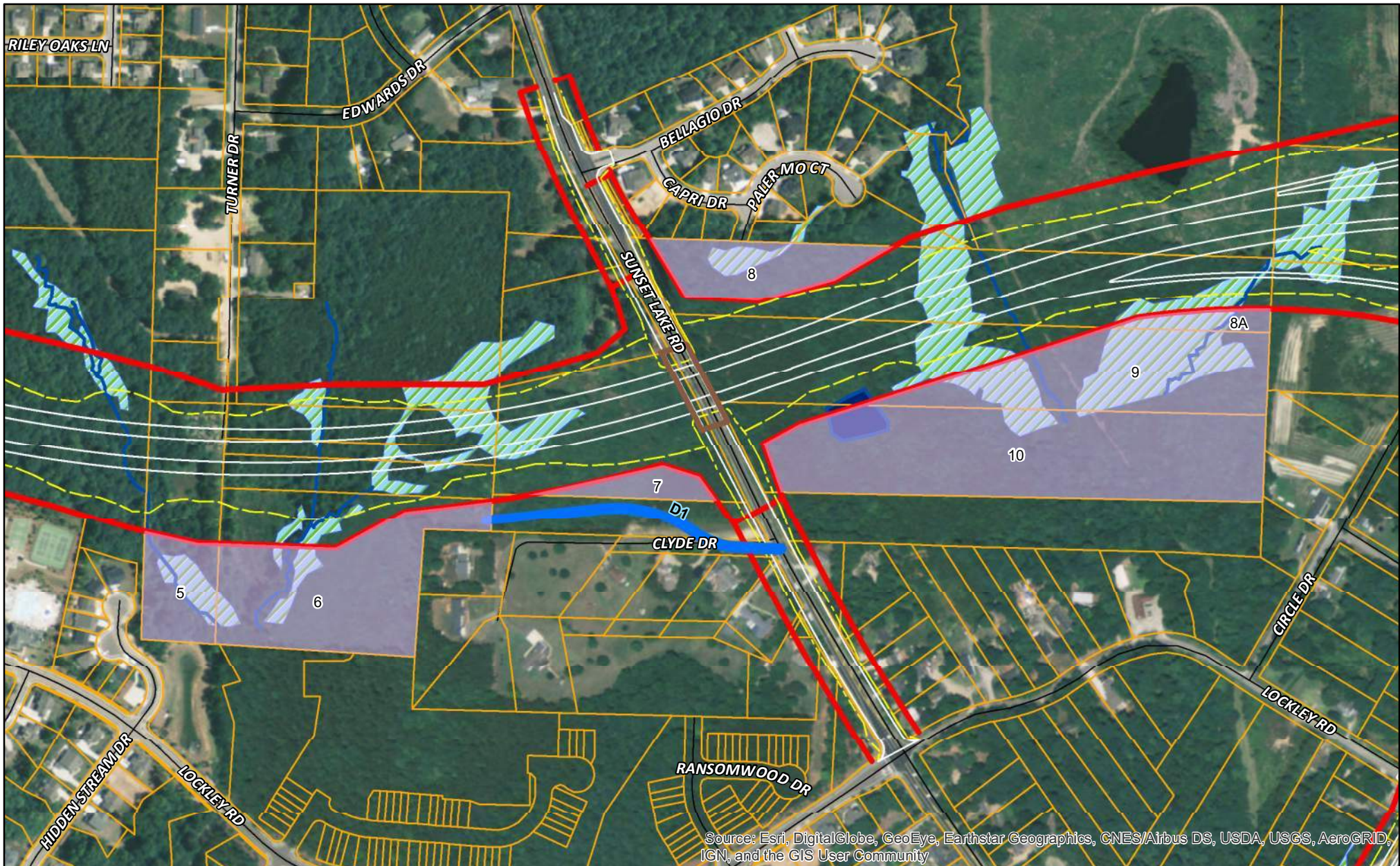
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: B

Figure: A-2



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

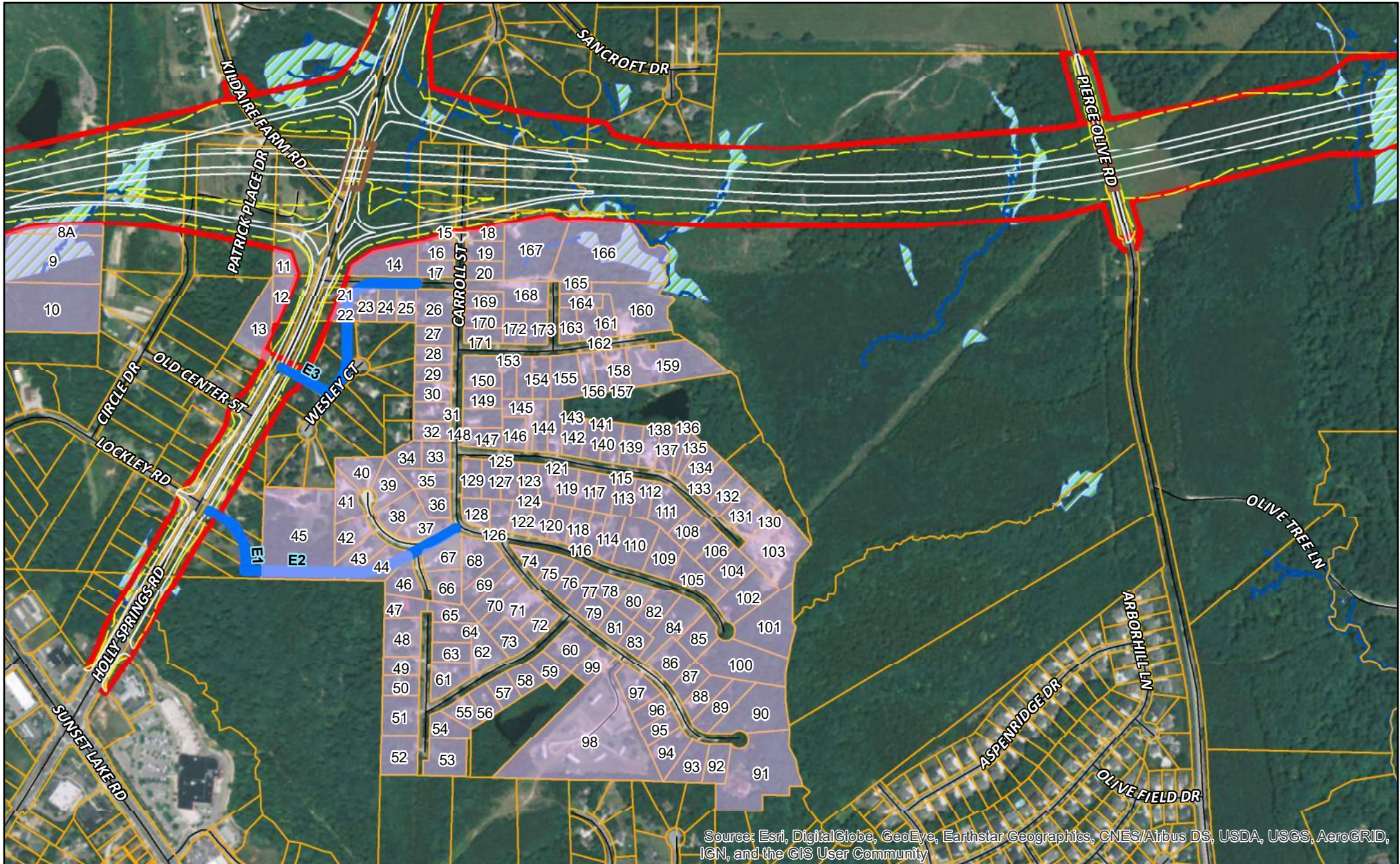
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: D

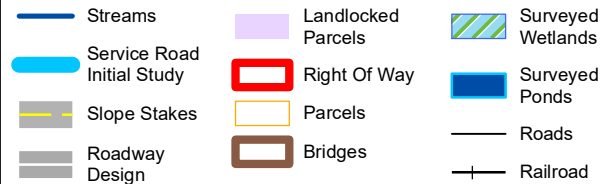
Figure: A-3



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

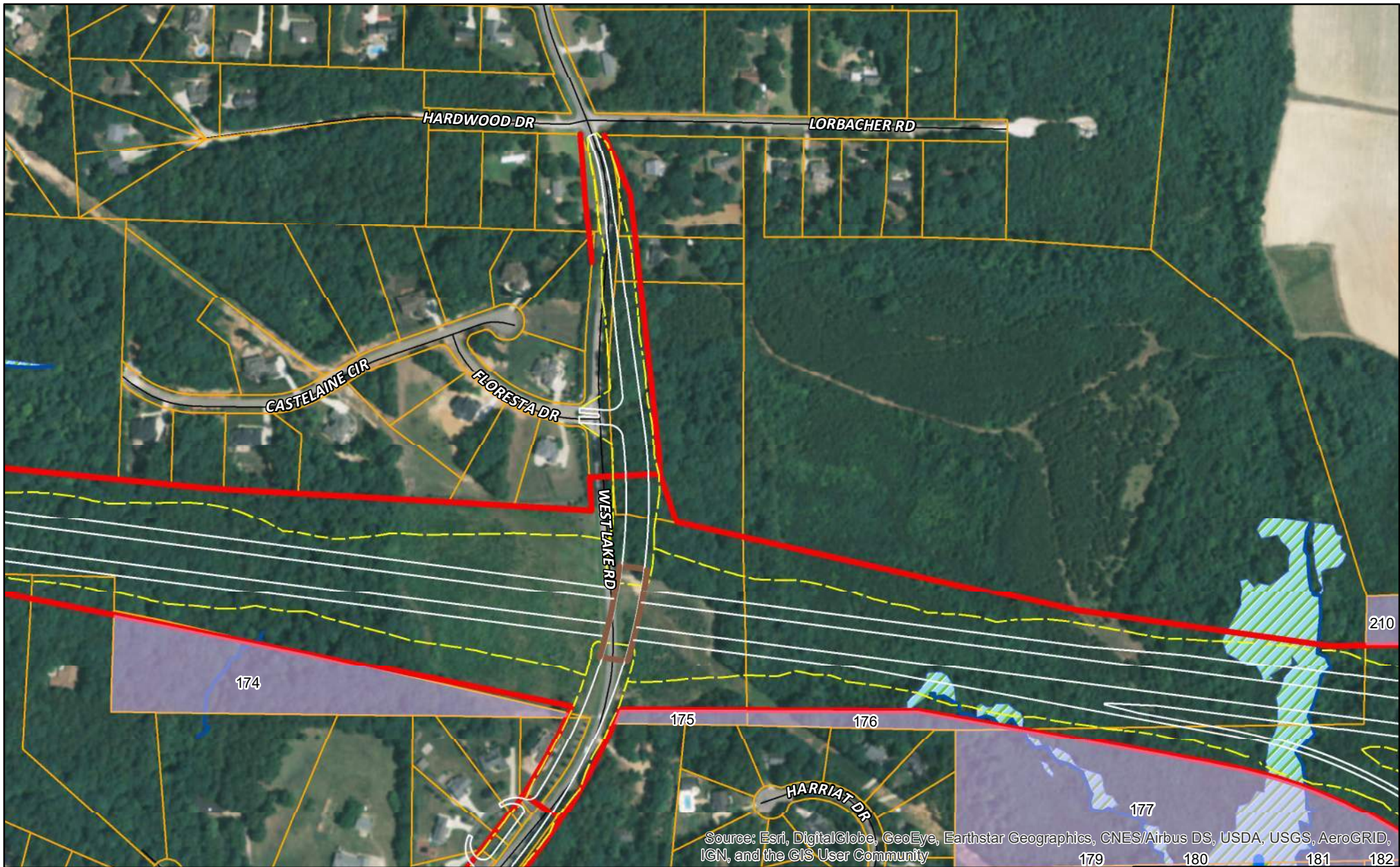
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: E

Figure: A-4



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

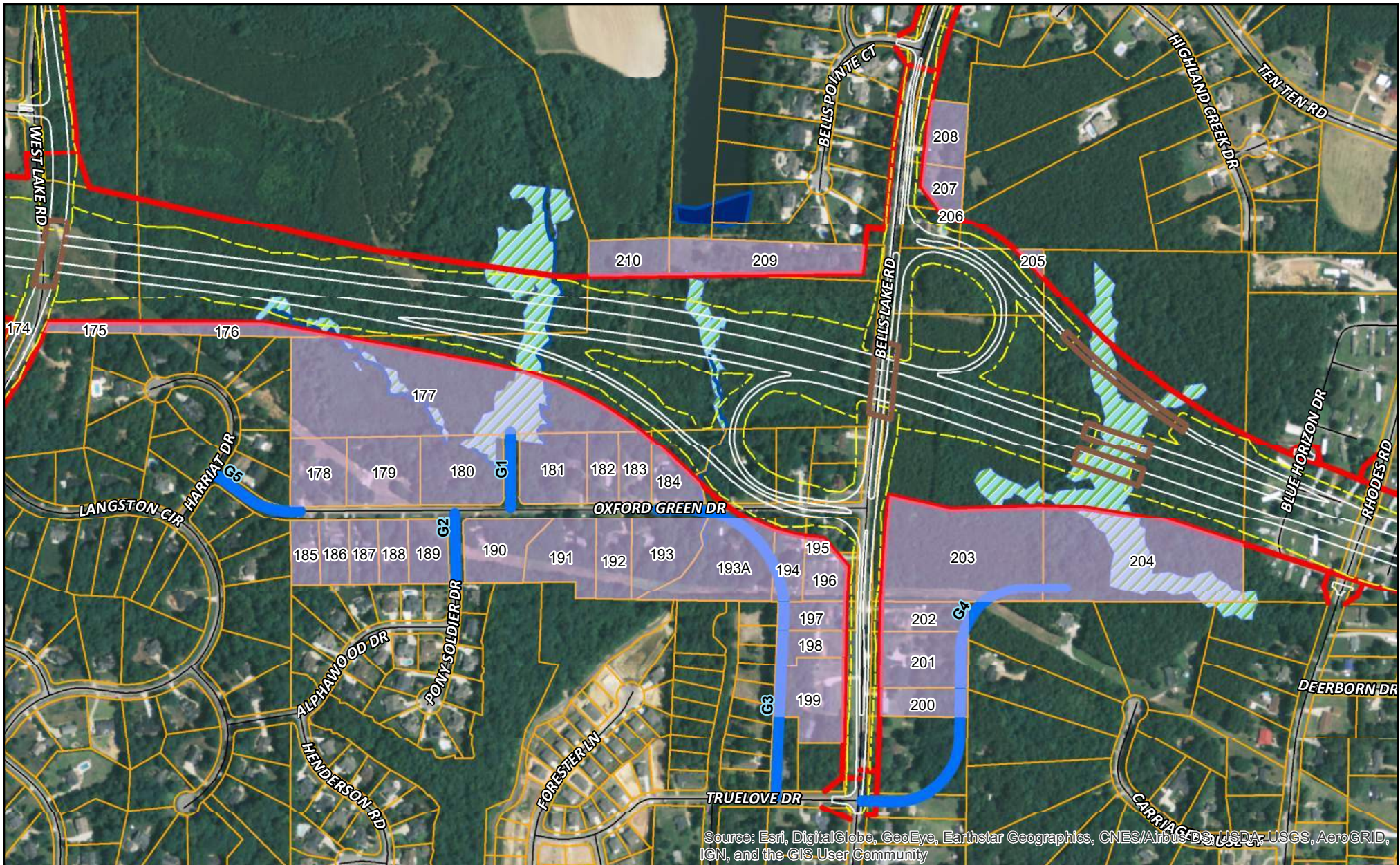
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: F

Figure: A-5



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

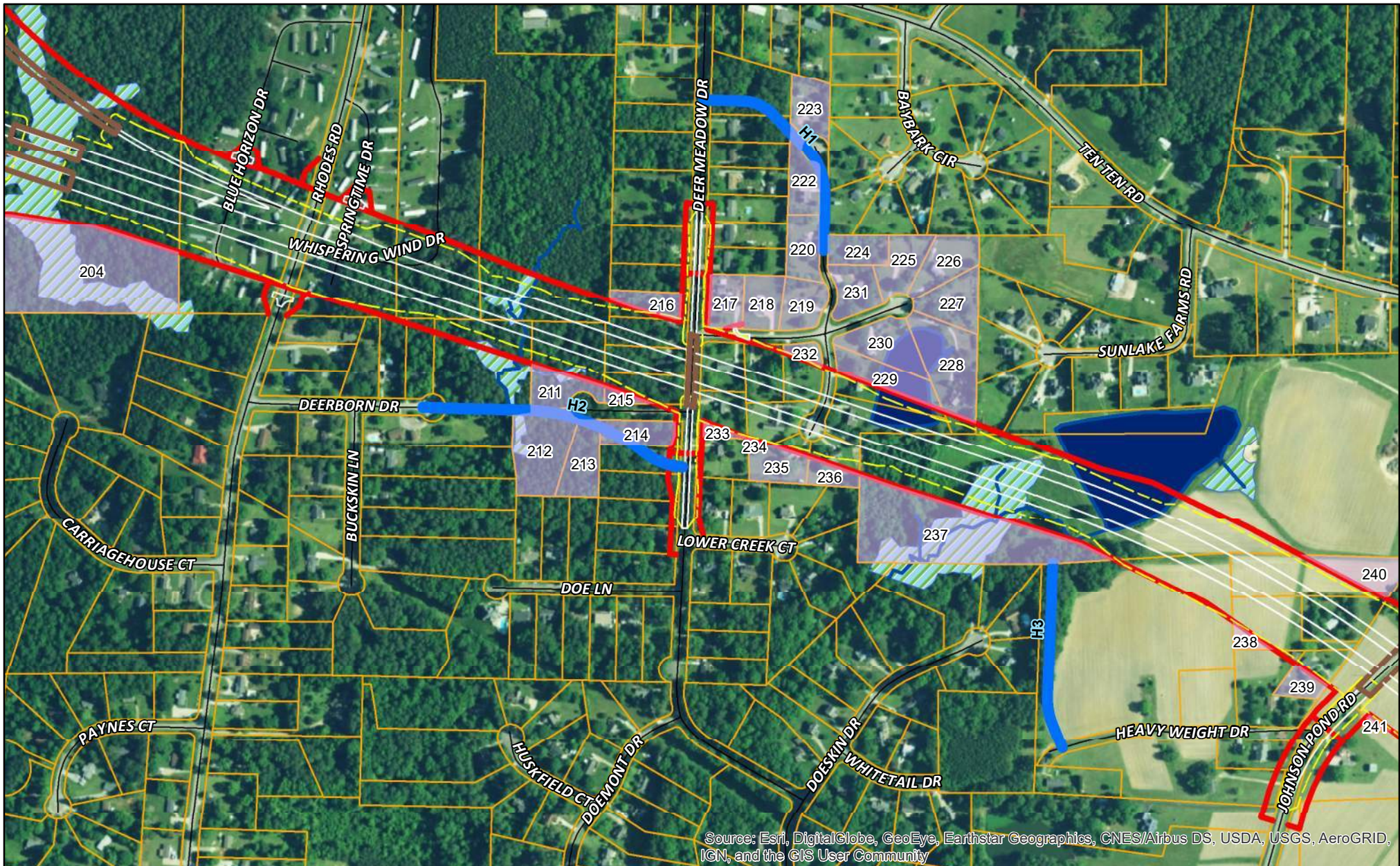
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: G

Figure: A-6



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: H

Figure: A-7



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

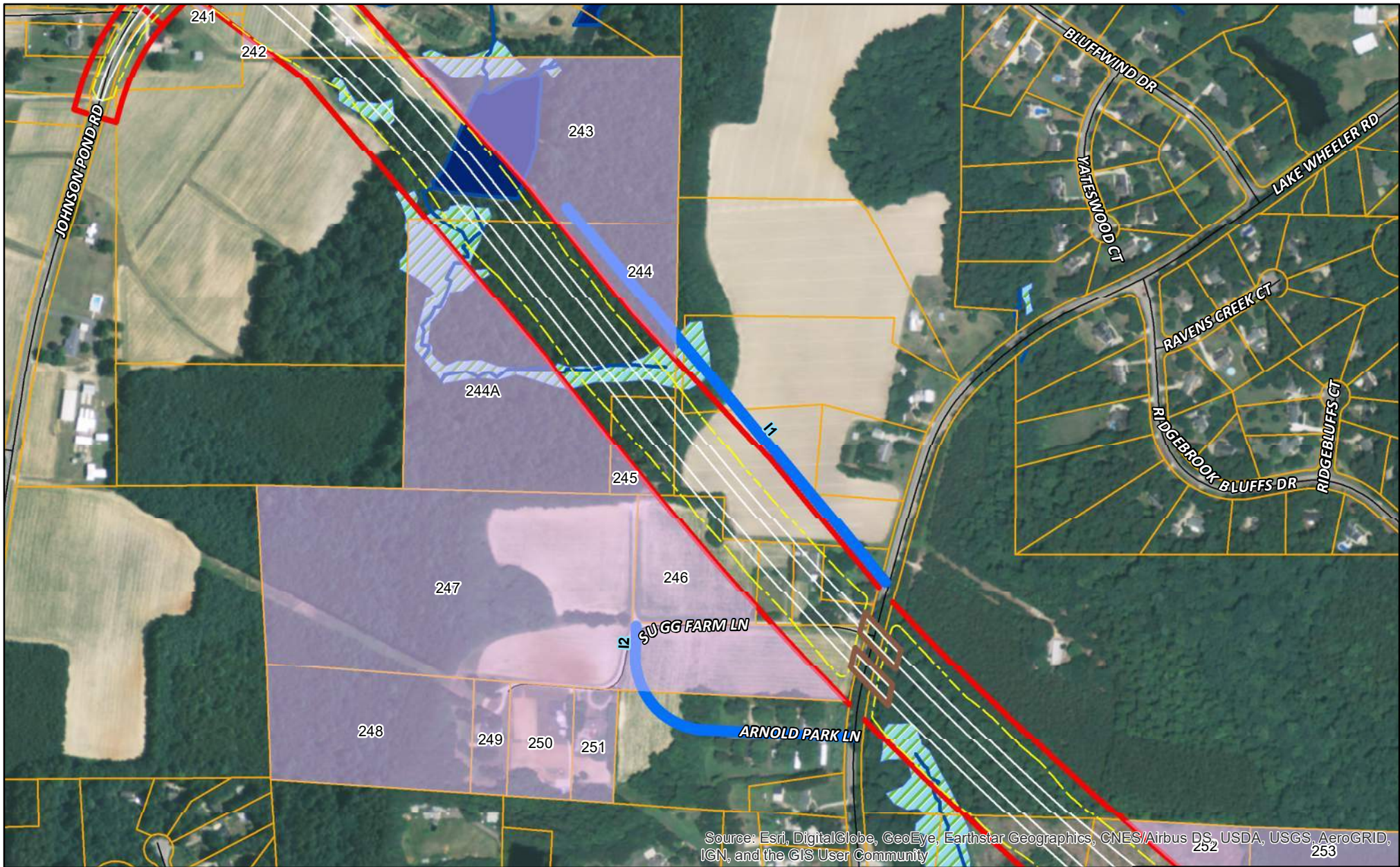
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: H

Figure: A-8



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

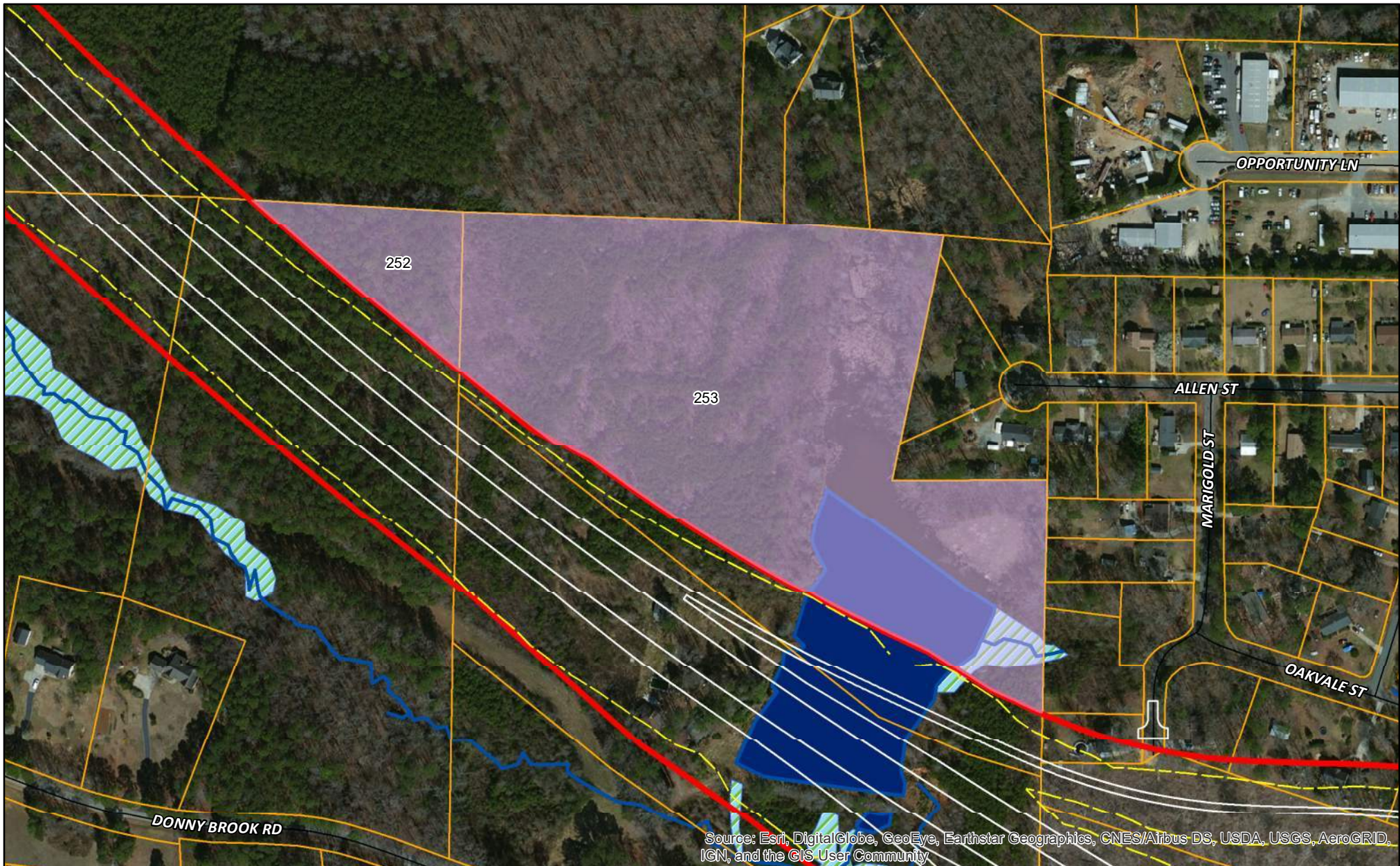
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: I

Figure: A-9



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

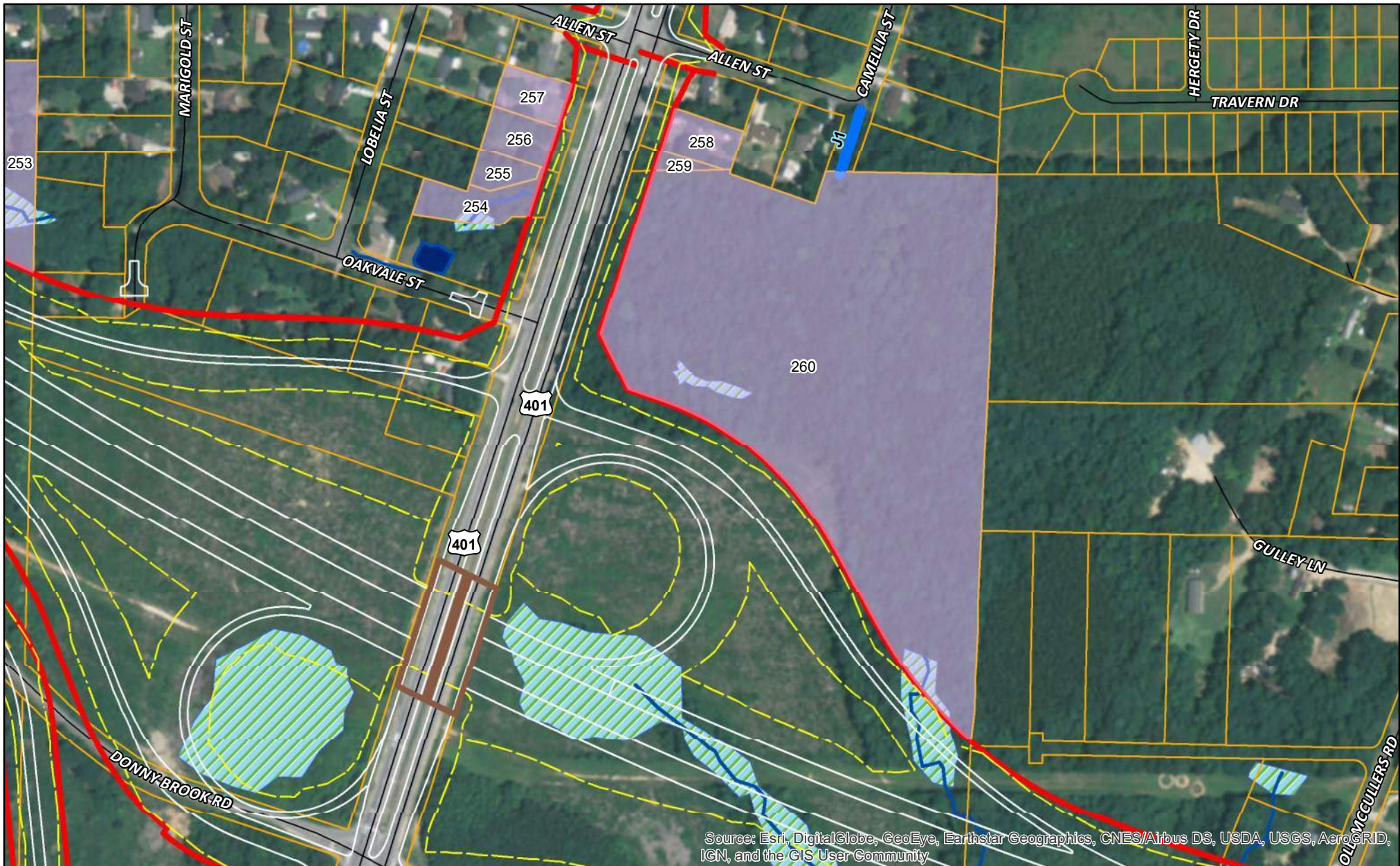
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: J

Figure: A-10



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

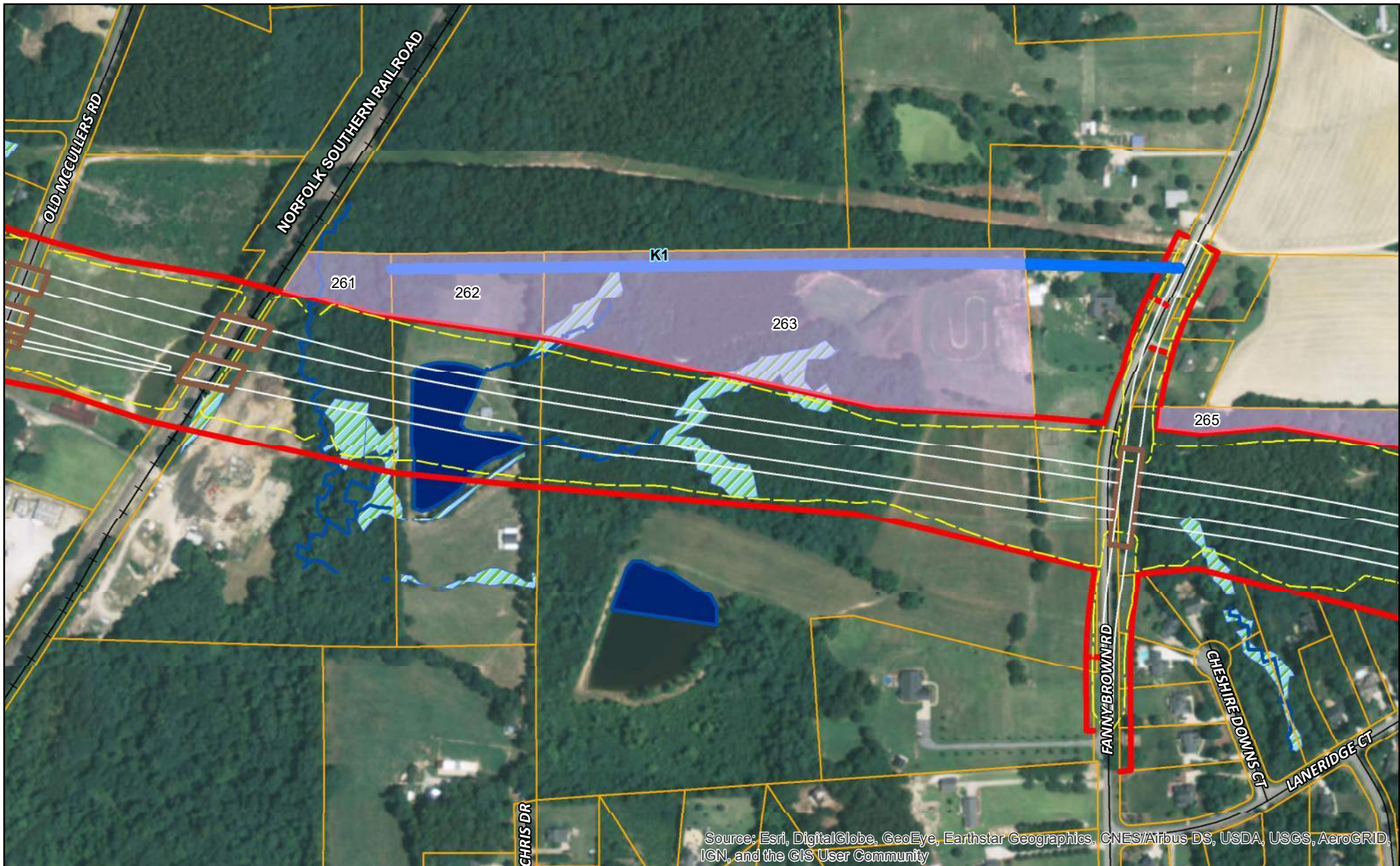
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: J

Figure: A-11



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

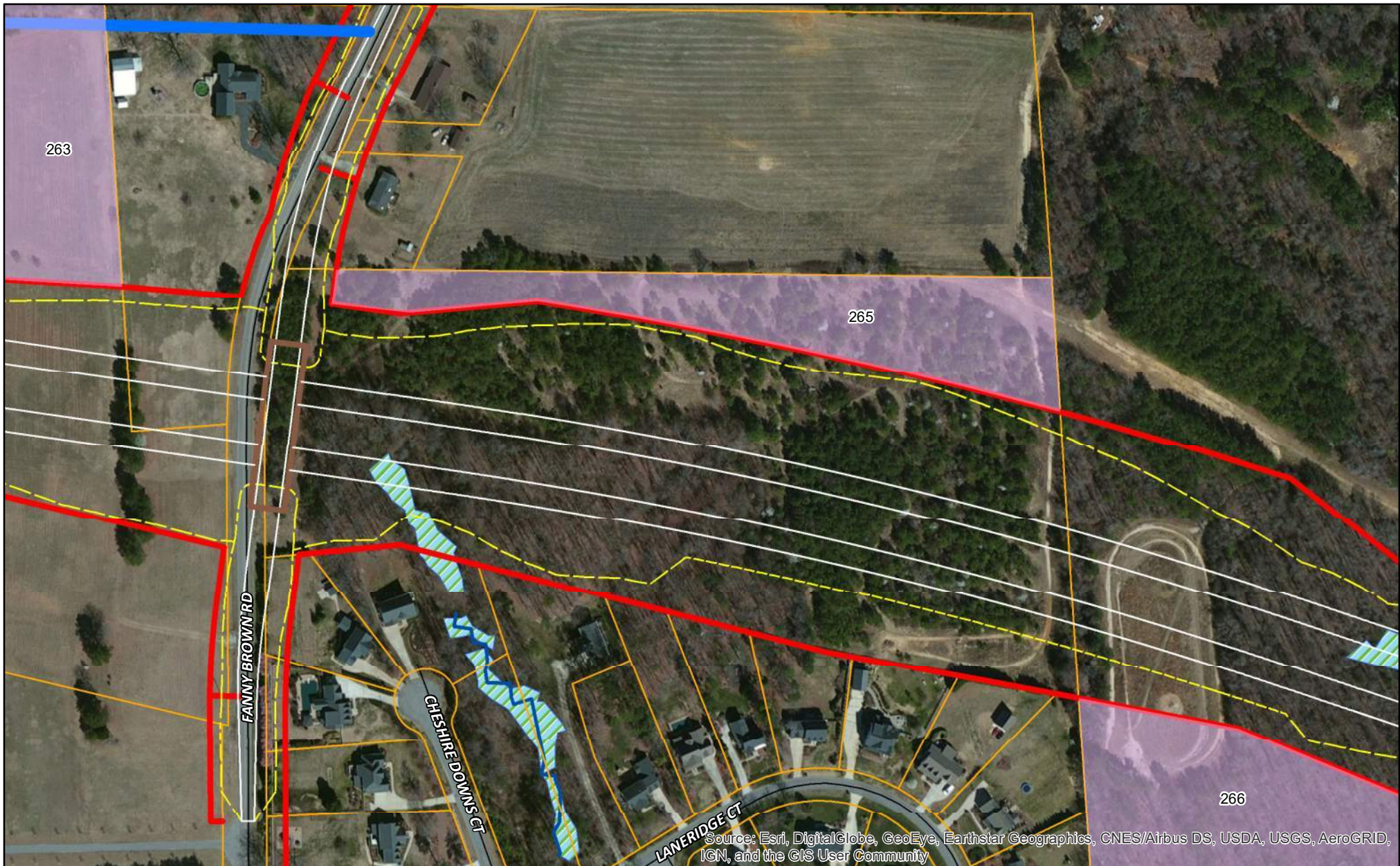
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: K

Figure: A-12



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: K

Figure: A-13



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

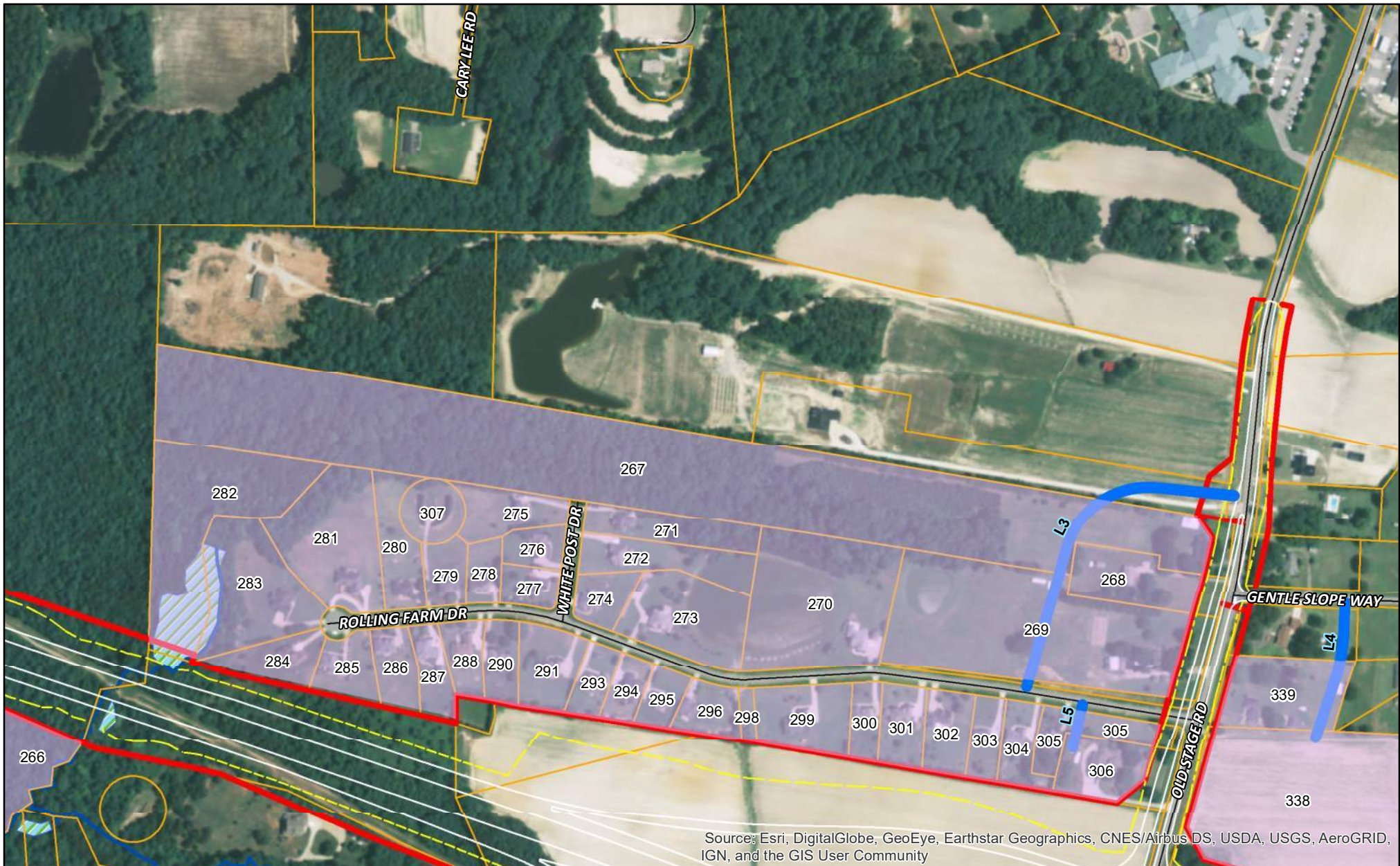
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: L

Figure: A-14



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

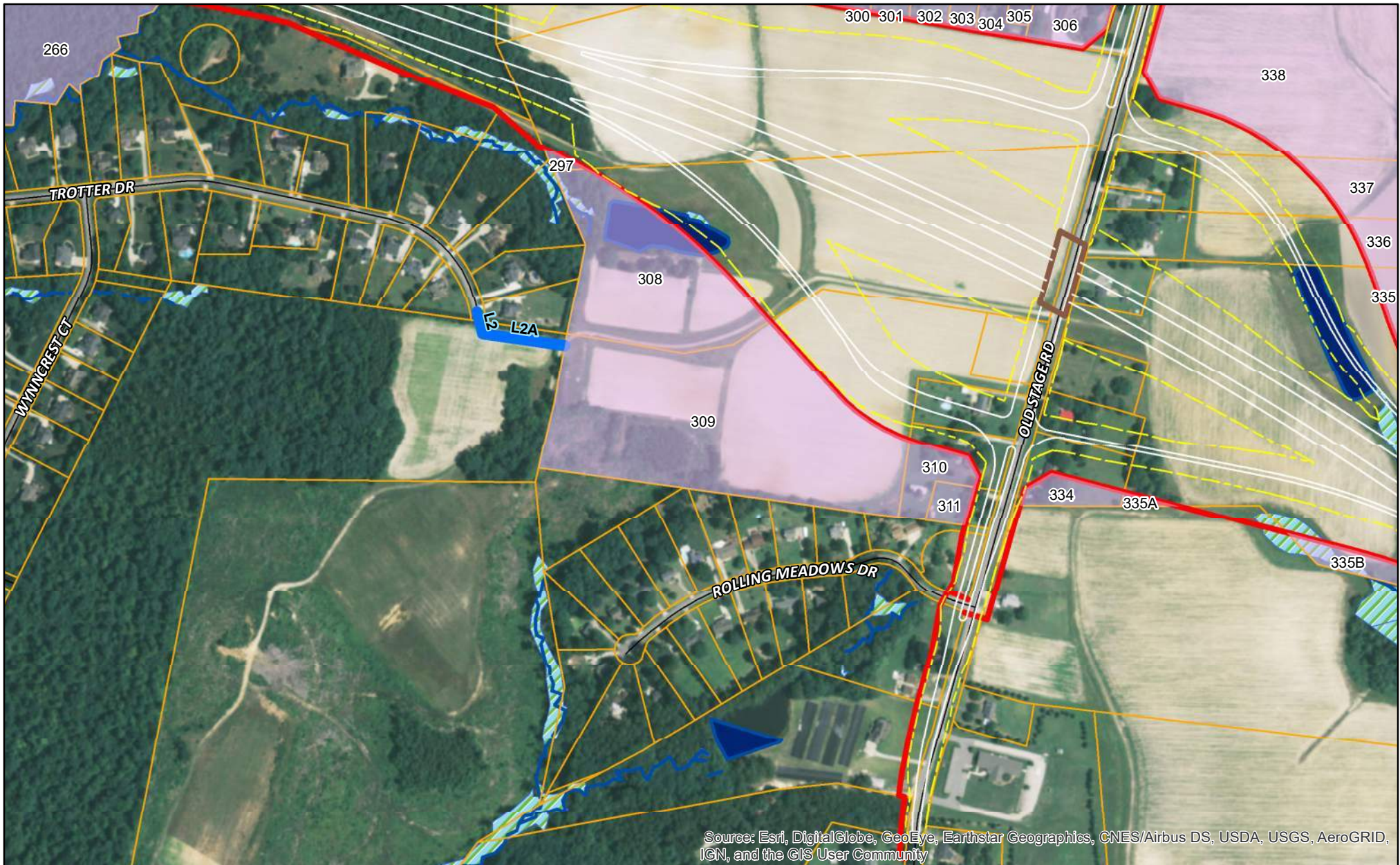
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: L

Figure: A-15



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

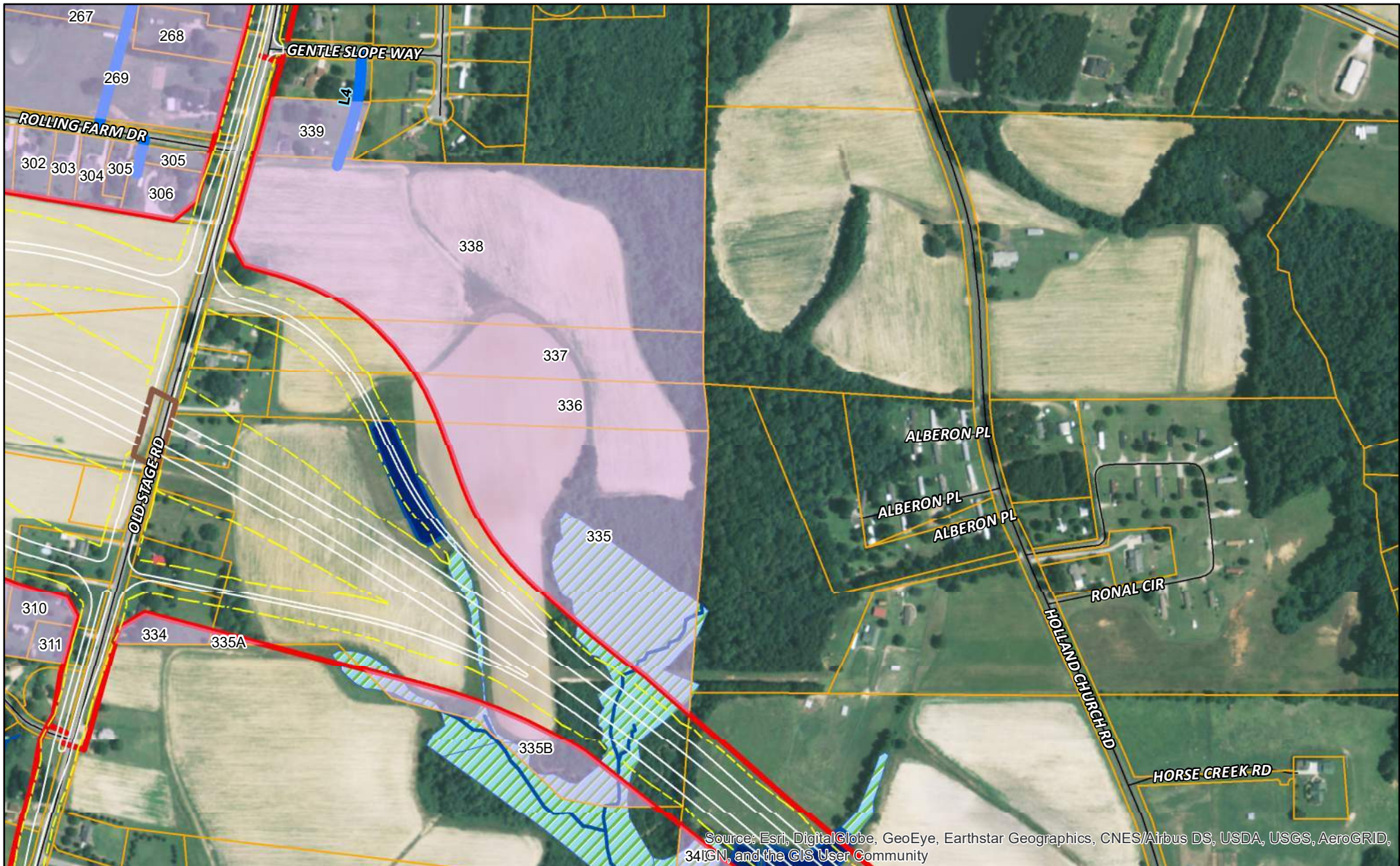
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: L

Figure: A-16



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

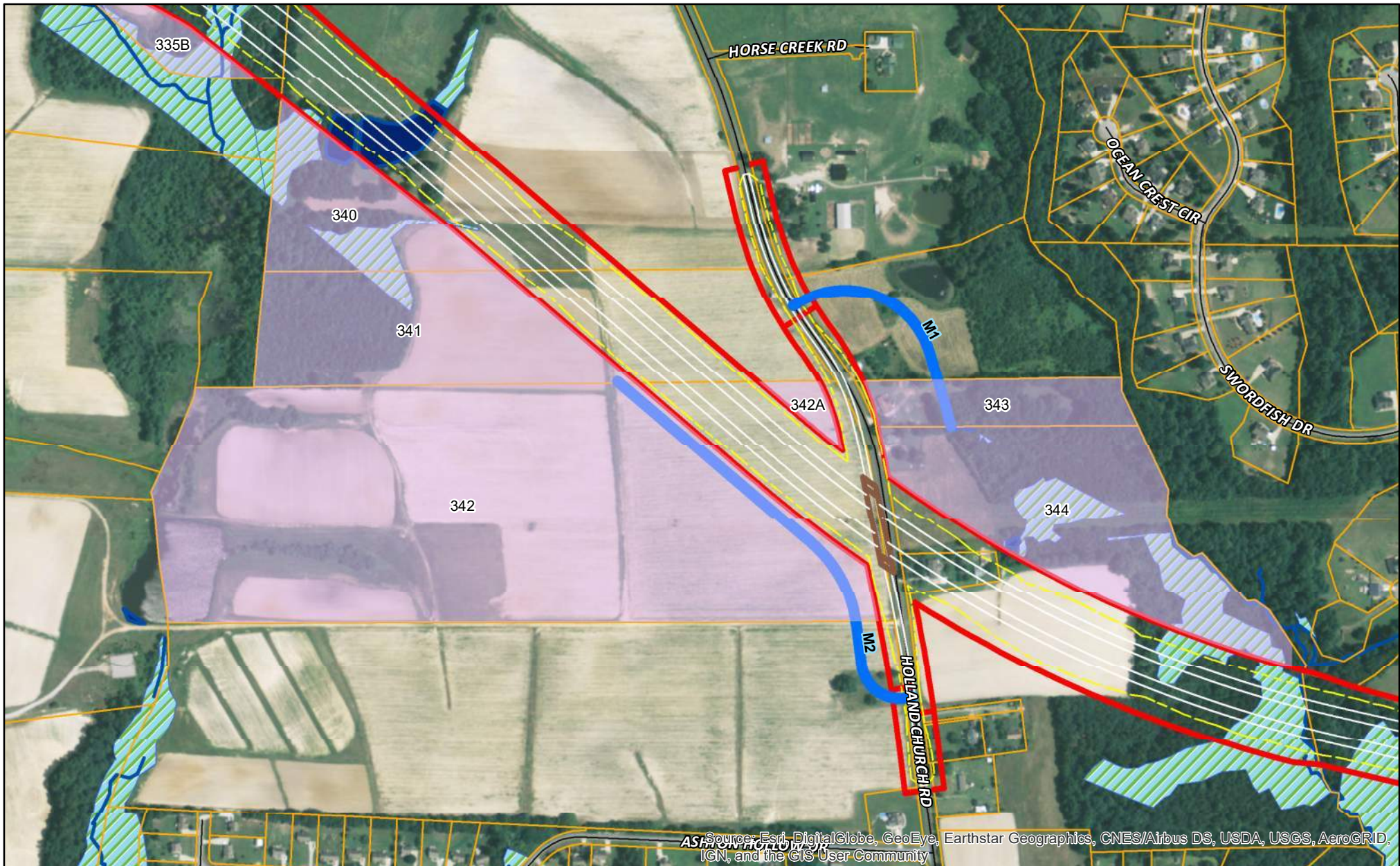
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: L

Figure: A-17



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

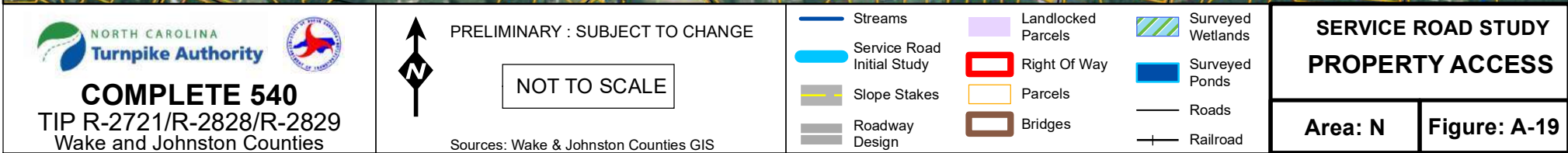
Sources: Wake & Johnston Counties GIS

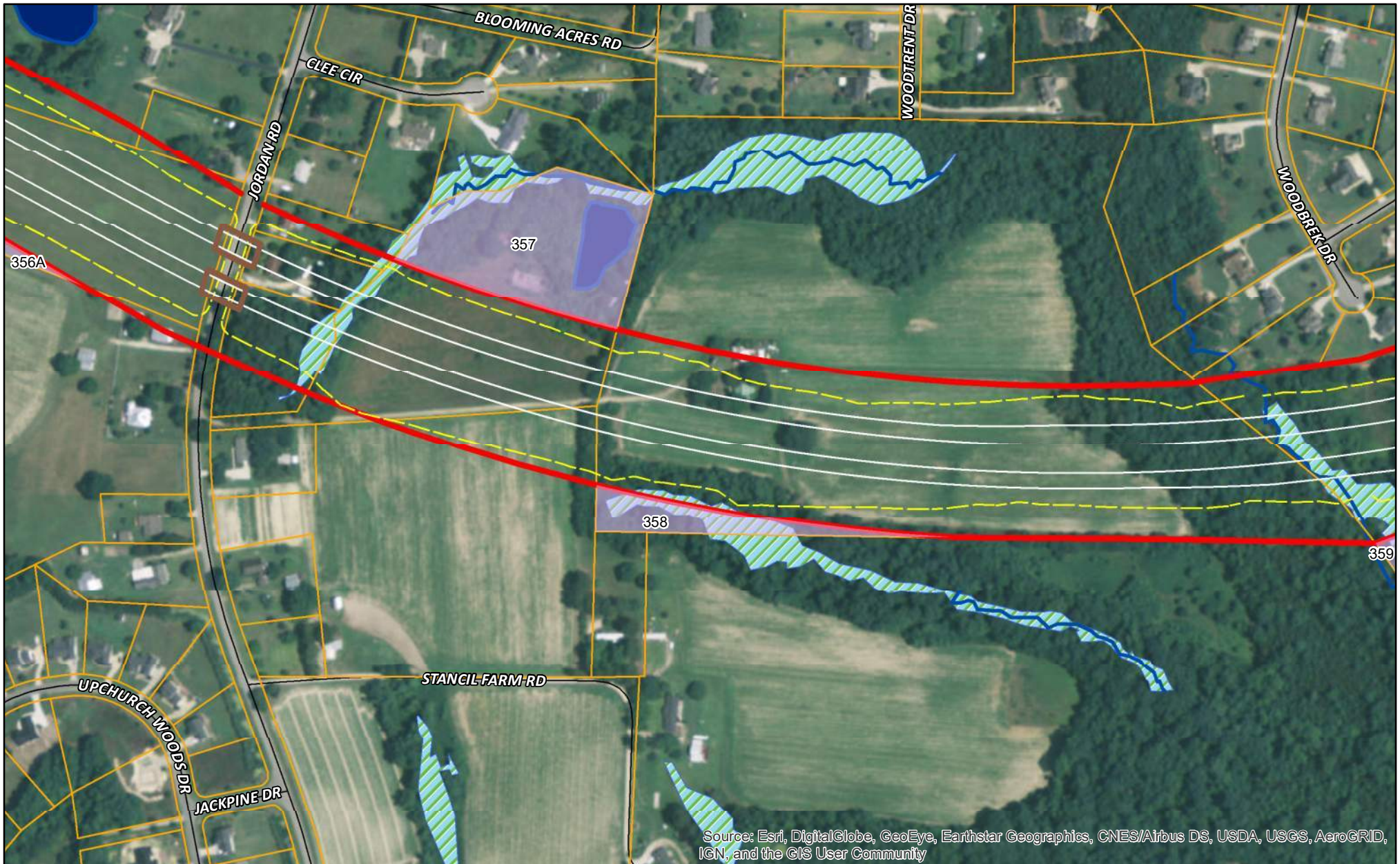


SERVICE ROAD STUDY PROPERTY ACCESS

Area: M

Figure: A-18





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

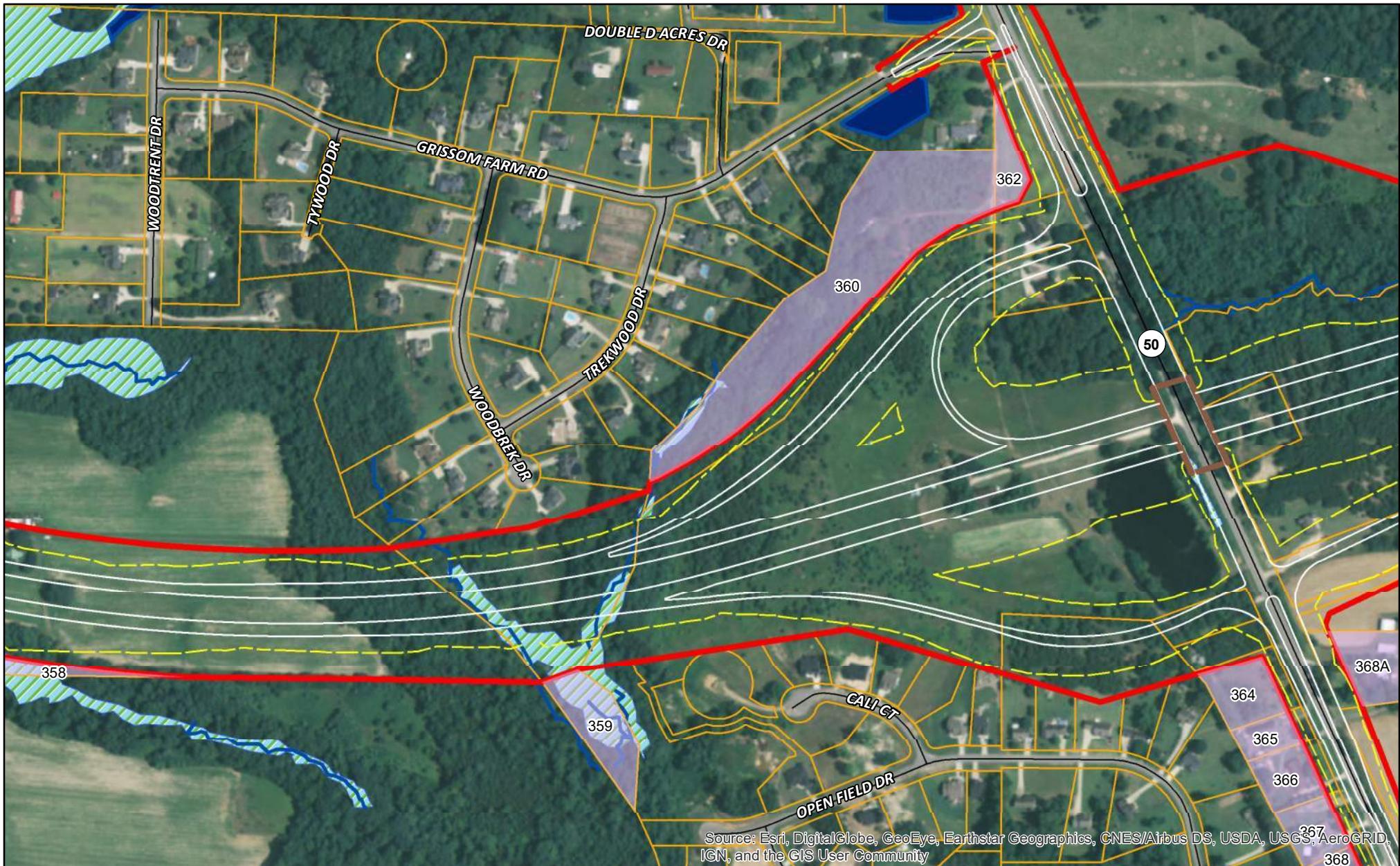
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: N

Figure: A-20



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

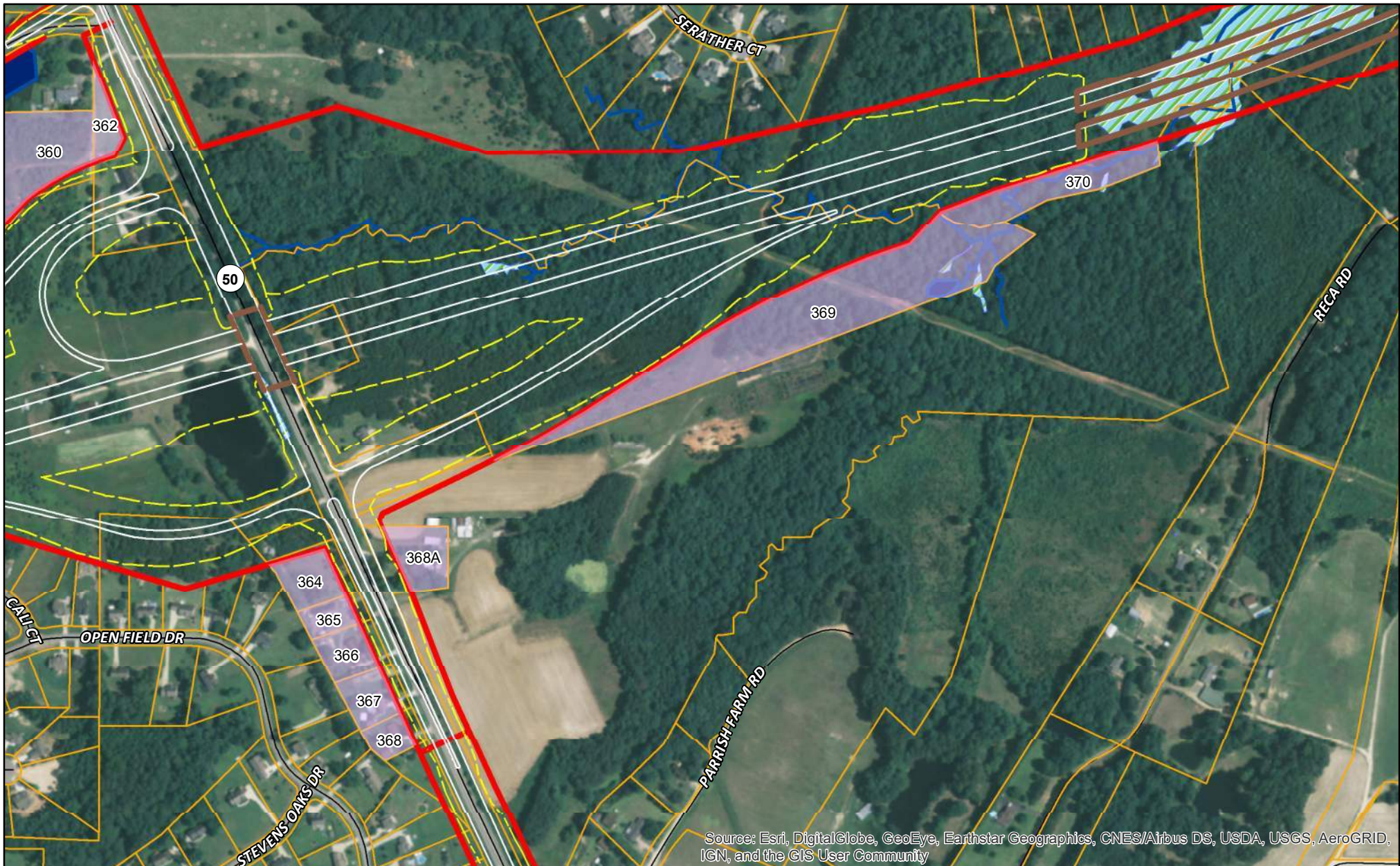
Sources: Wake & Johnston Counties GIS

Streams	Landlocked Parcels	Surveyed Wetlands
Service Road Initial Study	Right Of Way	Surveyed Ponds
Slope Stakes	Parcels	Roads
Roadway Design	Bridges	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: O

Figure: A-21



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

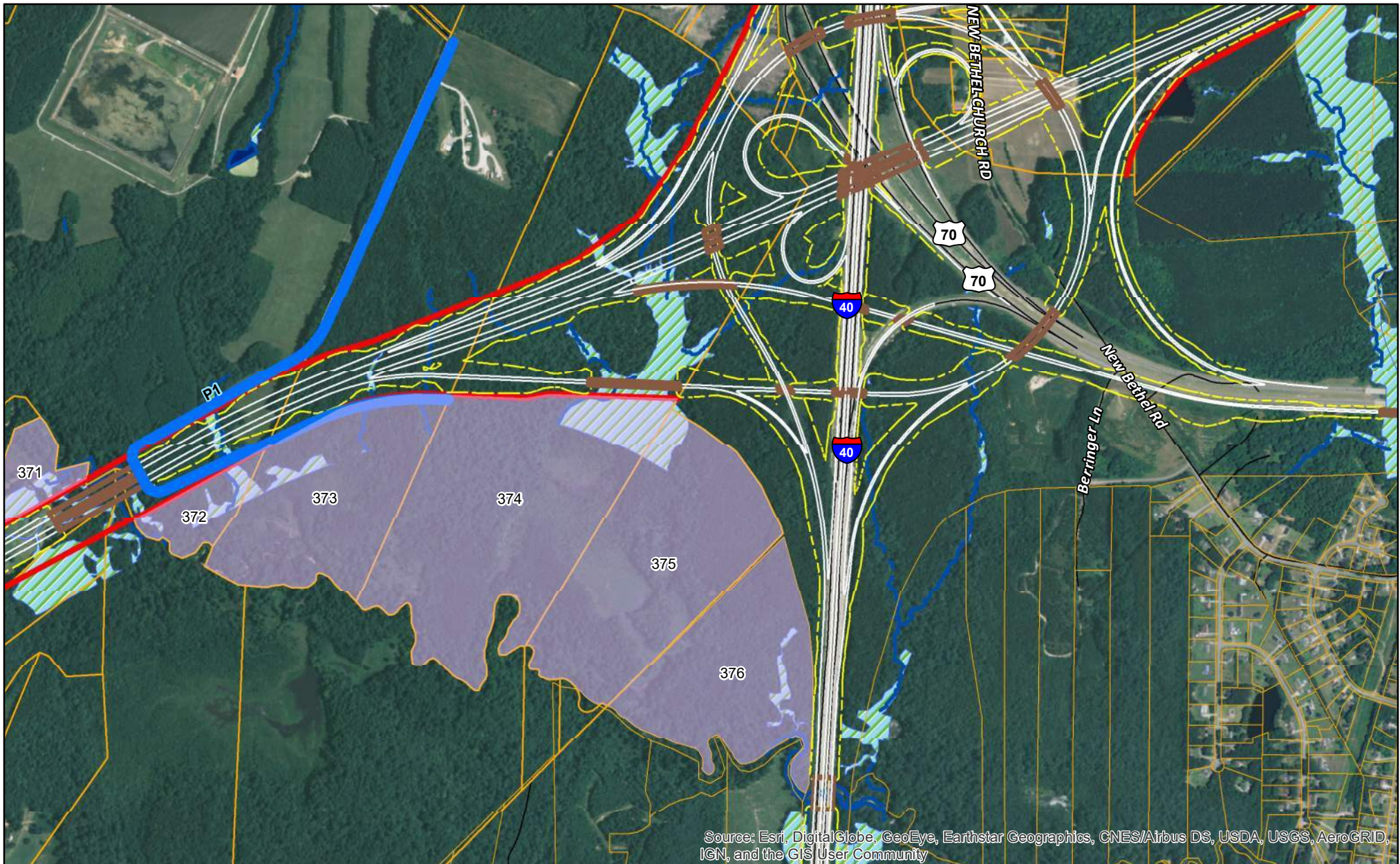
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: 0

Figure: A-22



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

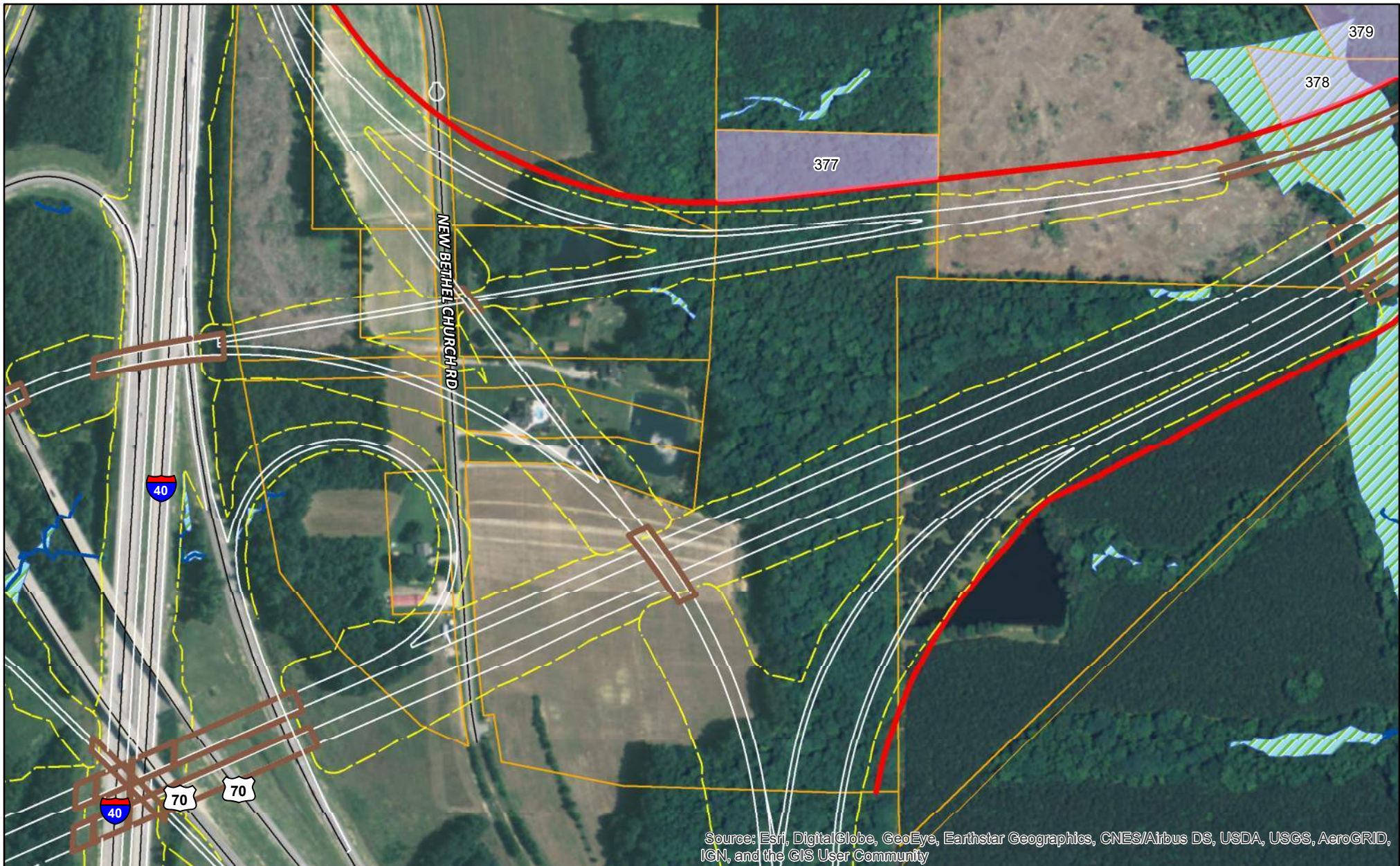
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: P

Figure: A-24



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

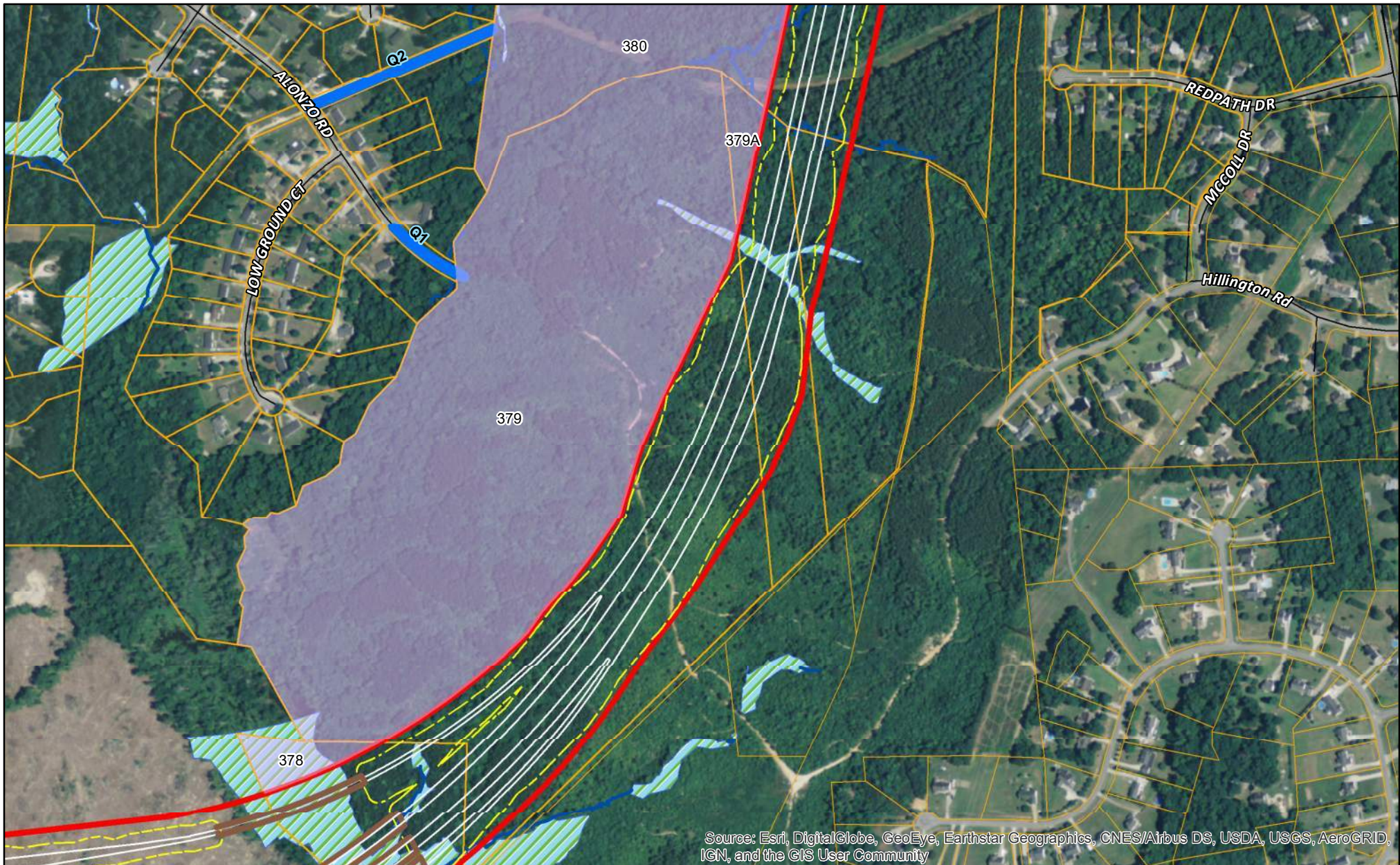
Sources: Wake & Johnston Counties GIS

Streams	Landlocked Parcels	Surveyed Wetlands
Service Road Initial Study	Right Of Way	Surveyed Ponds
Slope Stakes	Parcels	Roads
Roadway Design	Bridges	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: Q

Figure: A-25



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS

Streams	Landlocked Parcels	Surveyed Wetlands
Service Road Initial Study	Right Of Way	Surveyed Ponds
Slope Stakes	Parcels	Roads
Roadway Design	Bridges	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: Q

Figure: A-26



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

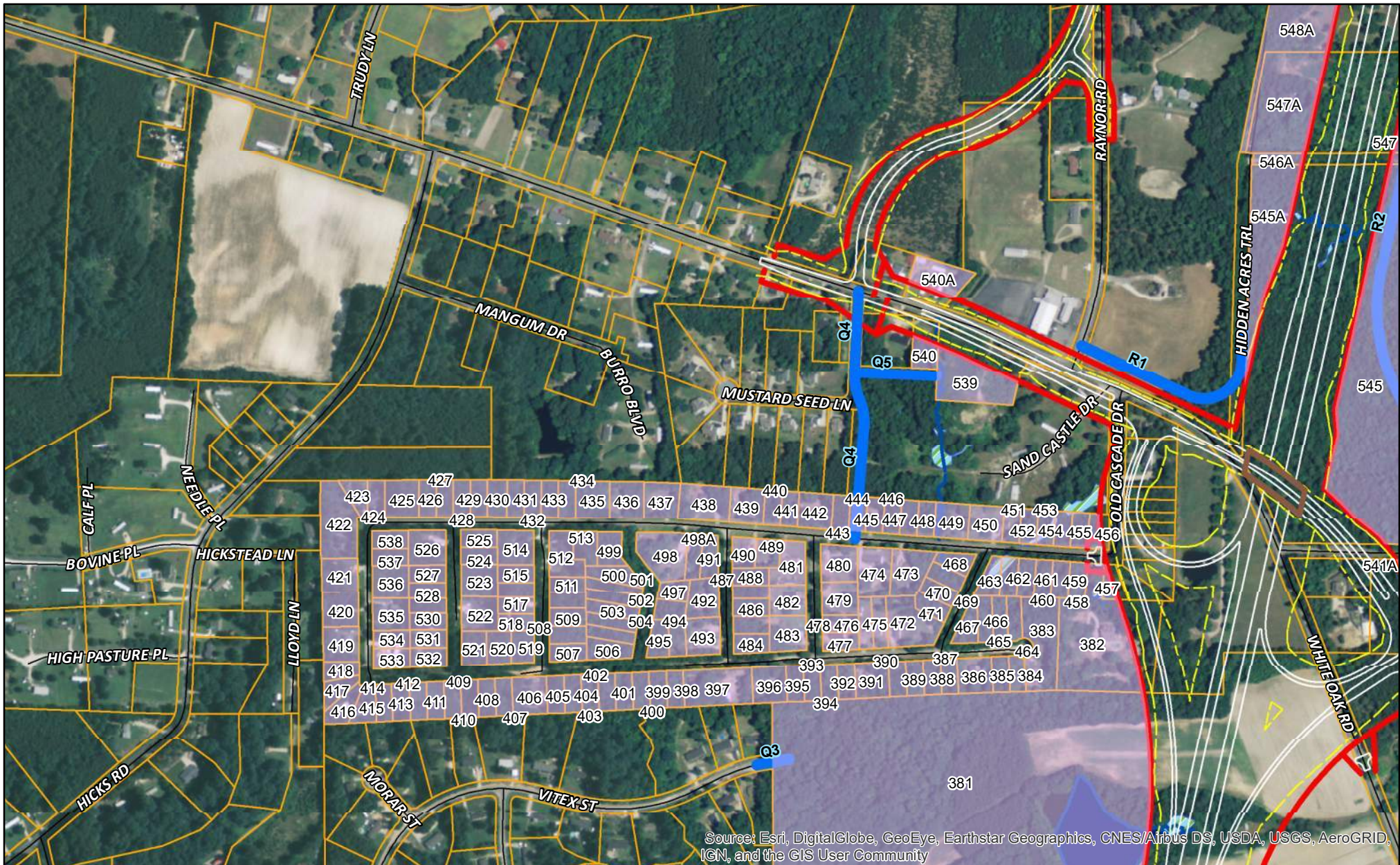
Sources: Wake & Johnston Counties GIS



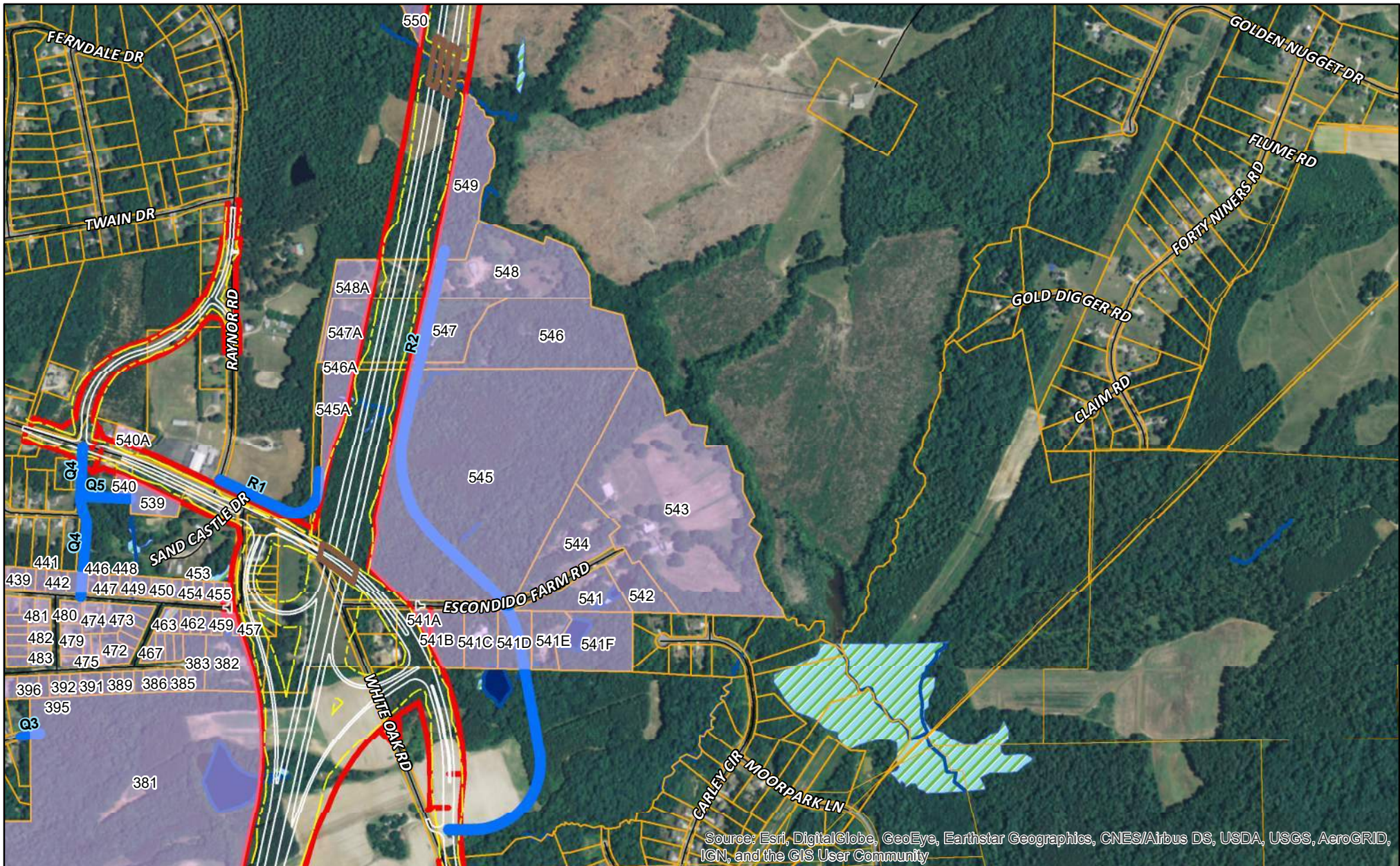
SERVICE ROAD STUDY PROPERTY ACCESS

Area: Q

Figure: A-27



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

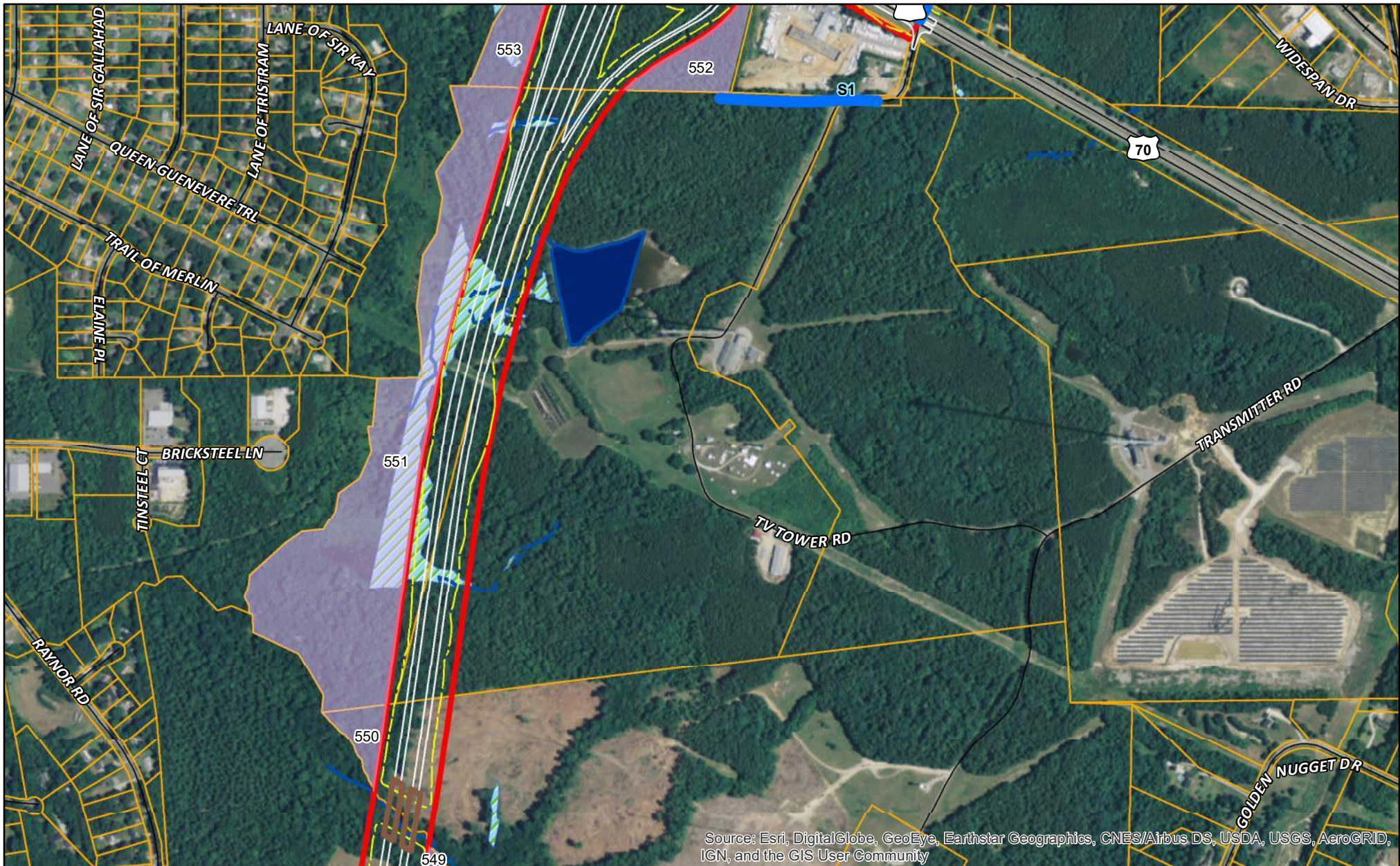
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: R




Figure: A-29



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

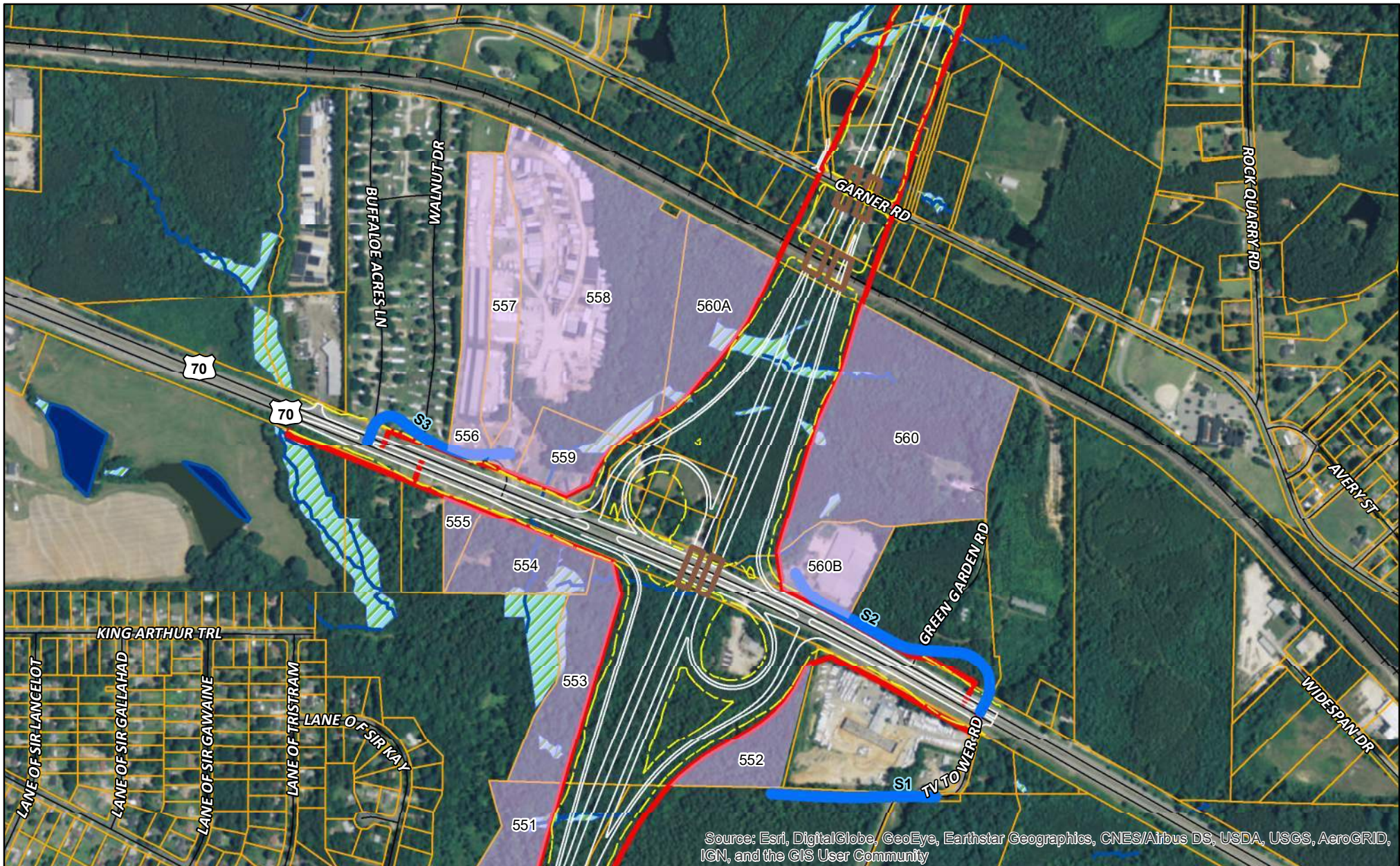
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: R

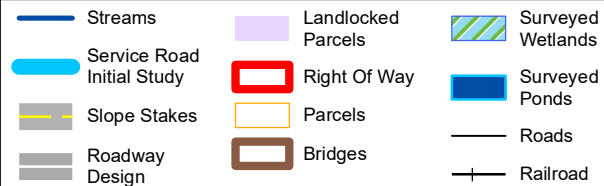
Figure: A-30



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

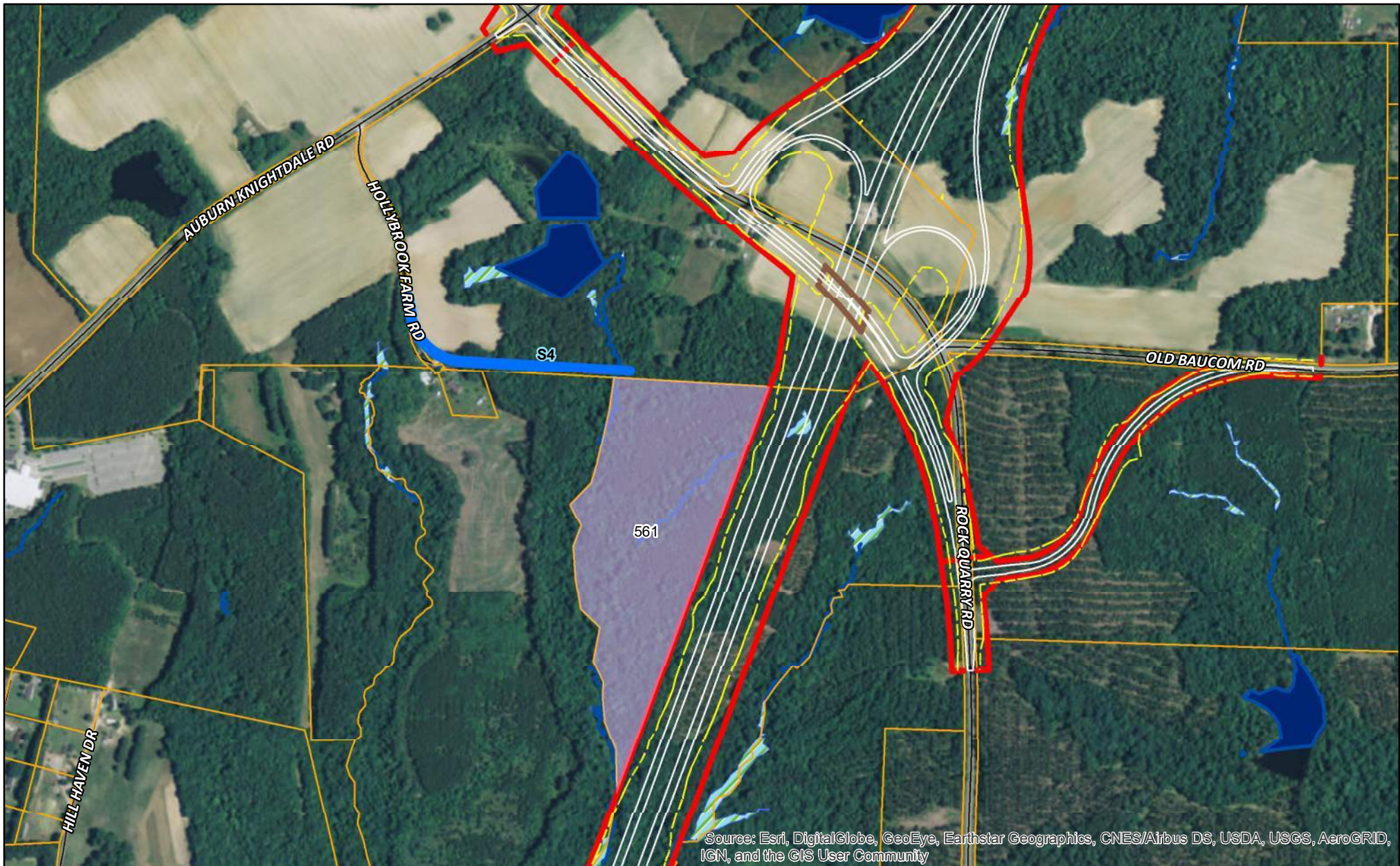
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Area: S

Figure: A-31



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

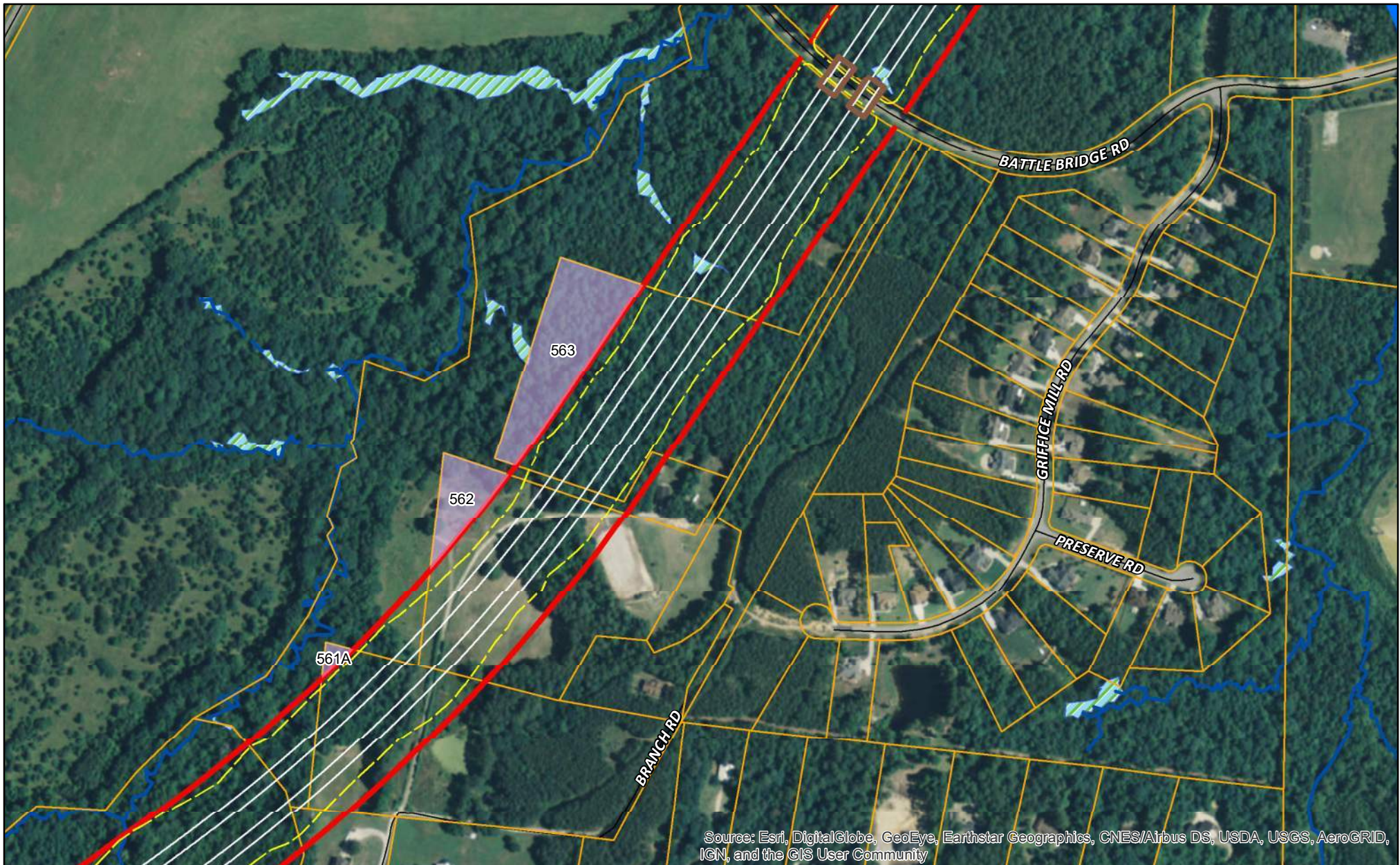
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: S

Figure: A-32






Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

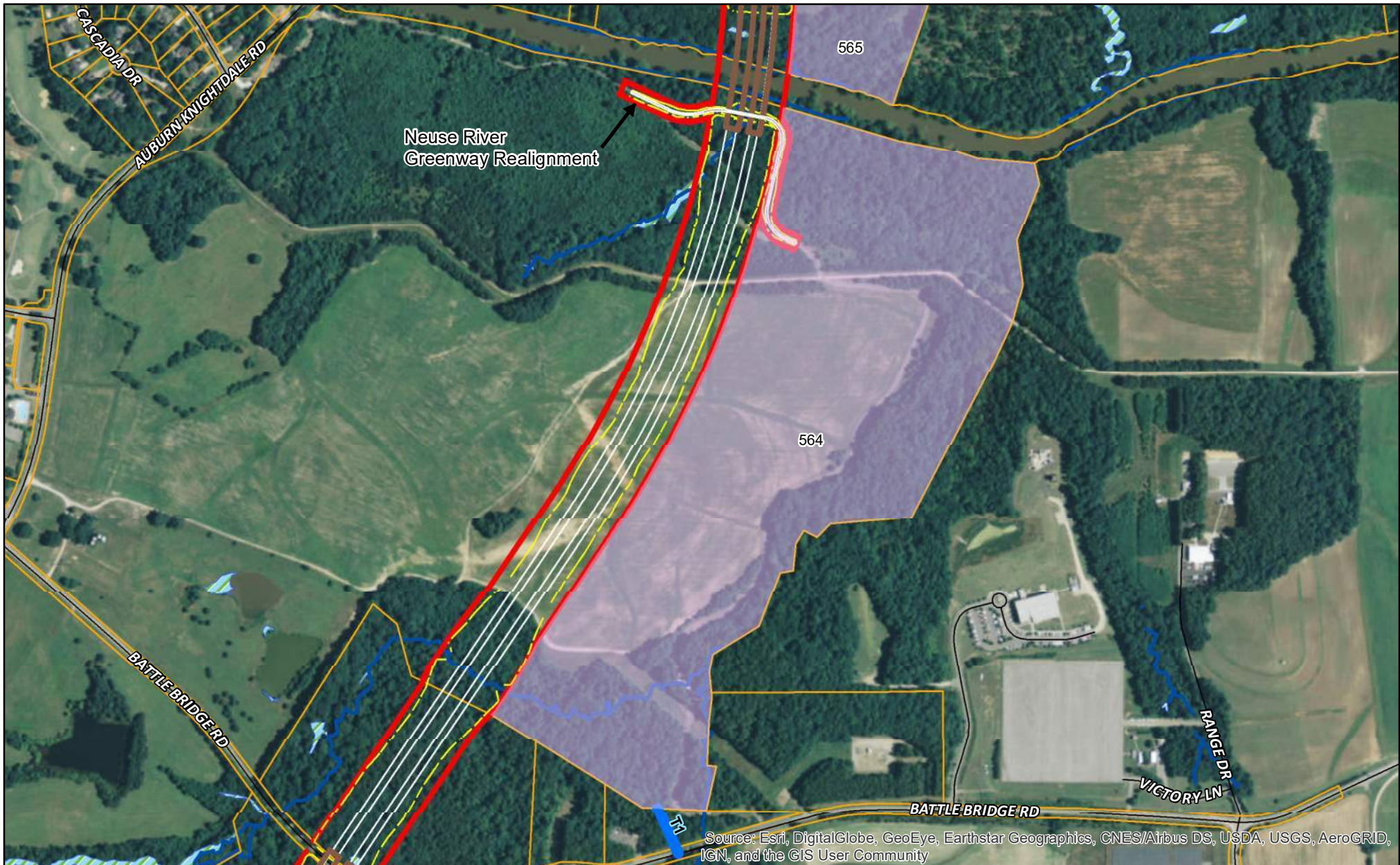
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: T

Figure: A-33



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

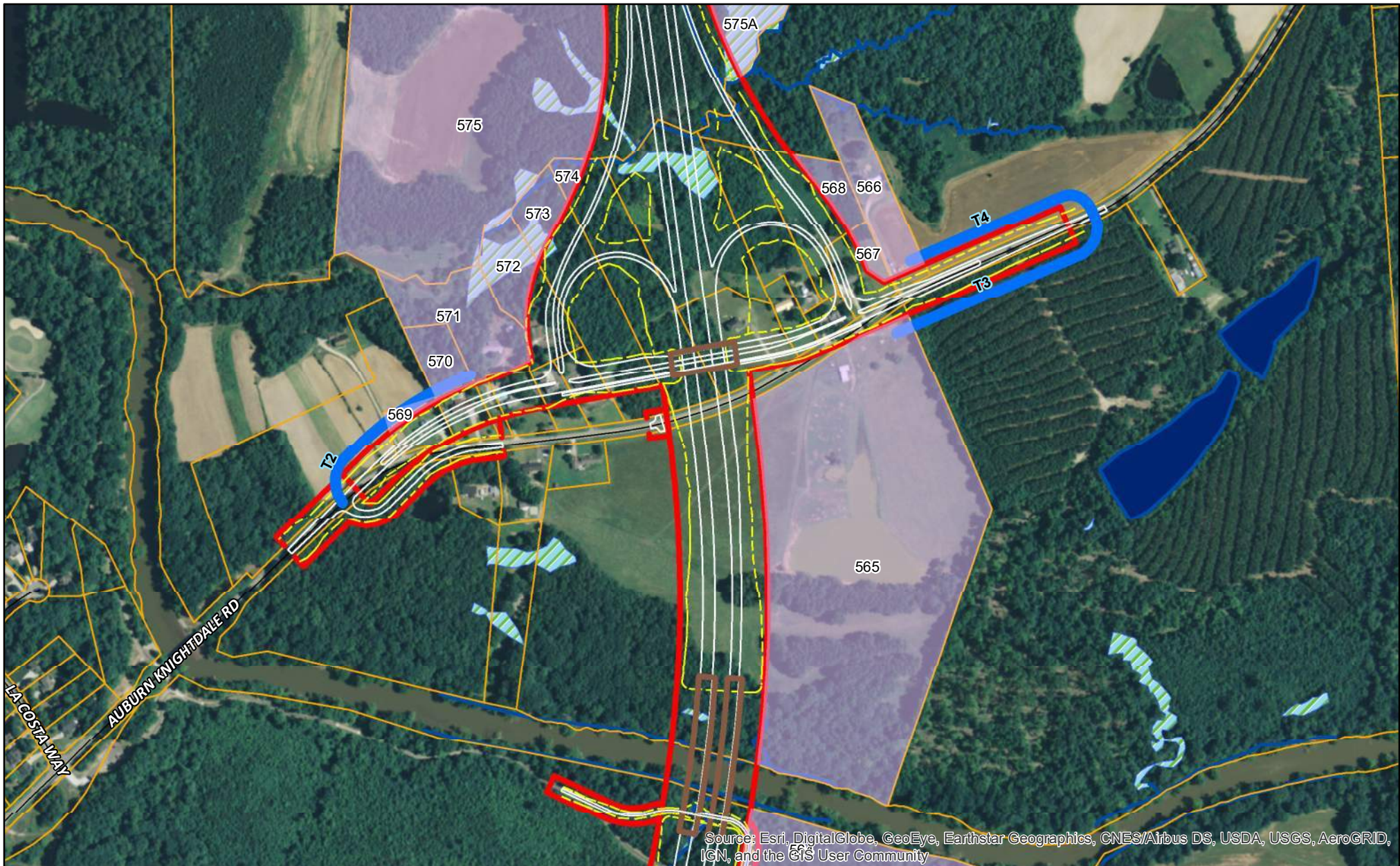
Sources: Wake & Johnston Counties GIS

 Streams	 Landlocked Parcels	 Surveyed Wetlands
 Service Road Initial Study	 Right Of Way	 Surveyed Ponds
 Slope Stakes	 Parcels	 Roads
 Roadway Design	 Bridges	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: T

Figure: A-34



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

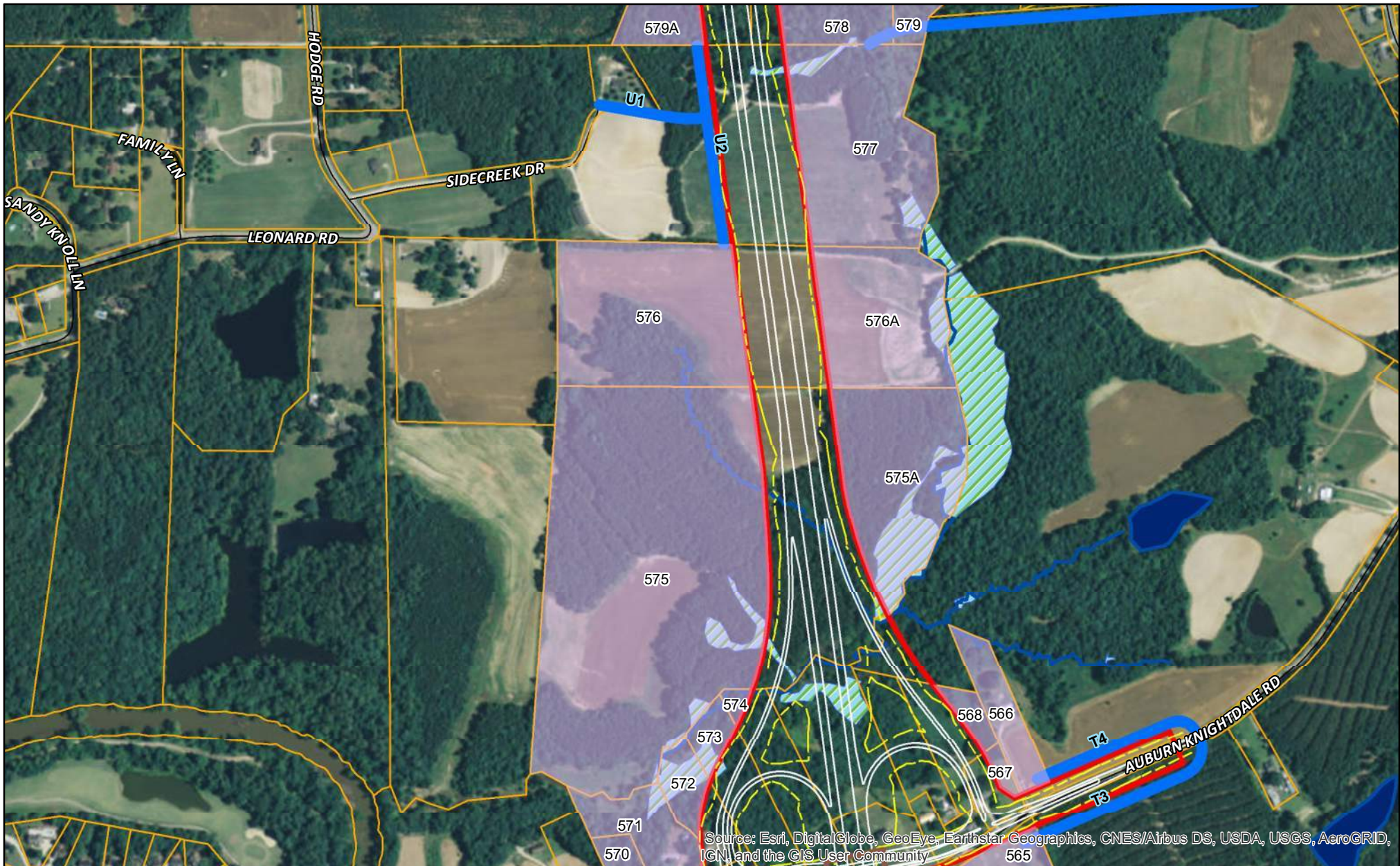
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: T

Figure: A-35



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

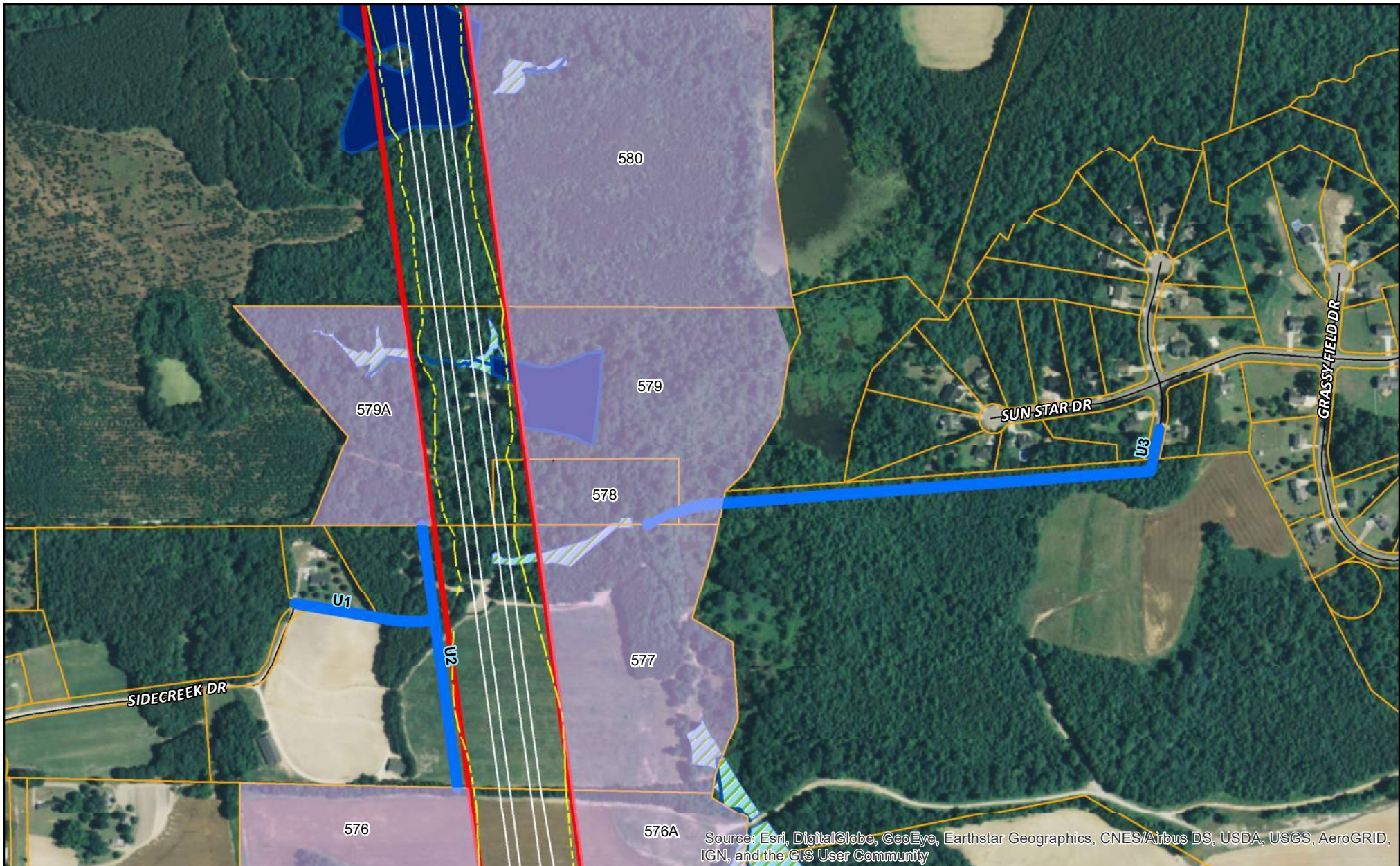
Sources: Wake & Johnston Counties GIS

- | | | |
|----------------------------|--------------------|-------------------|
| Streams | Landlocked Parcels | Surveyed Wetlands |
| Service Road Initial Study | Right Of Way | Surveyed Ponds |
| Slope Stakes | Parcels | Roads |
| Roadway Design | Bridges | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Area: U

Figure: A-36



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

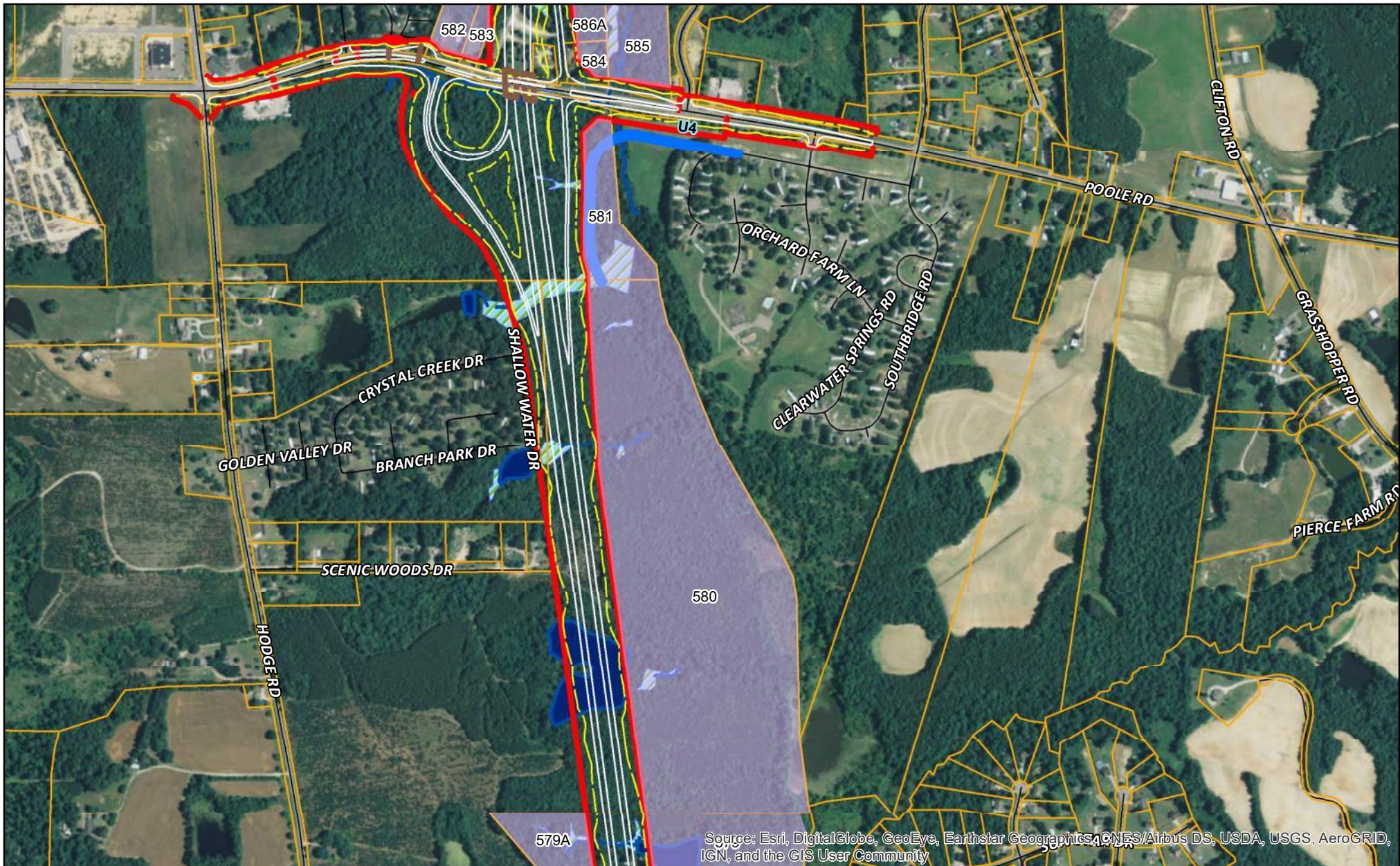
Sources: Wake & Johnston Counties GIS

Streams	Landlocked Parcels	Surveyed Wetlands
Service Road Initial Study	Right Of Way	Surveyed Ponds
Slope Stakes	Parcels	Roads
Roadway Design	Bridges	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: U

Figure: A-37



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

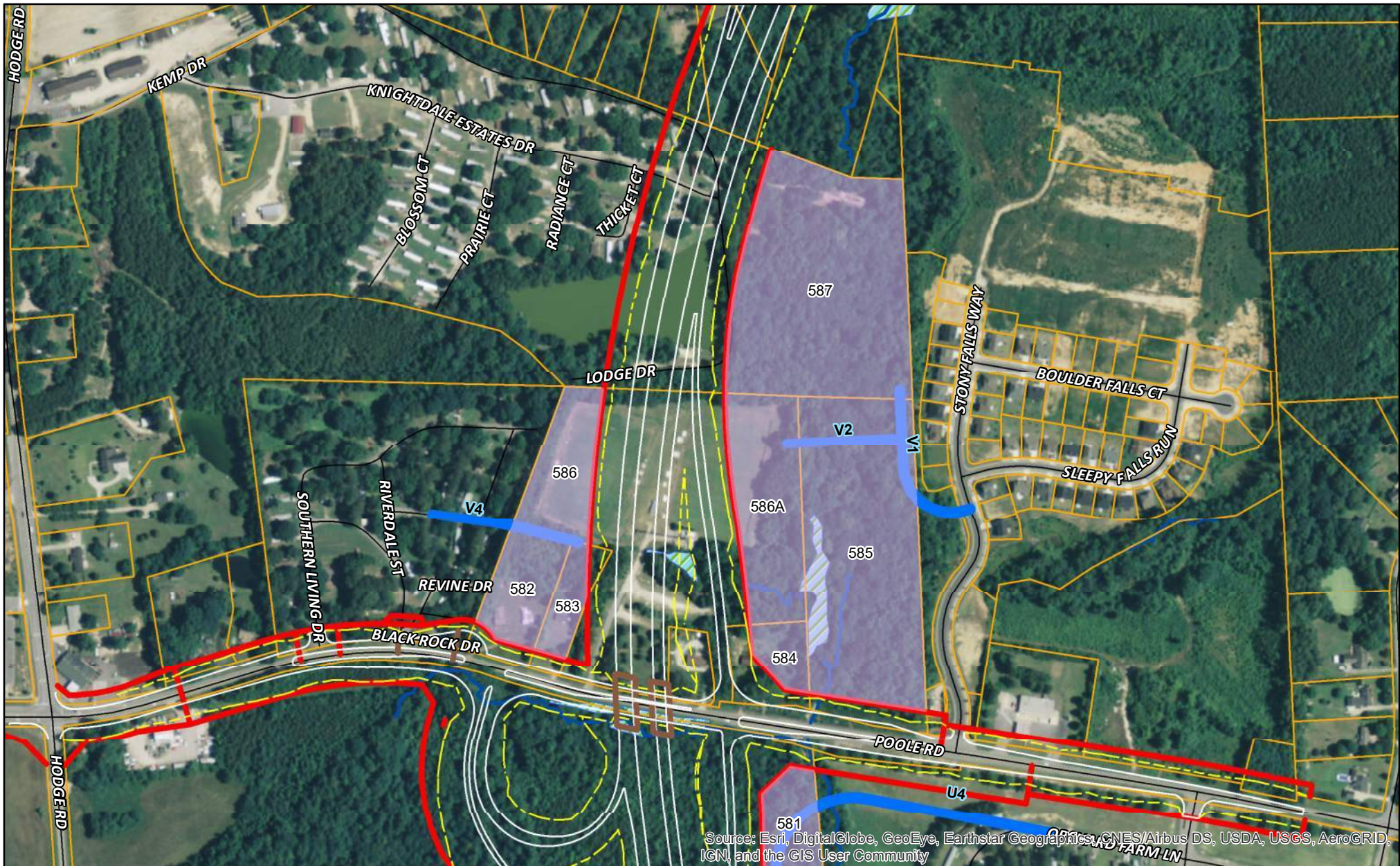
Sources: Wake & Johnston Counties GIS

Streams	Landlocked Parcels	Surveyed Wetlands
Service Road Initial Study	Right Of Way	Surveyed Ponds
Slope Stakes	Parcels	Roads
Roadway Design	Bridges	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Area: U

Figure: A-38



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

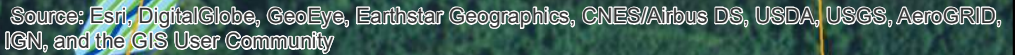
Sources: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

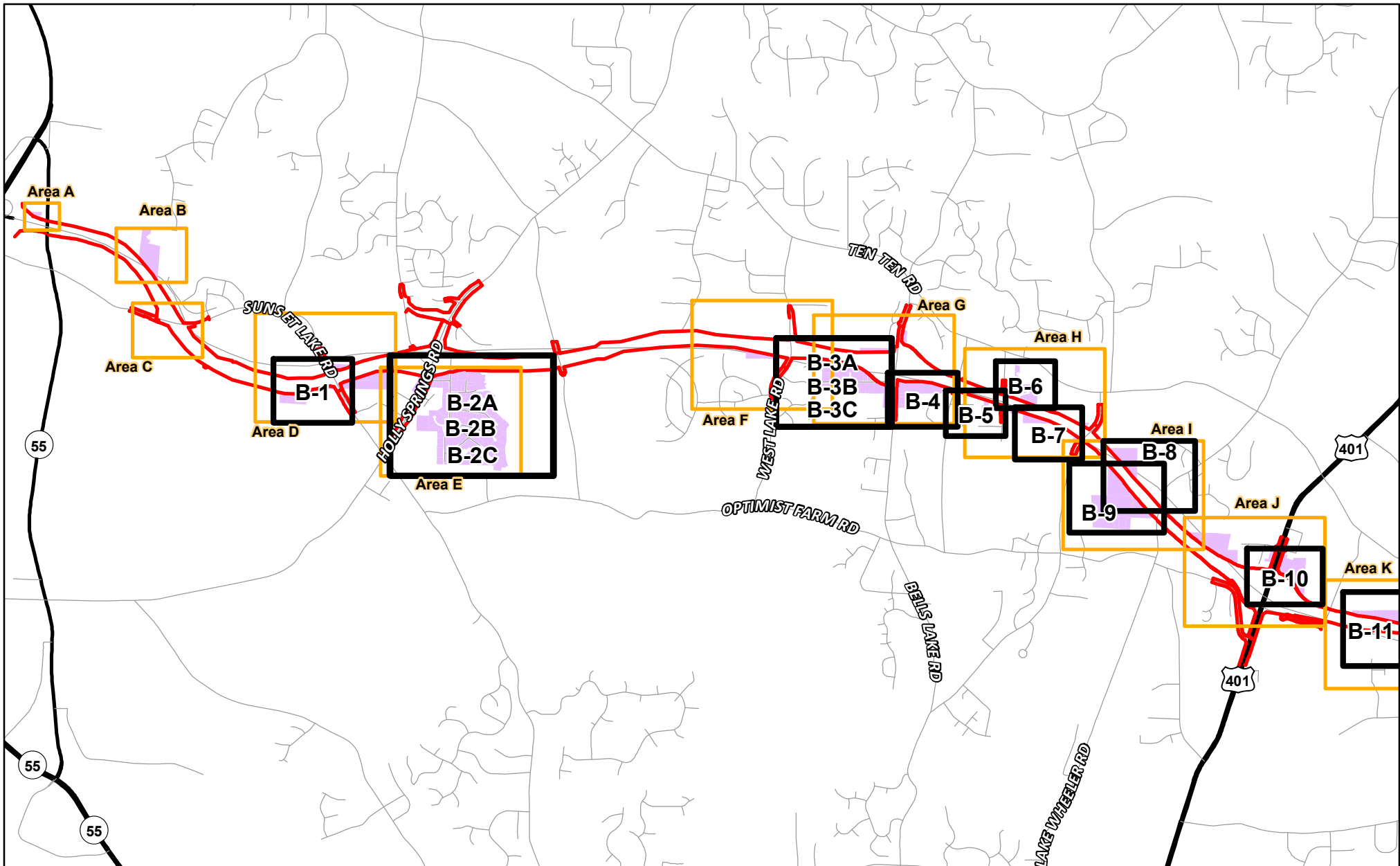
Area: V

Figure: A-39



APPENDIX B

Service Road Designs



COMPLETE 540

TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS



Area Borders



Figure Borders

SR Route

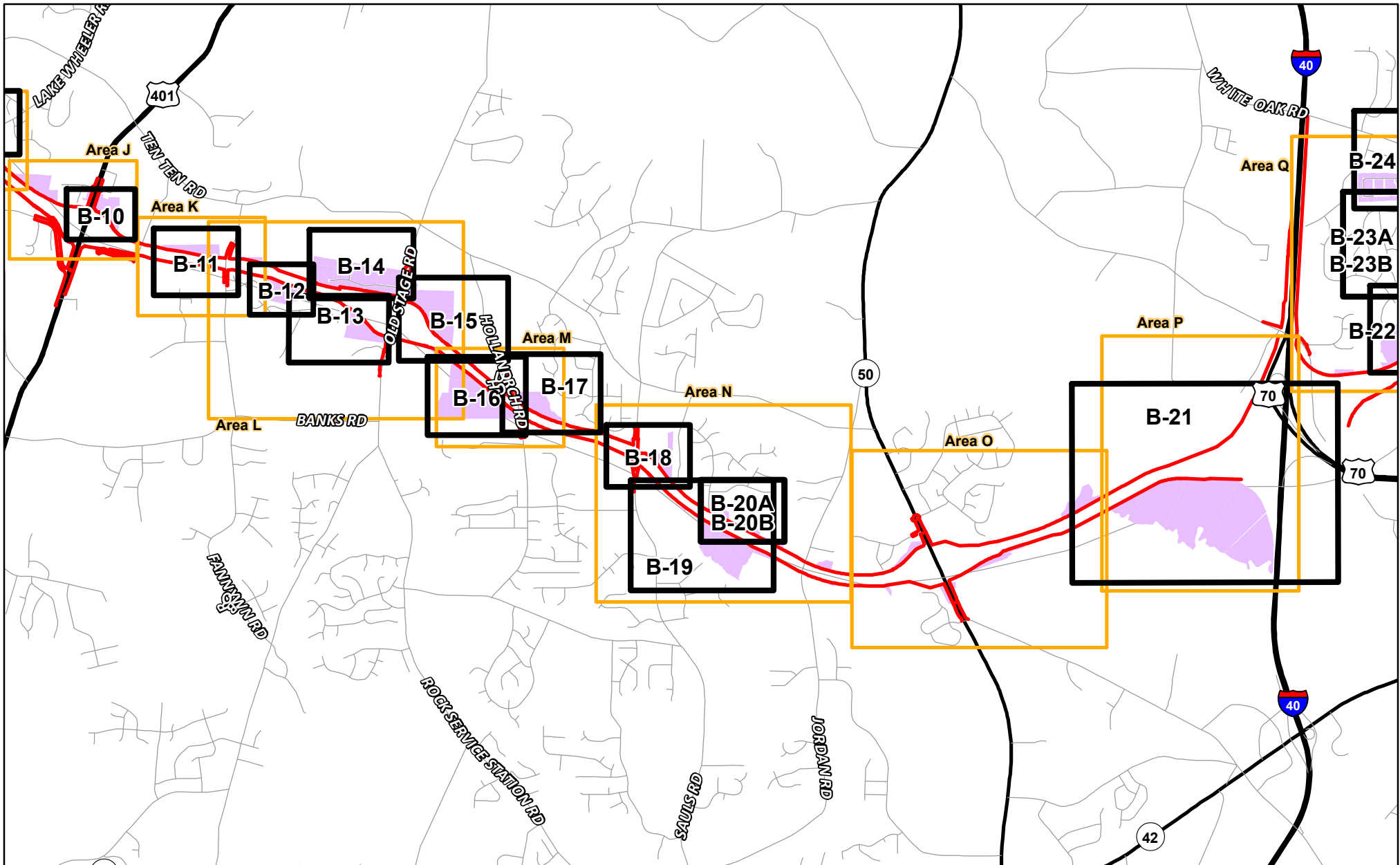
Landlocked
Parcels

Right Of
Way

SERVICE ROAD STUDY

APPENDIX B

Figure Index 1 of 3



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Sources: Wake & Johnston Counties GIS

Area Borders

Figure Borders

SR Route

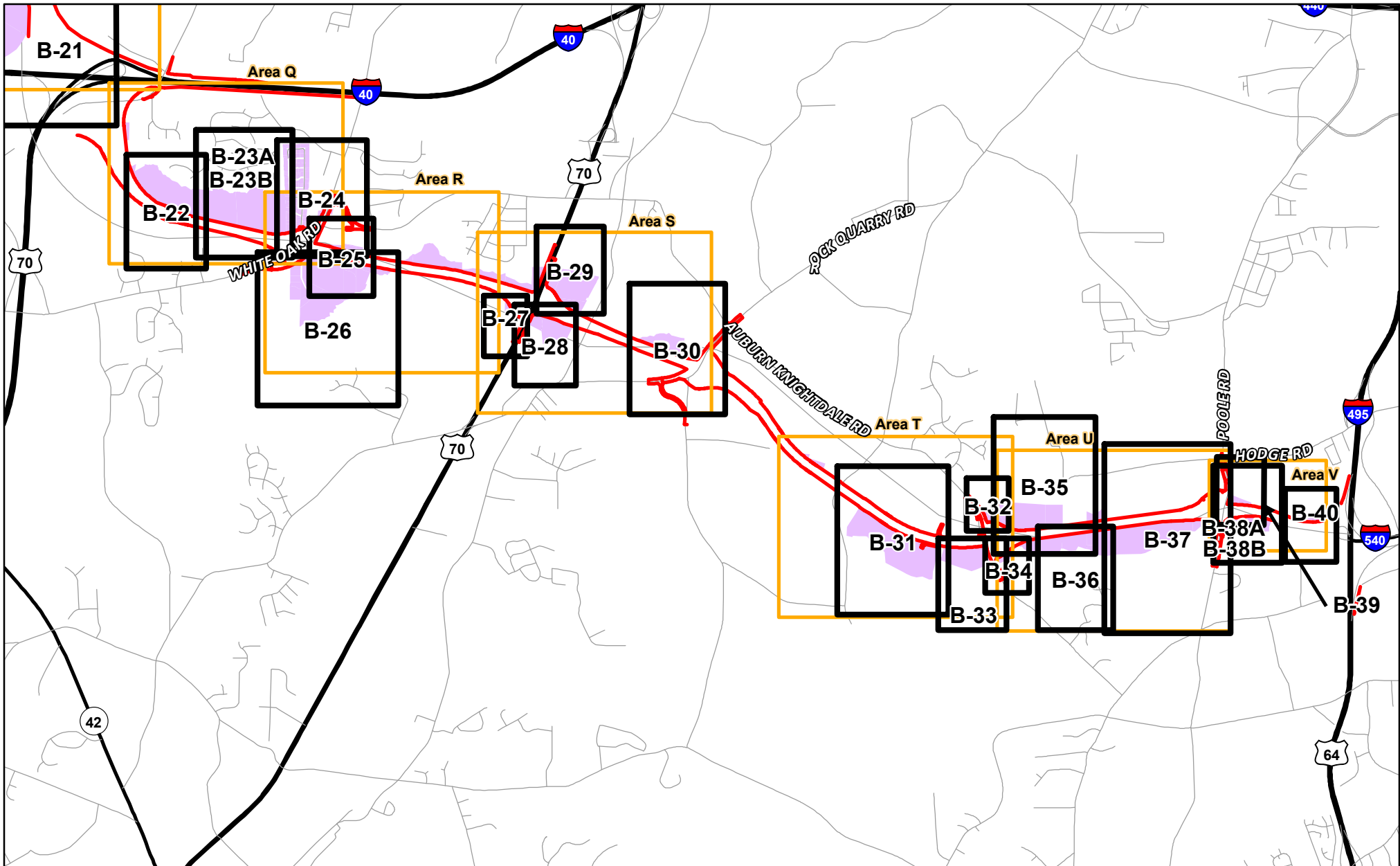
Landlocked
Parcels

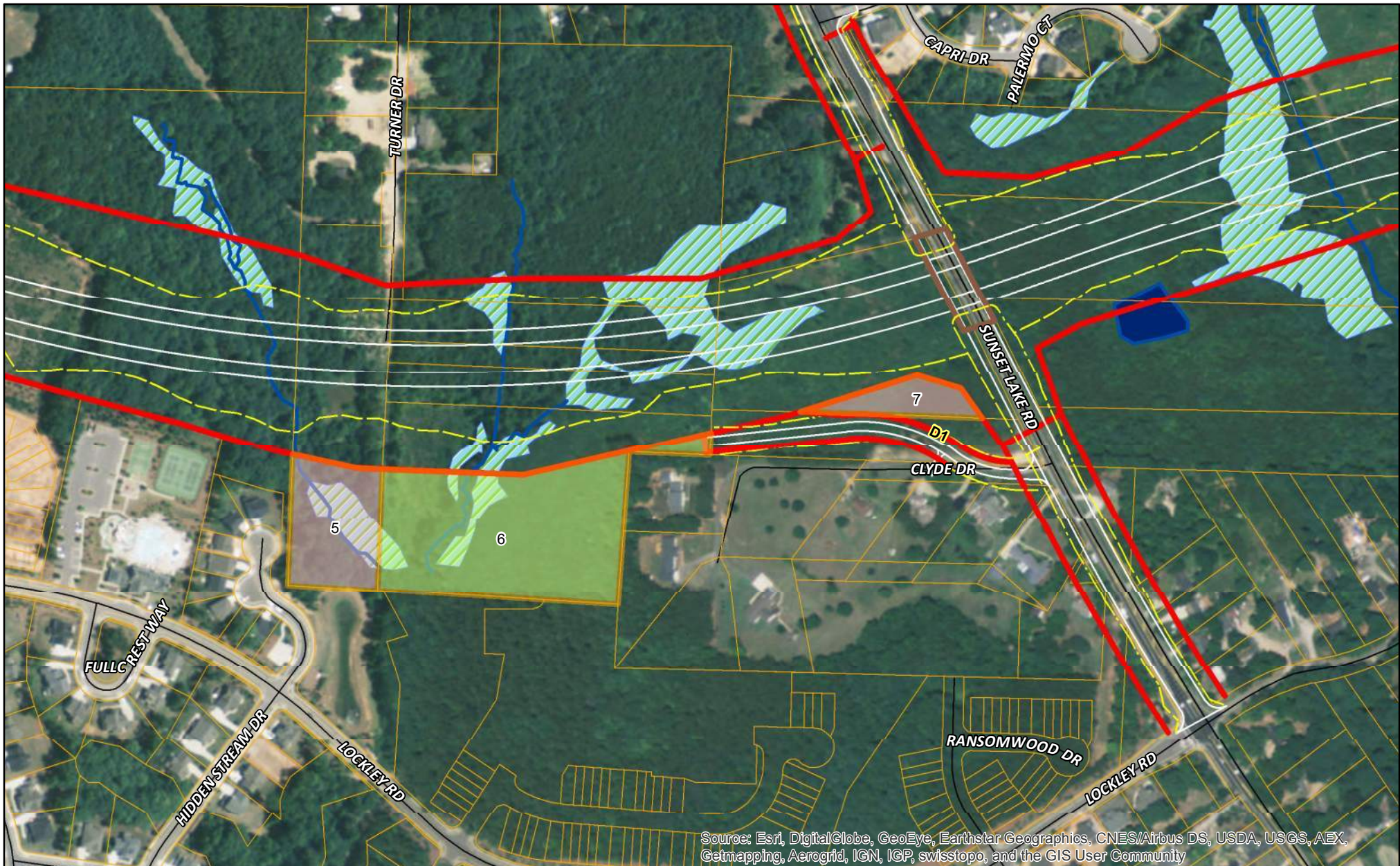
Right Of
Way

SERVICE ROAD STUDY

APPENDIX B

Figure Index 2 of 3





PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

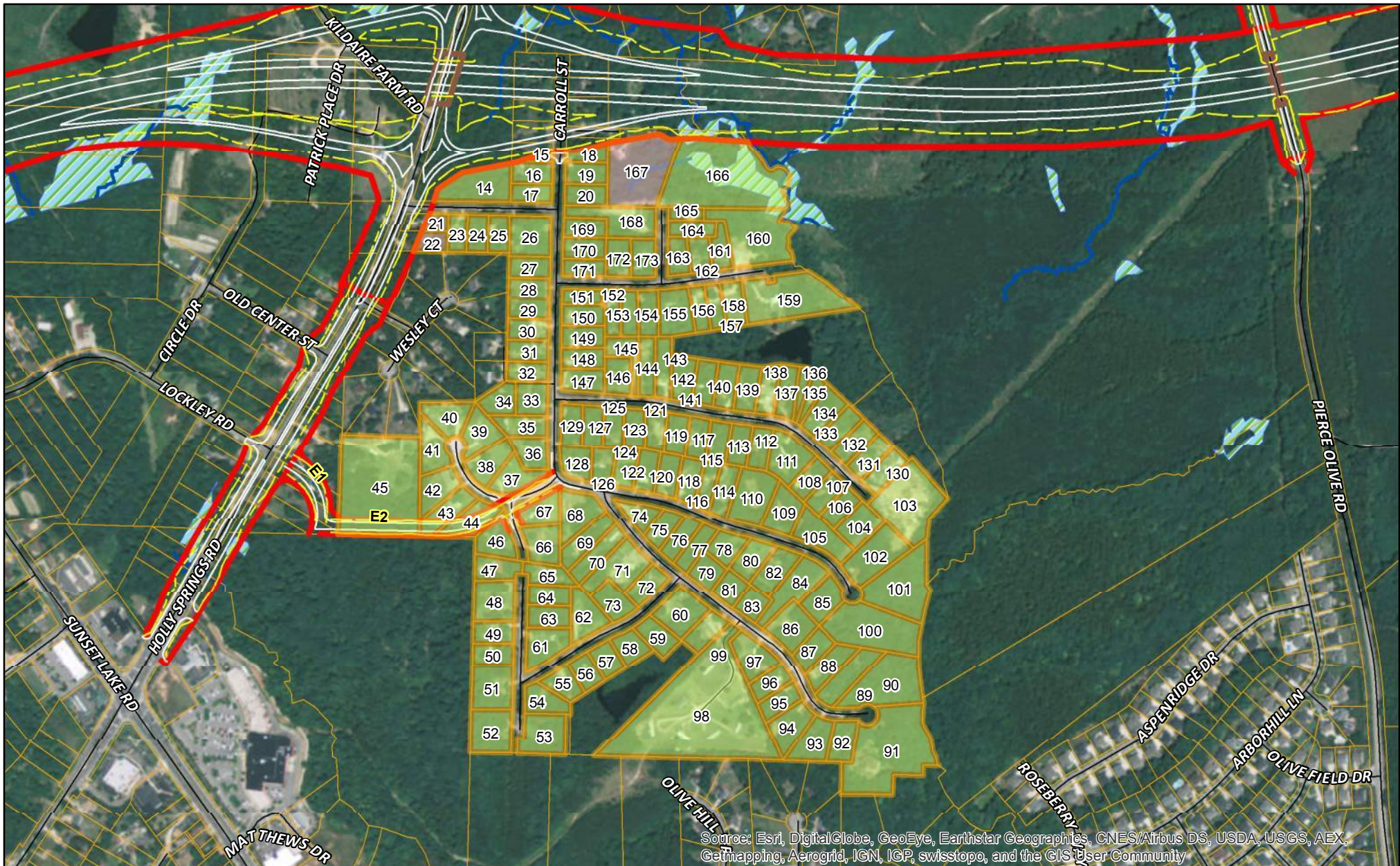
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
D1

Figure:
B-1



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

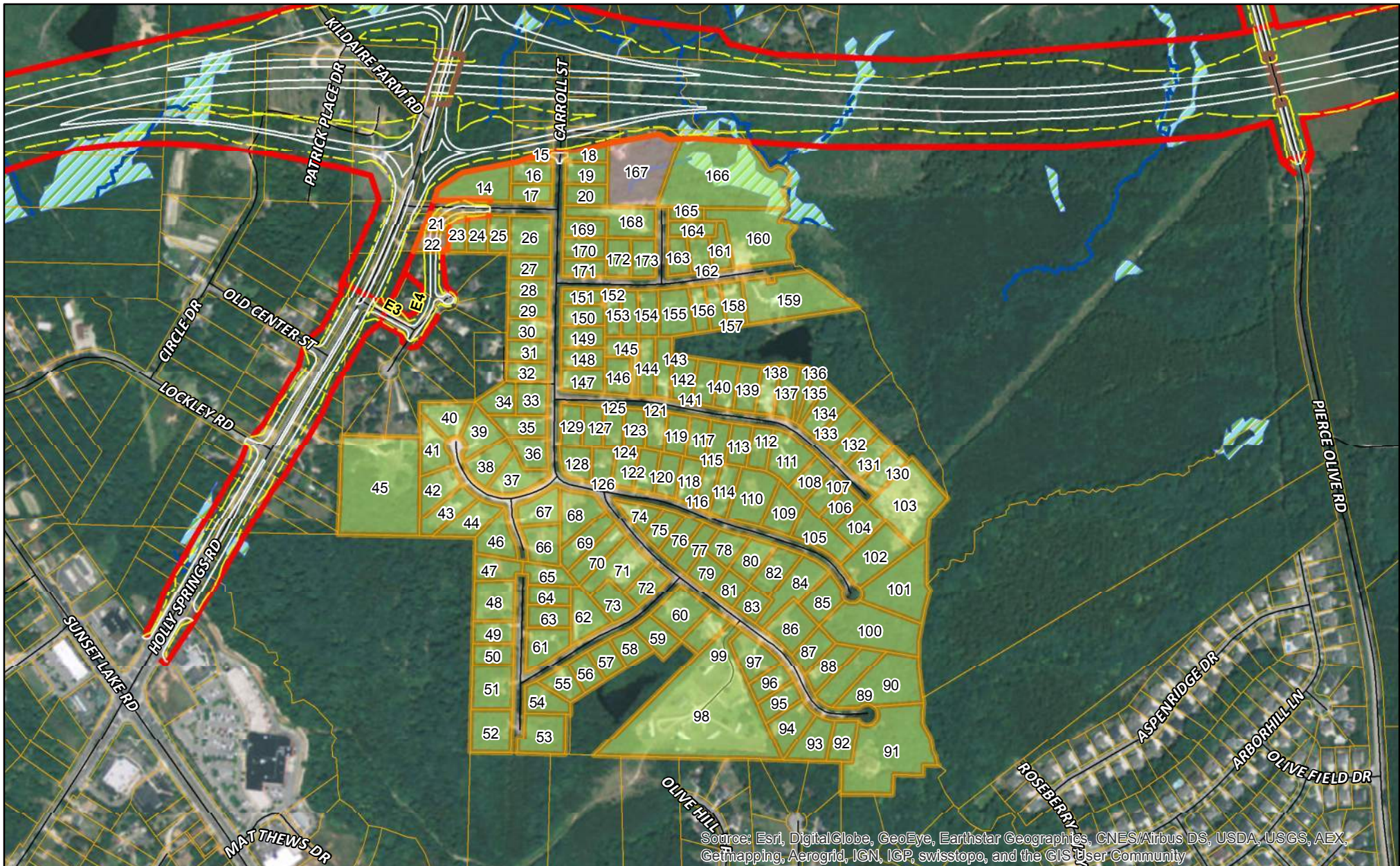
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
E1 & E2**

**Figure:
B-2A**



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

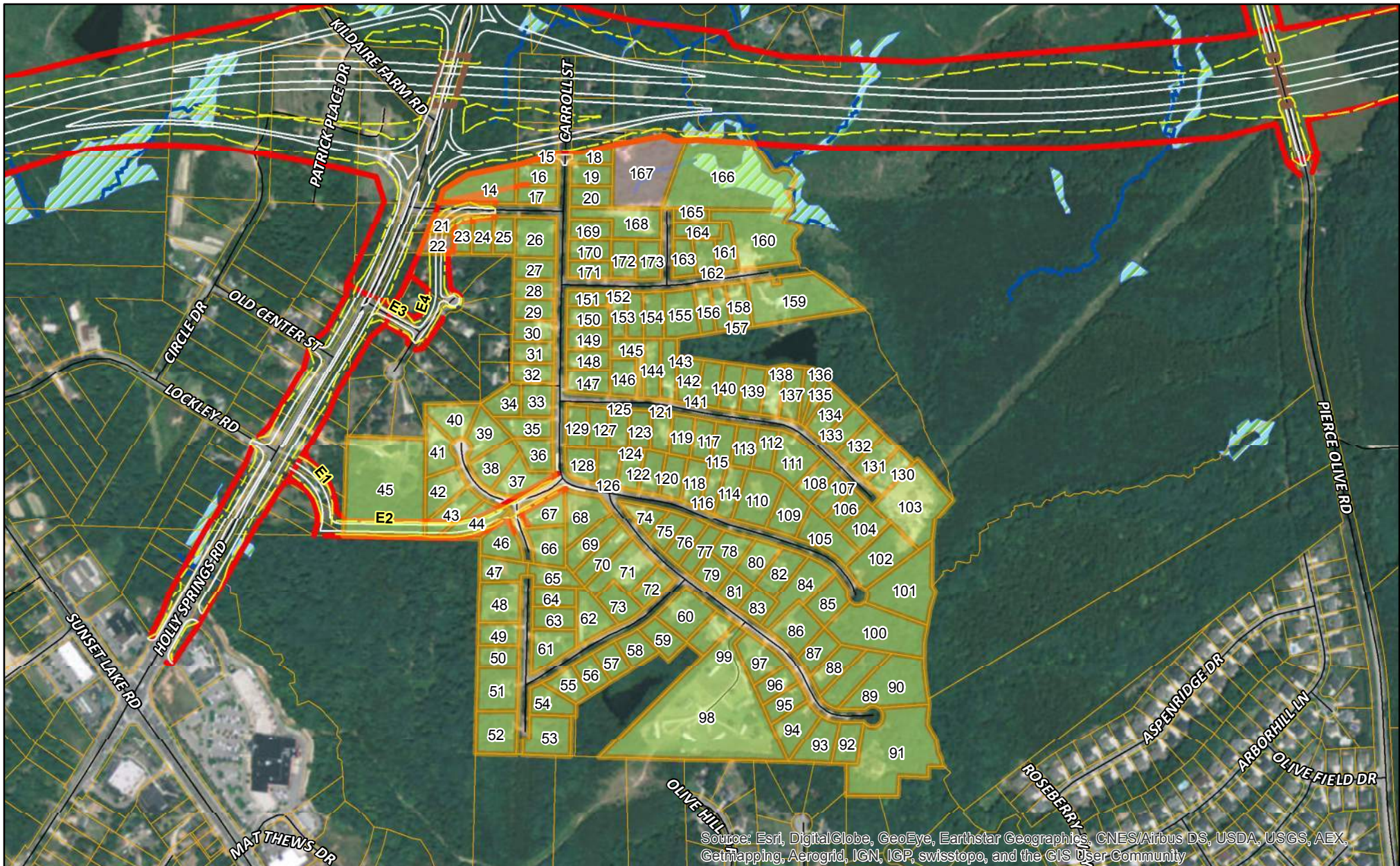
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
E3 & E4**

**Figure:
B-2B**



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

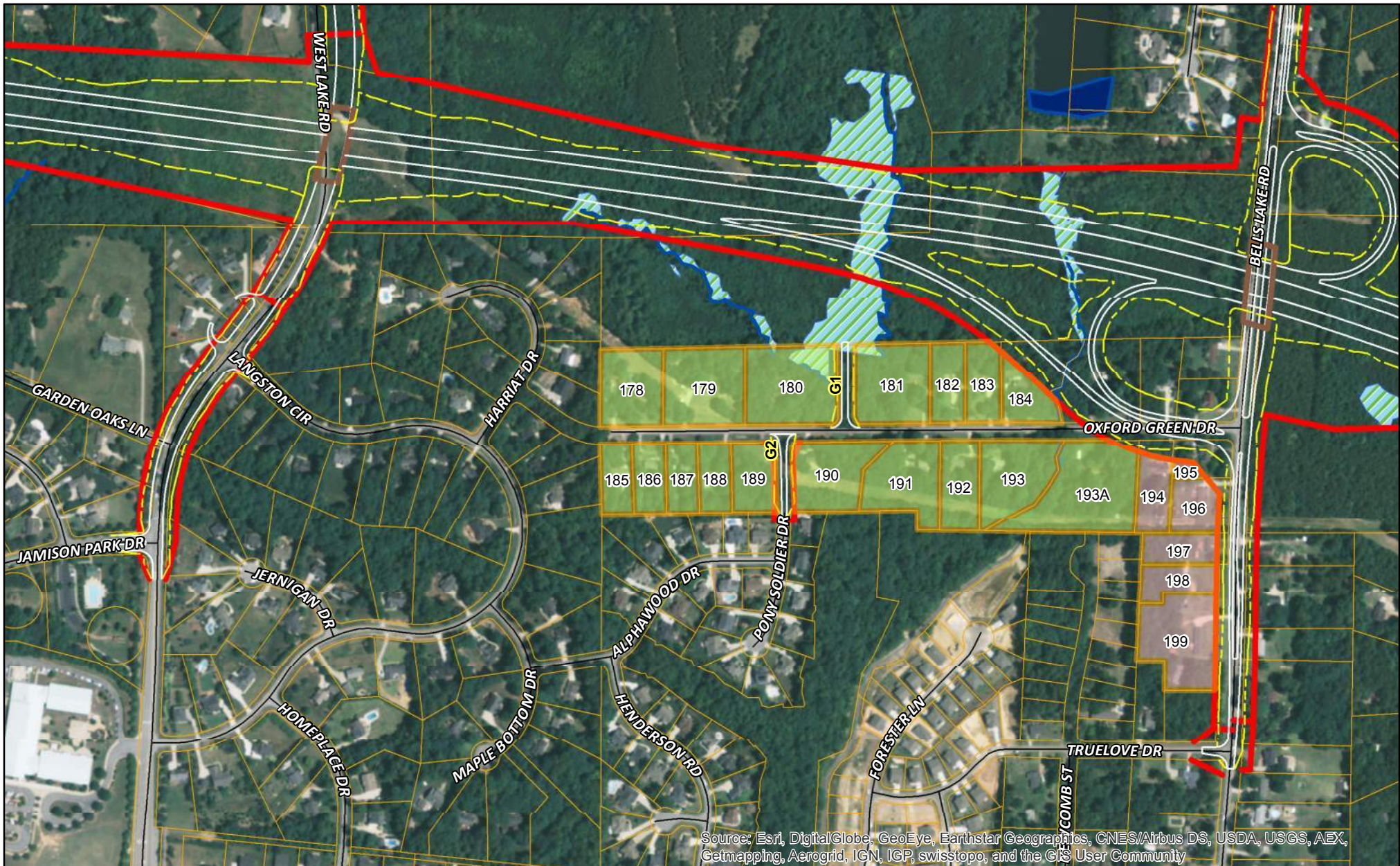
NOT TO SCALE

Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road: E1, E2, E3, & E4
Figure: B-2C



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

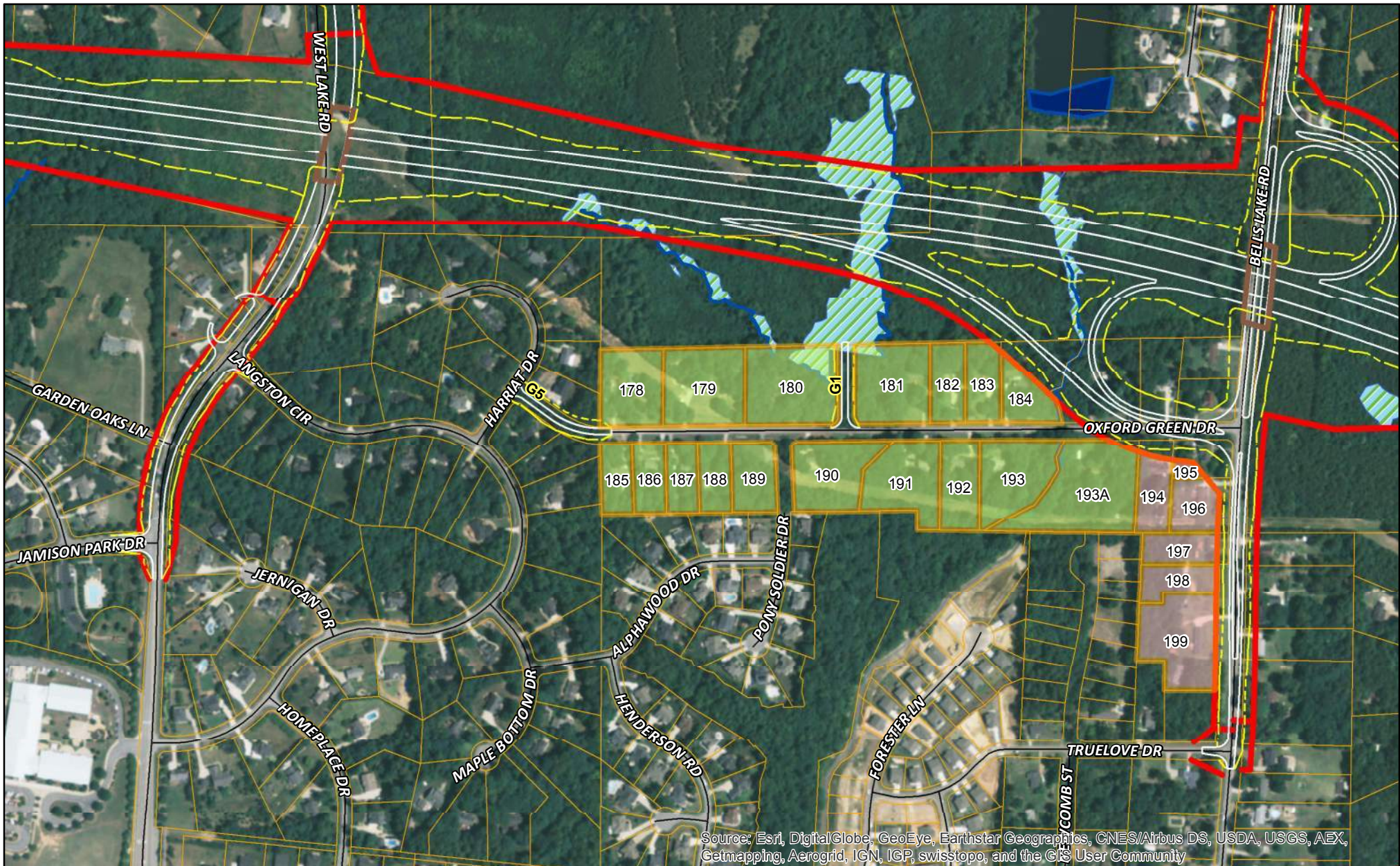
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
G1 & G2

Figure:
B-3A



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

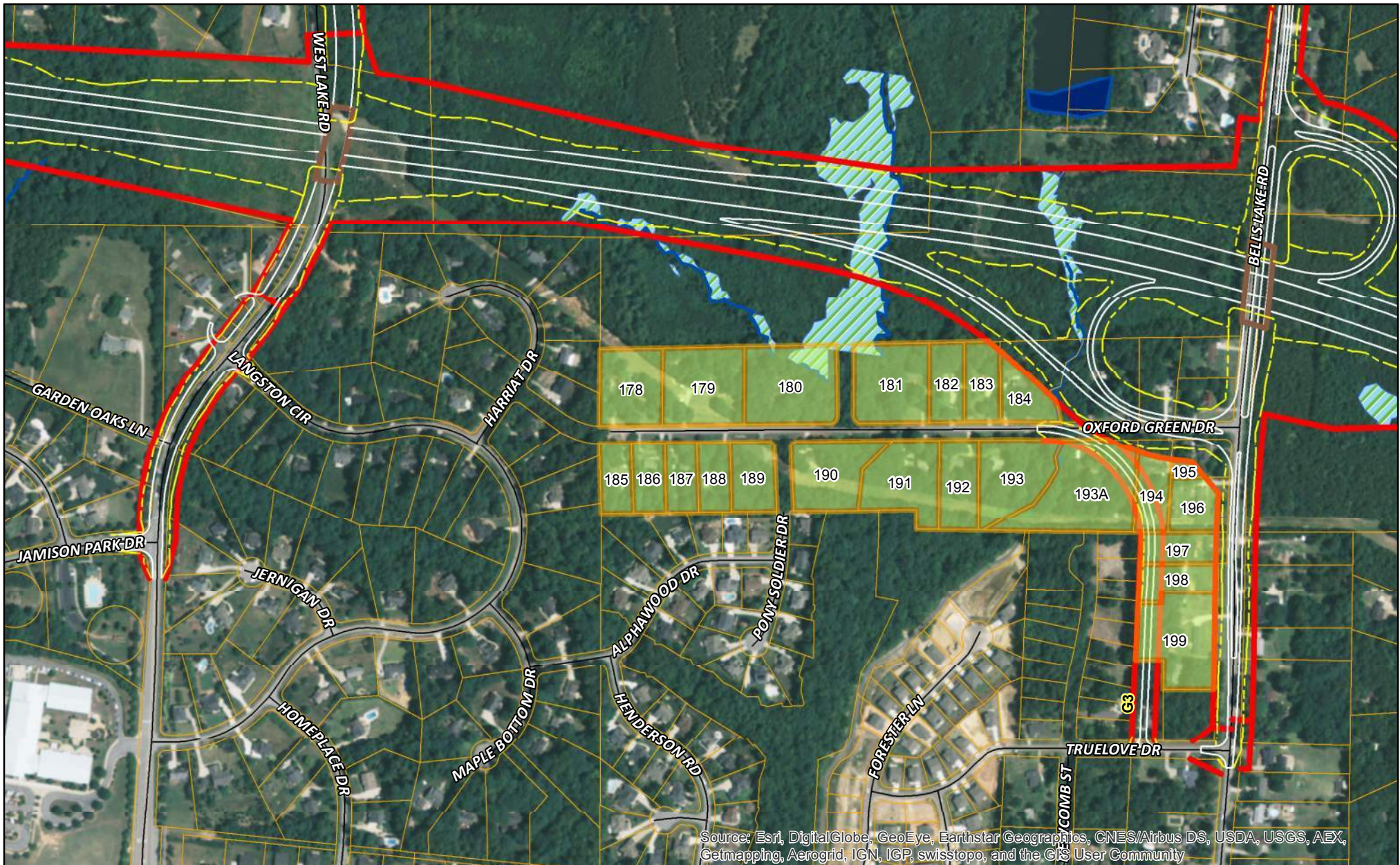
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
G1 & G5

Figure:
B-3B



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

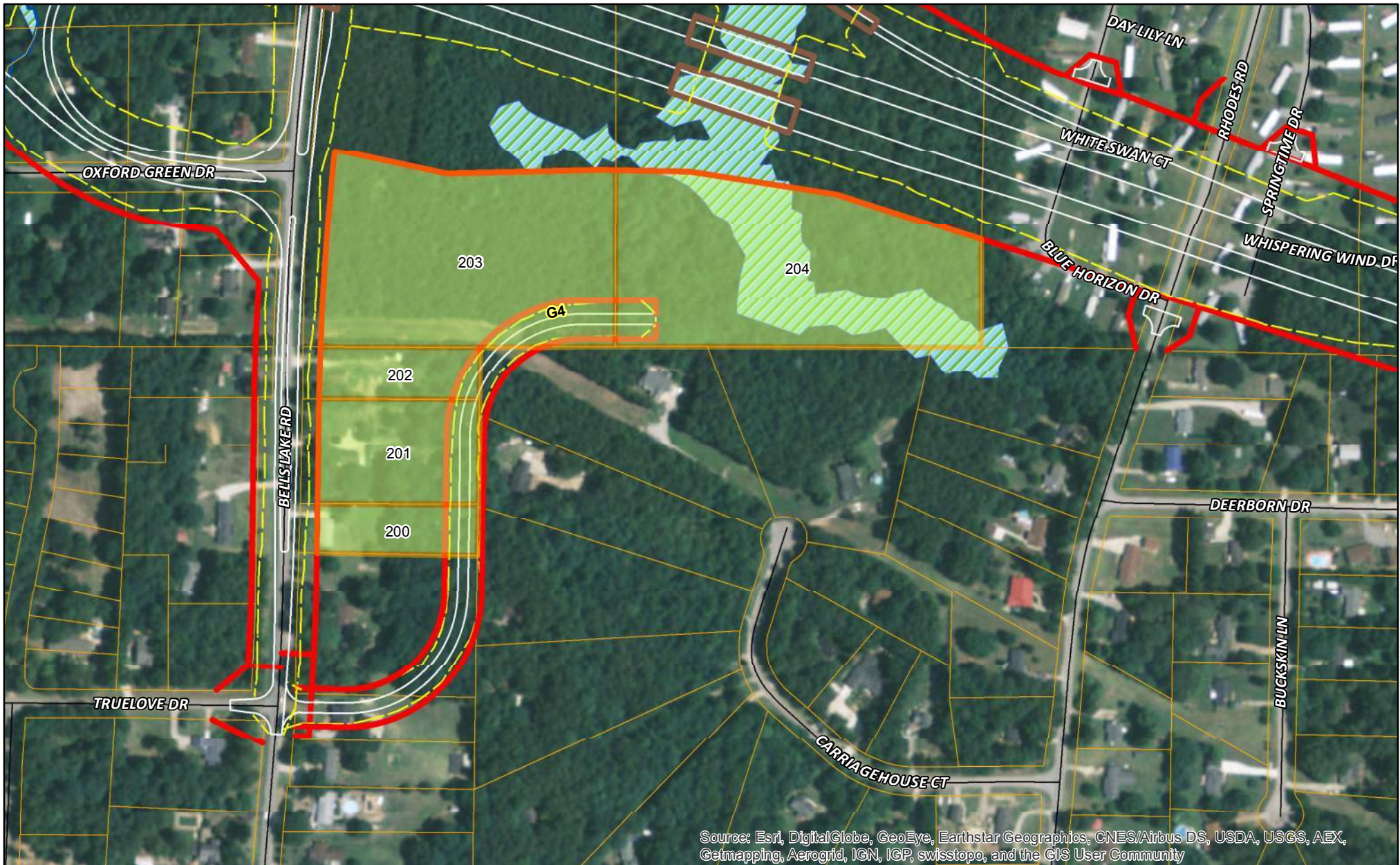
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
G3

Figure:
B-3C



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

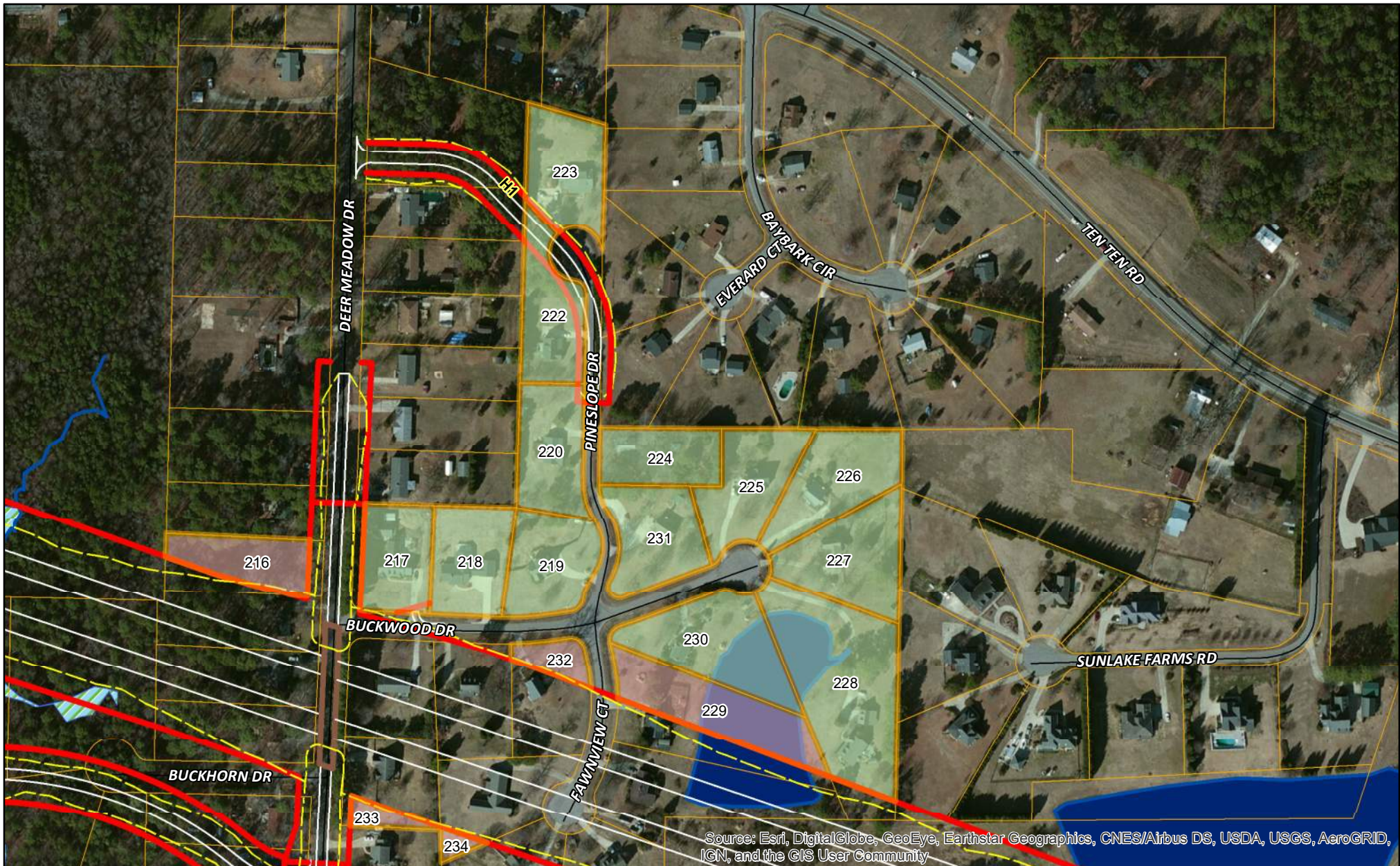
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
G4

Figure:
B-4



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

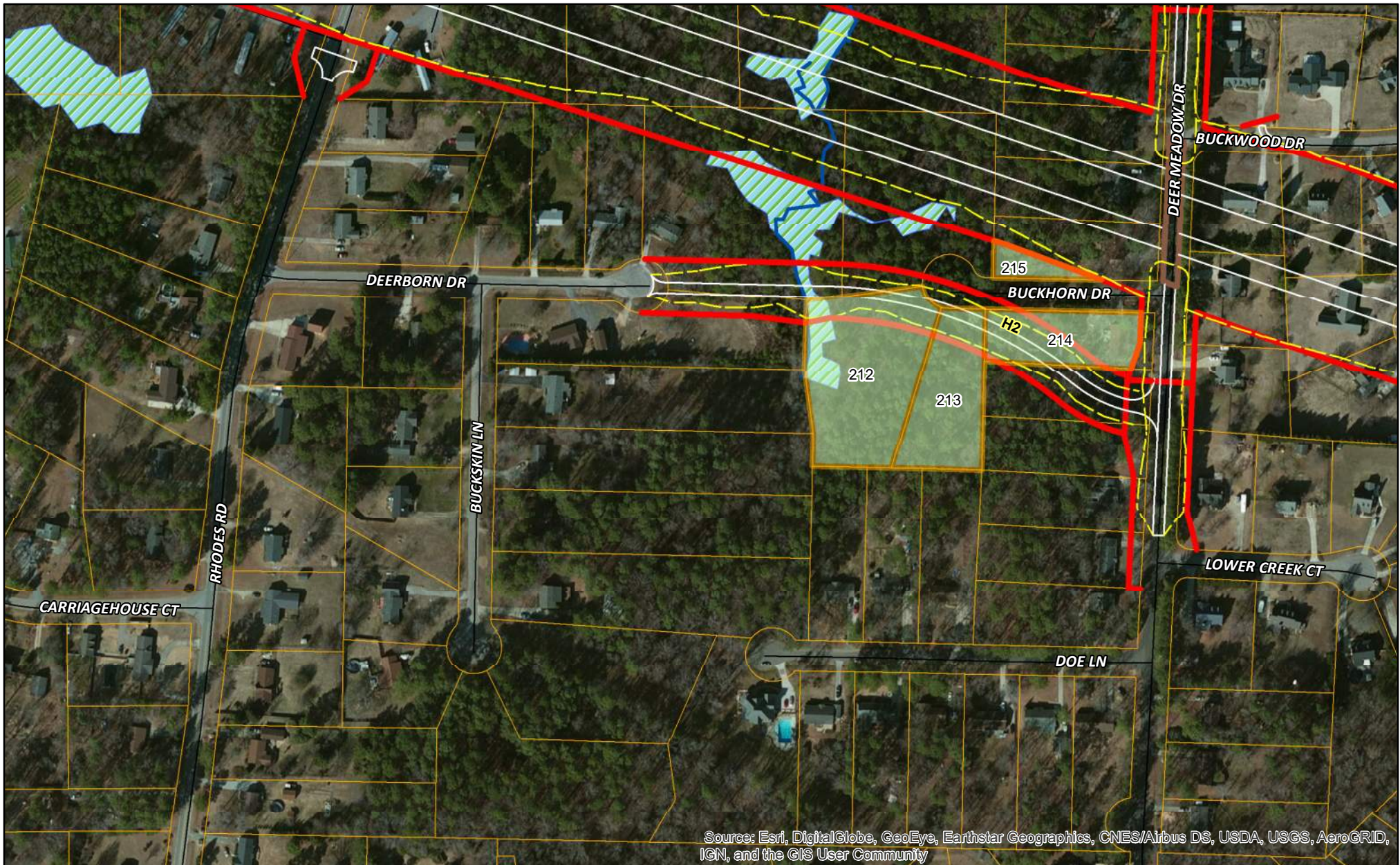
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
H1

Figure:
B-5



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

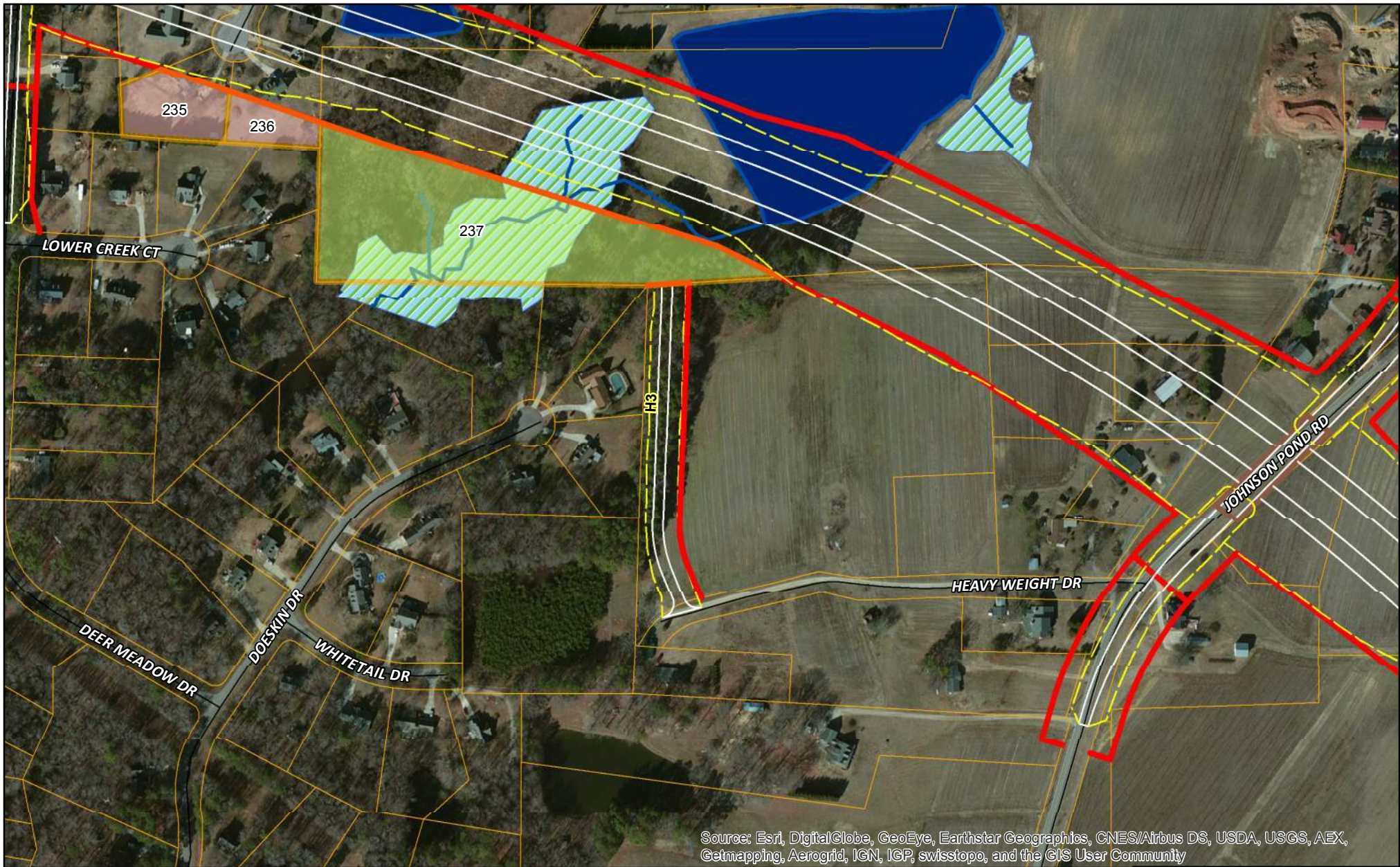
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
H2

Figure:
B-6



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

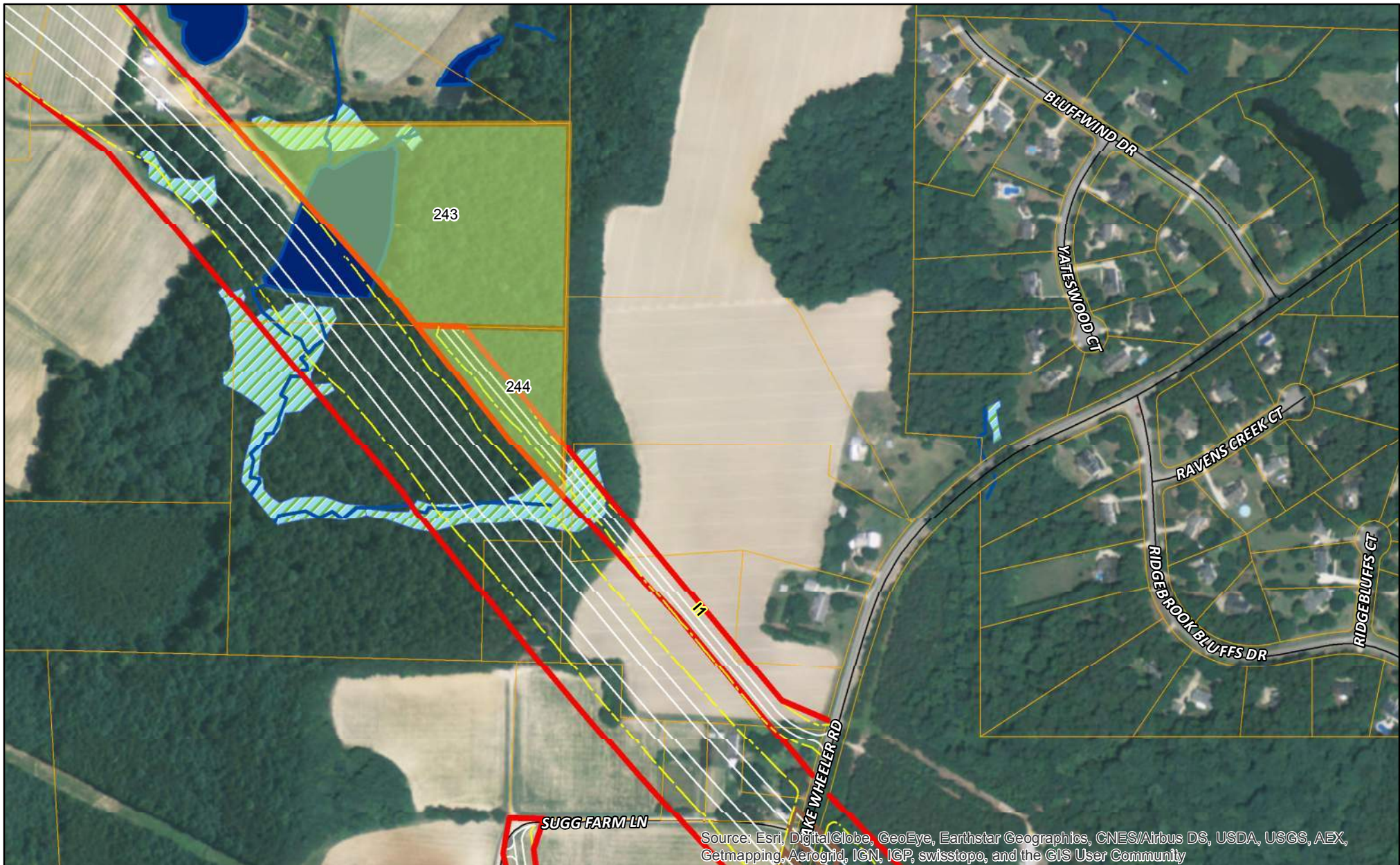
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
H3

Figure:
B-7



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

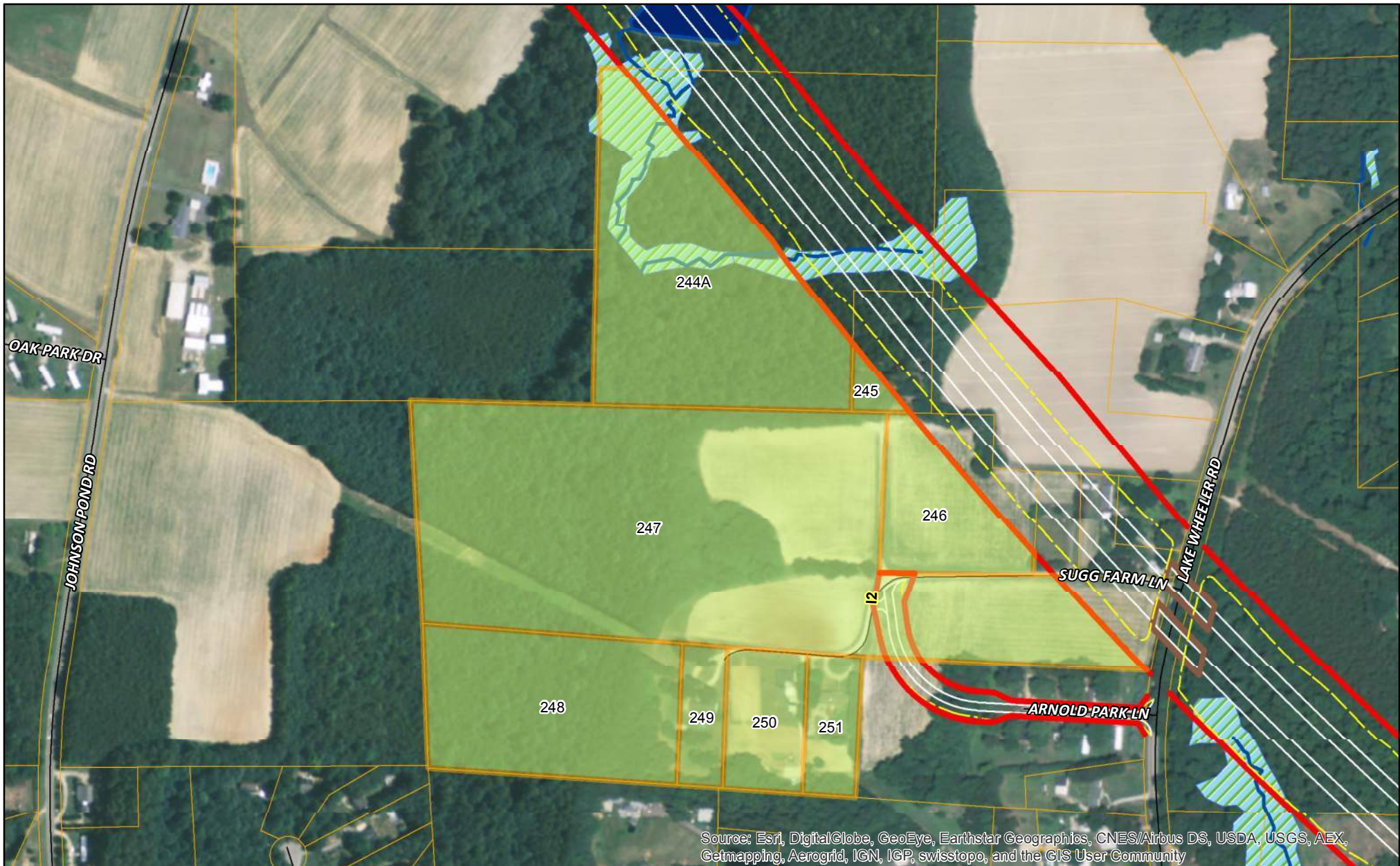
Source: Wake & Johnston Counties GIS

- | | | |
|-----------|----------------|-------------------|
| Access | Slope Stakes | Bridges |
| No Access | Roadway Design | Surveyed Wetlands |
| Roads | Right Of Way | Surveyed Ponds |
| Streams | Parcels | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
I1

Figure:
B-8



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

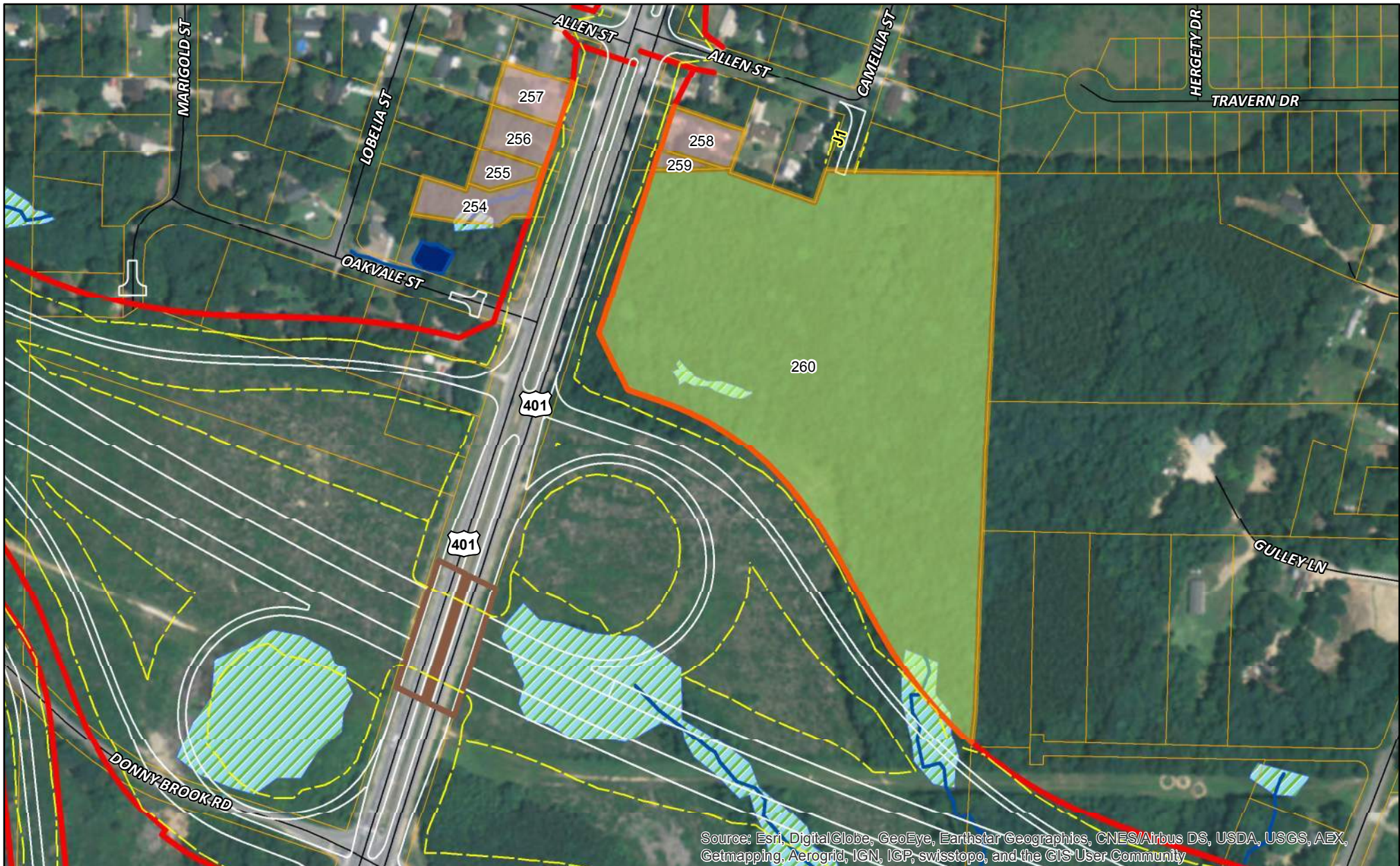
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
I2

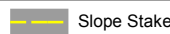






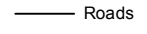


Figure:
B-9



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

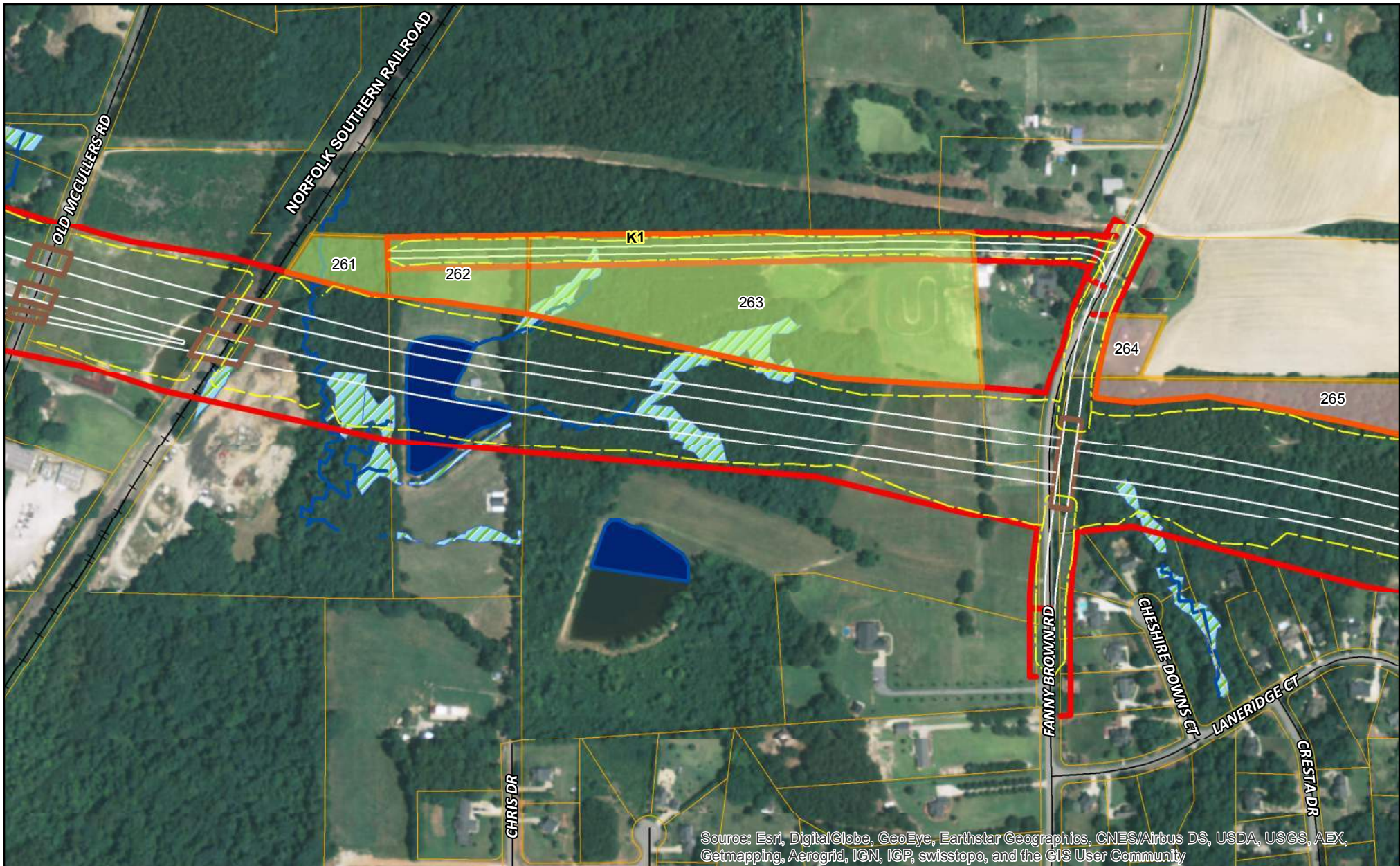
Source: Wake & Johnston Counties GIS

 Access	 Slope Stakes	 Bridges
 No Access	 Roadway Design	 Surveyed Wetlands
 Roads	 Right Of Way	 Surveyed Ponds
 Streams	 Parcels	 Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
J1

Figure:
B-10



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
K1

Figure:
B-11



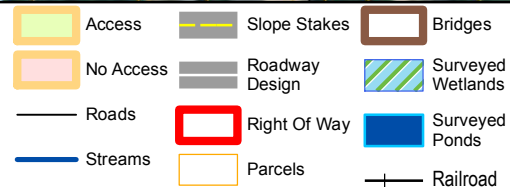
COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

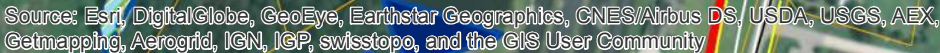
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
L1

Figure:
B-12

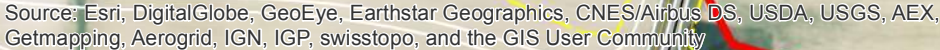


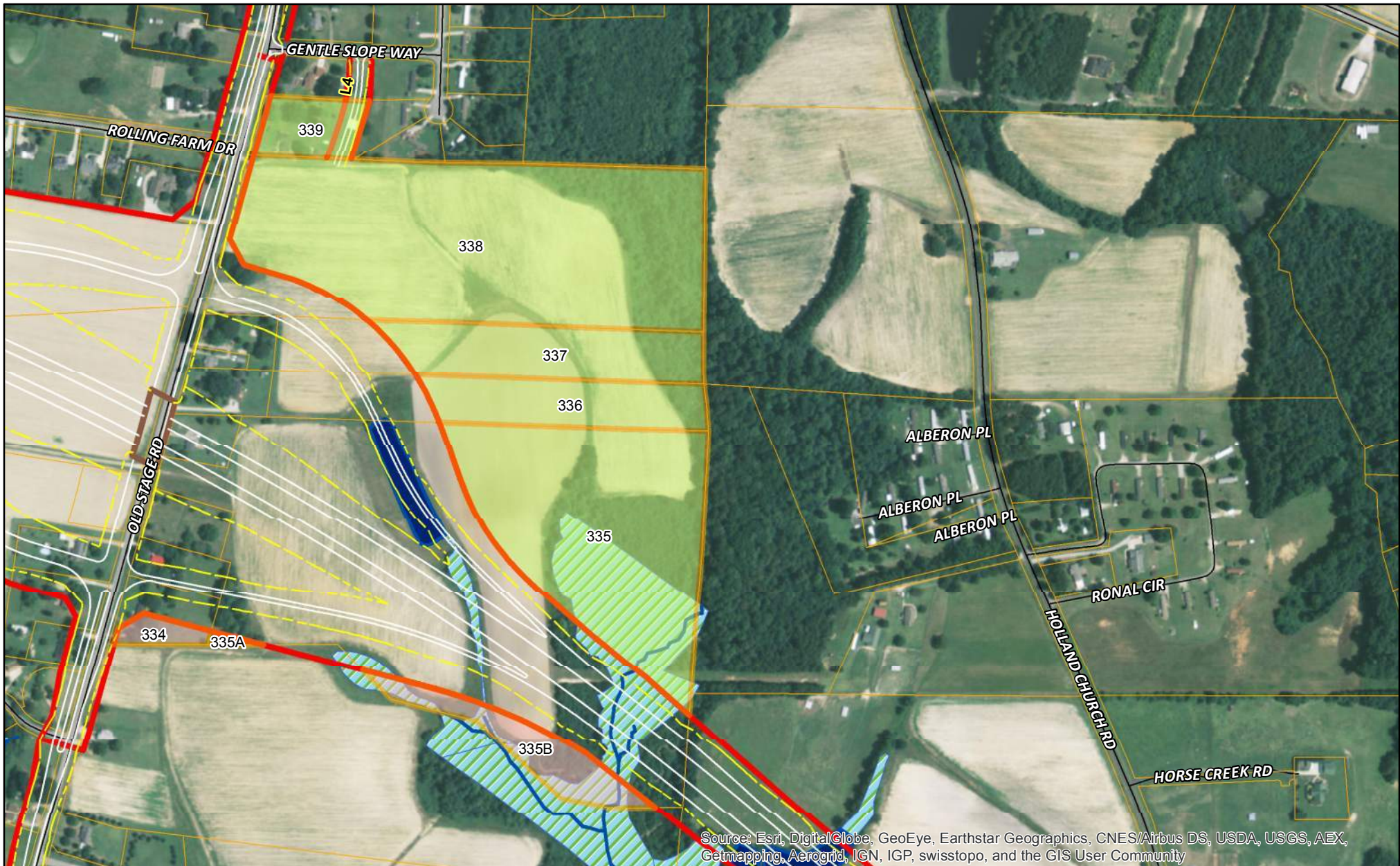
NOT TO SCALE

	Access		Slope Stakes		Bridges
	No Access		Roadway Design		Surveyed Wetlands
	Roads		Right Of Way		Surveyed Ponds
	Streams		Parcels		Railroad

**Service Road:
L2 & L2A**

**Figure:
B-13**

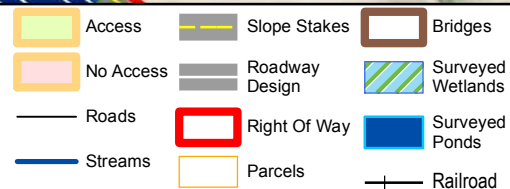




PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

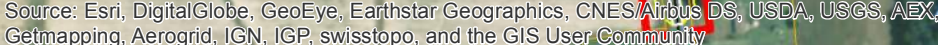
Source: Wake & Johnston Counties GIS






SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
L4

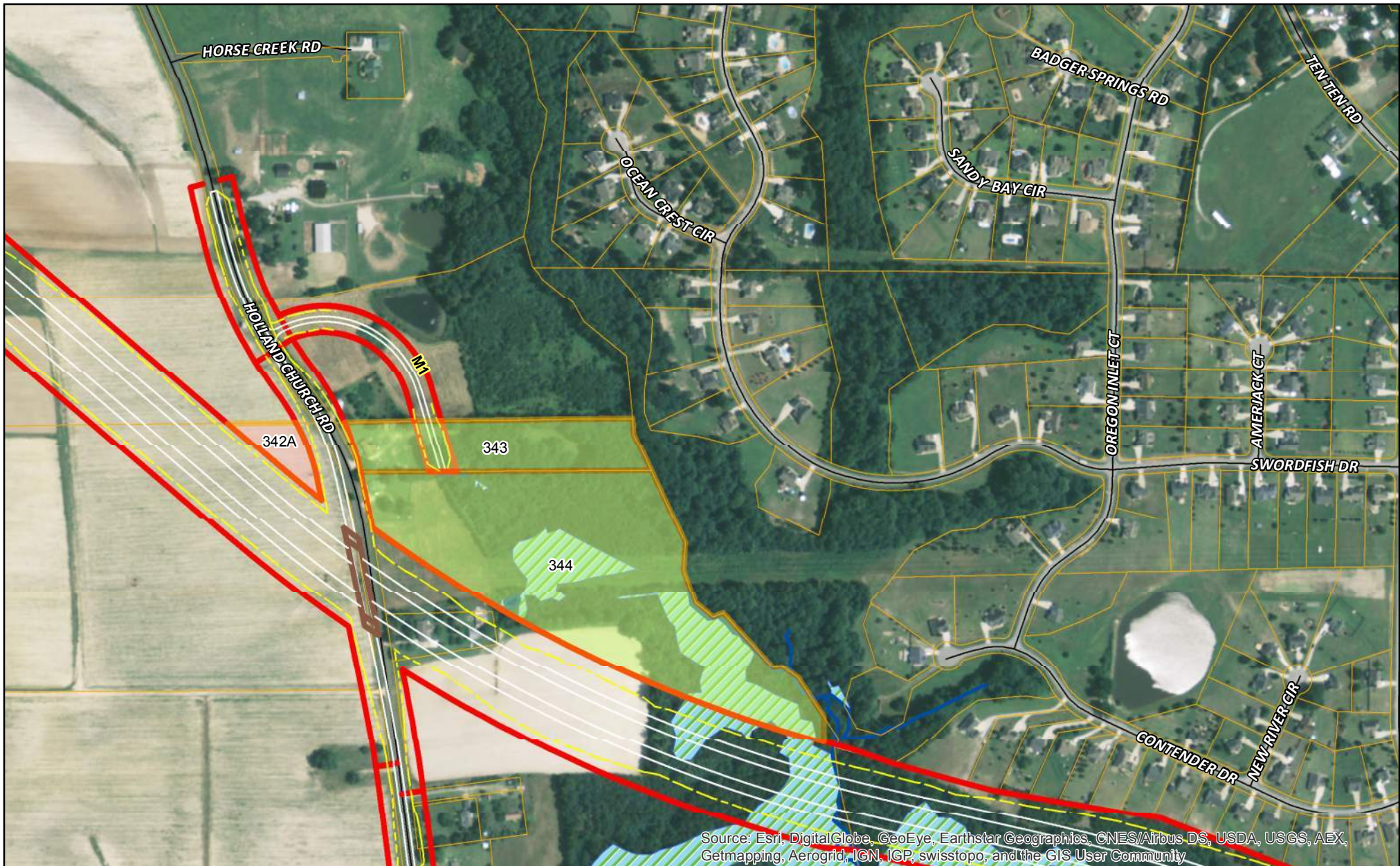
Figure:
B-15



NOT TO SCALE

	Access		Slope Stakes		Bridges
	No Access		Roadway Design		Surveyed Wetlands
	Roads		Right Of Way		Surveyed Ponds
	Streams		Parcels		Railroad

Service Road: M2



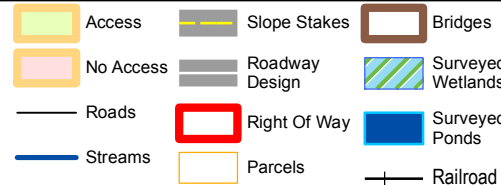
COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

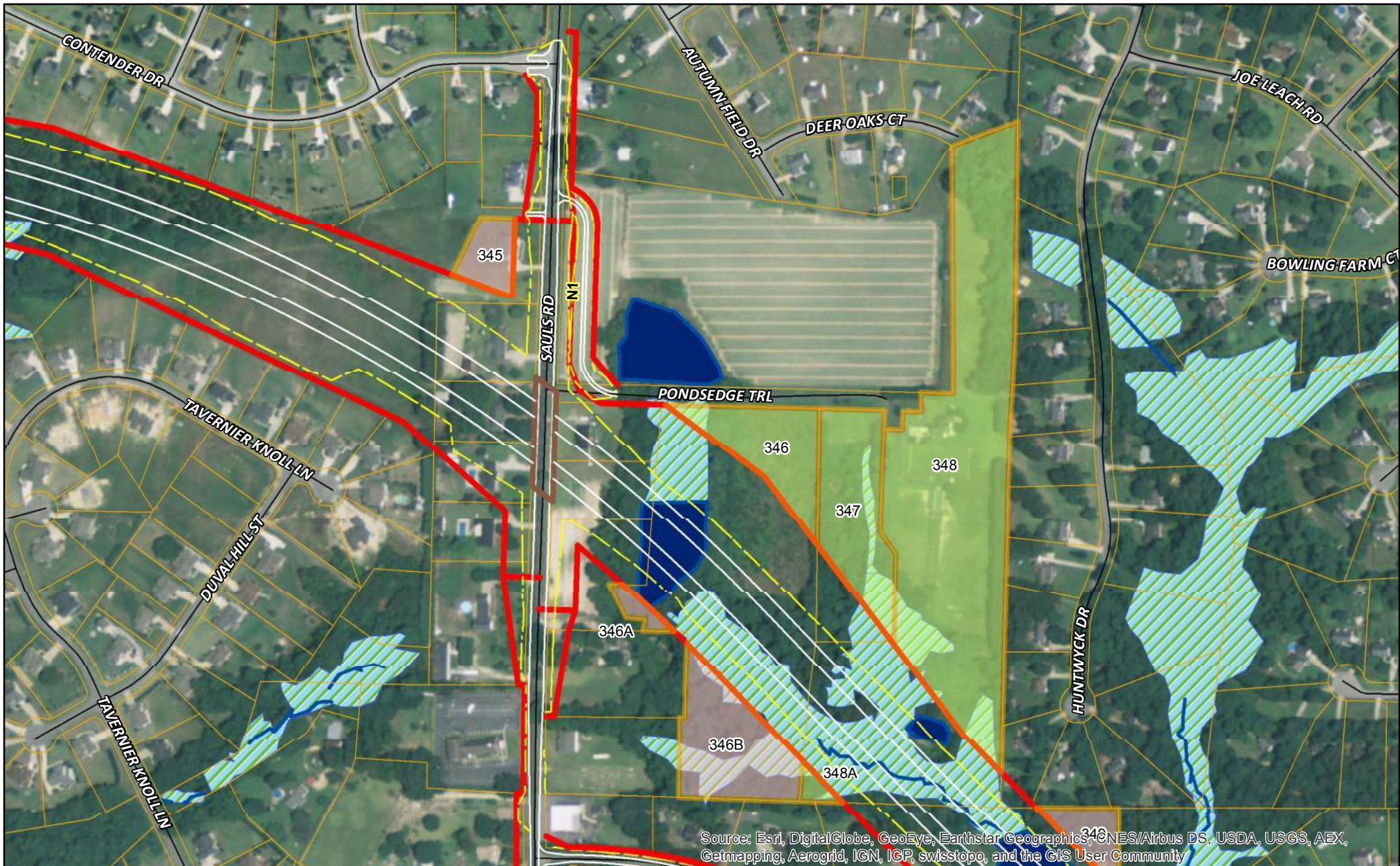
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
M1

Figure:
B-17



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

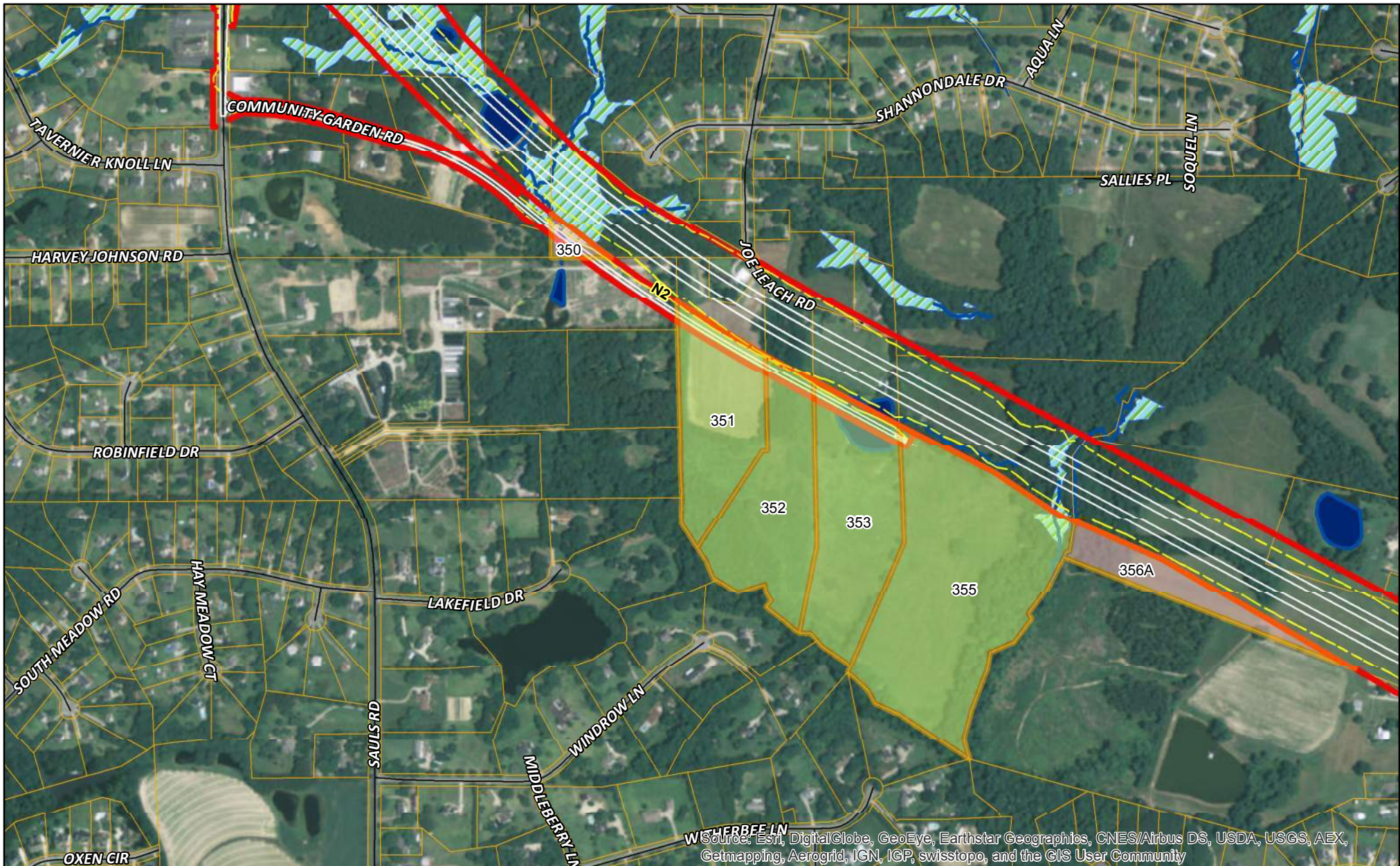
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
N1

Figure:
B-18



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

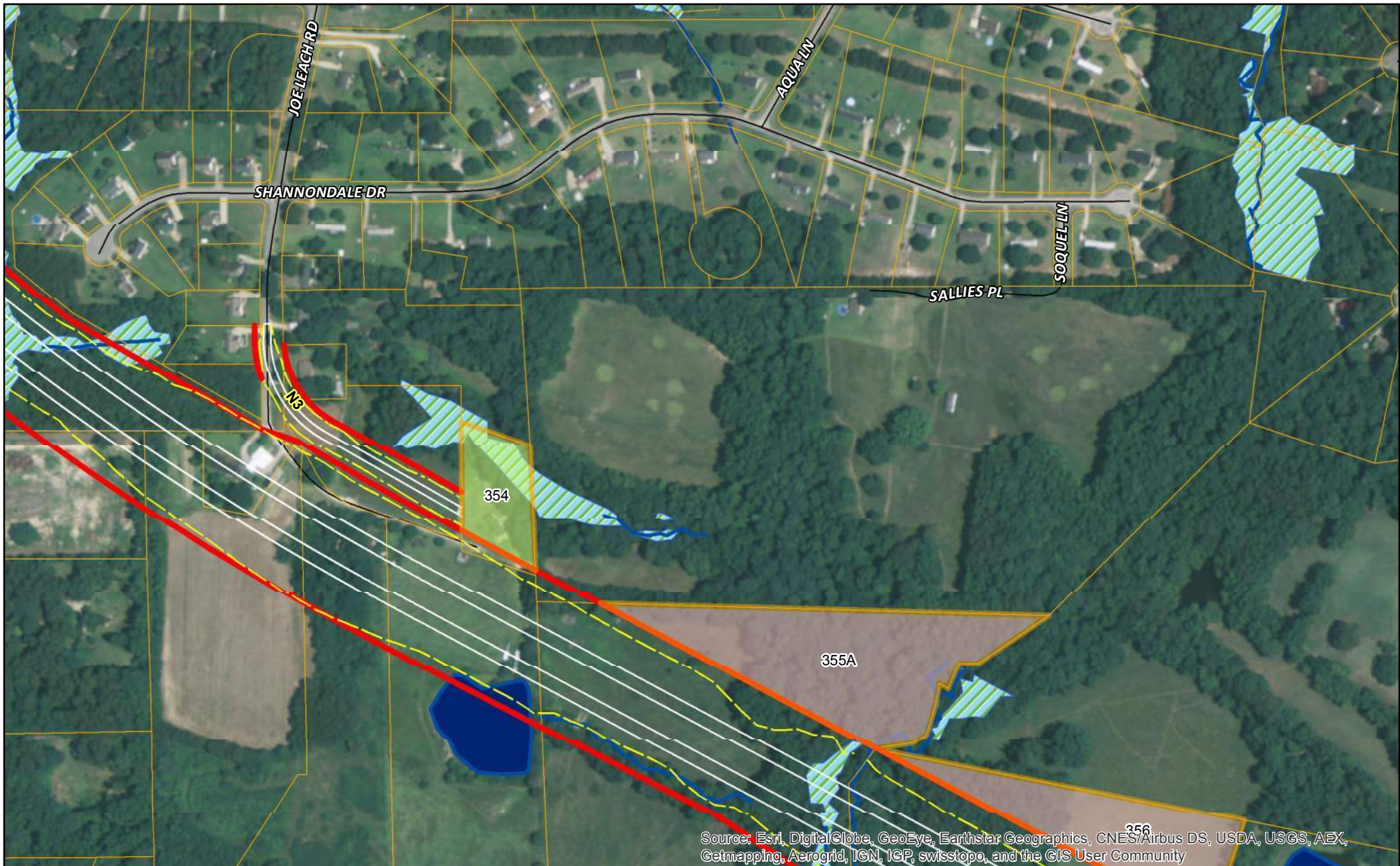
Source: Wake & Johnston Counties GIS

- | | | |
|-----------|----------------|-------------------|
| Access | Slope Stakes | Bridges |
| No Access | Roadway Design | Surveyed Wetlands |
| Roads | Right Of Way | Surveyed Ponds |
| Streams | Parcels | Railroad |

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
N2

Figure:
B-19



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

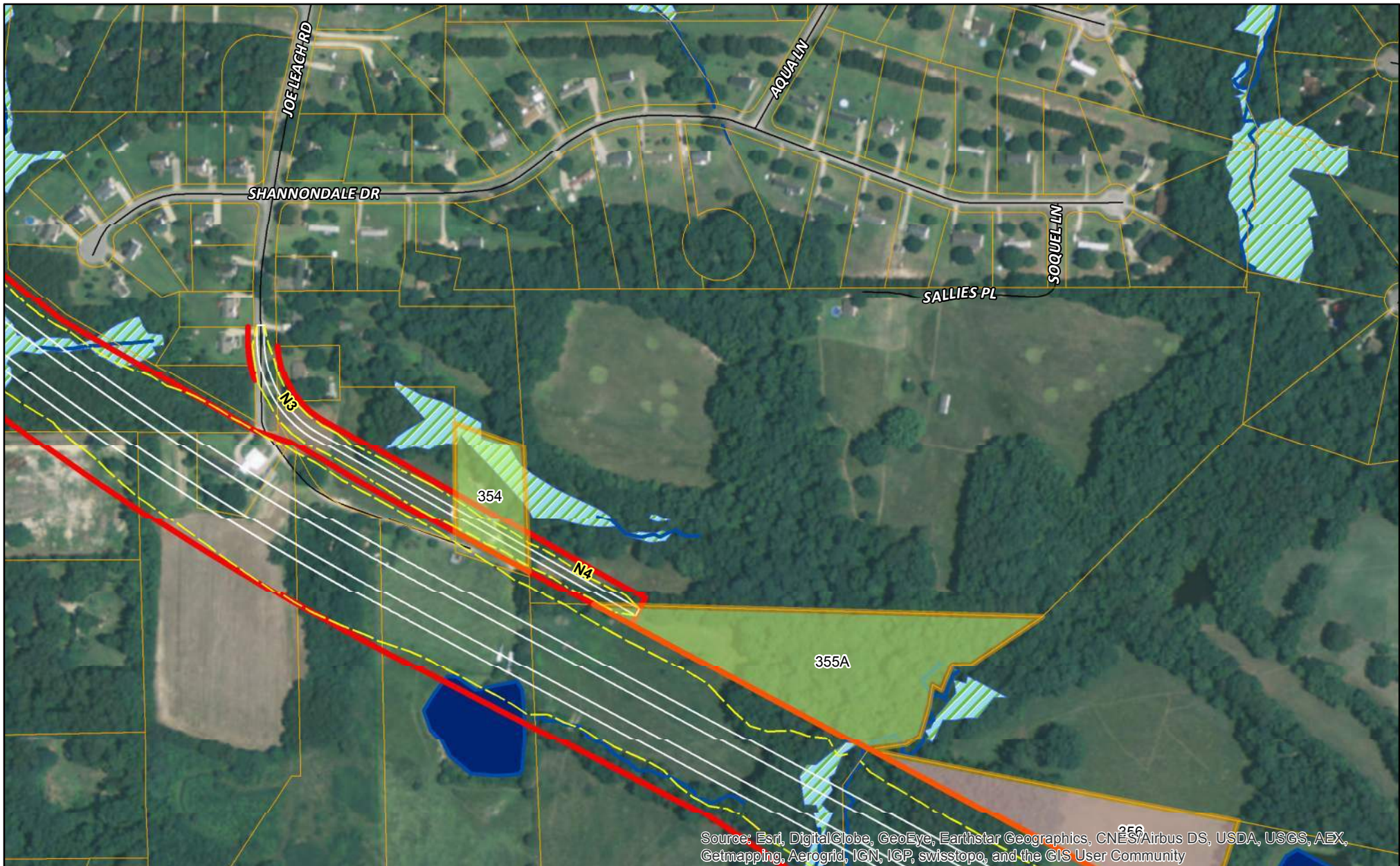
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
N3

Figure:
B-20A



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

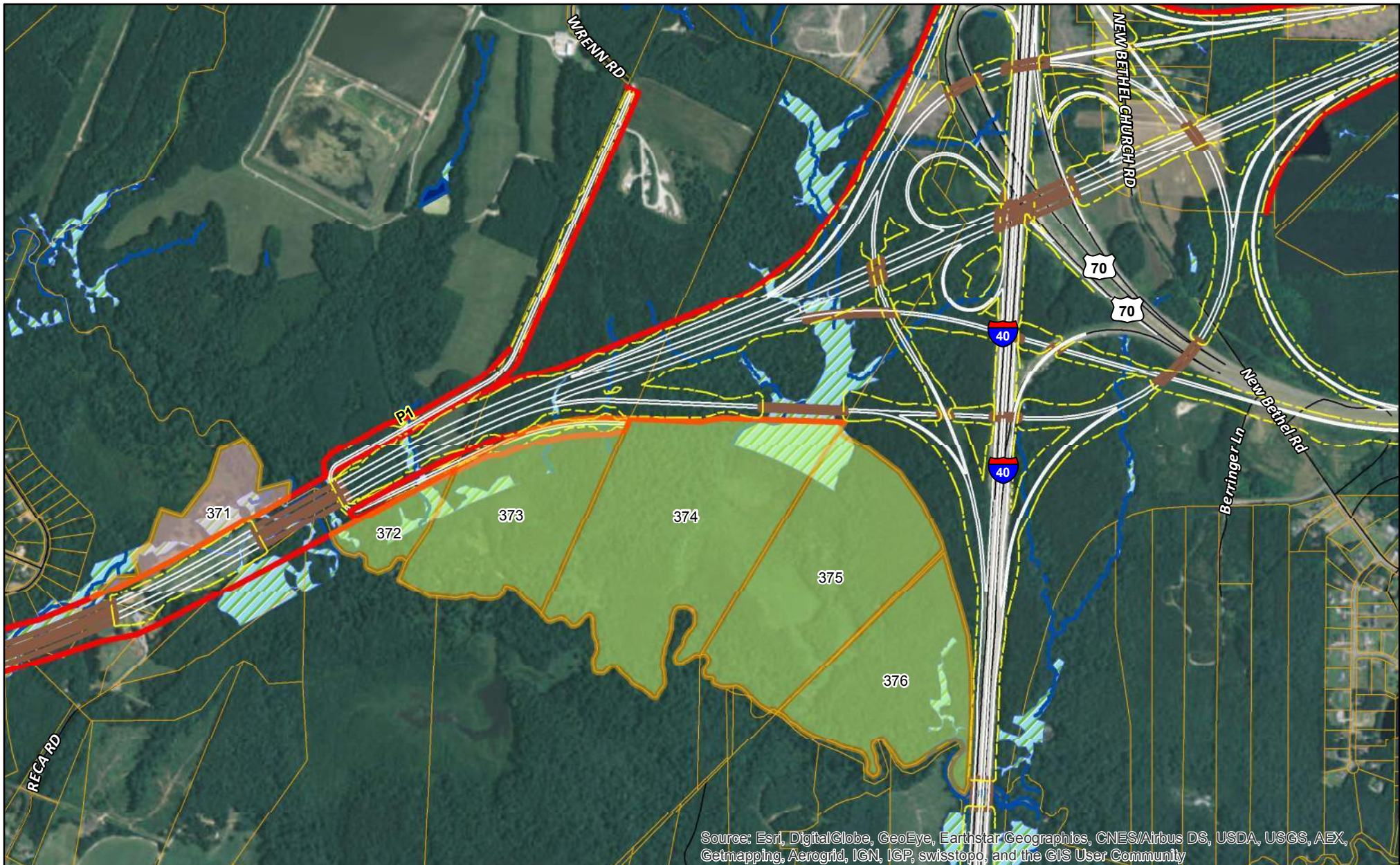
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
N3 & N4

Figure:
B-20B



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

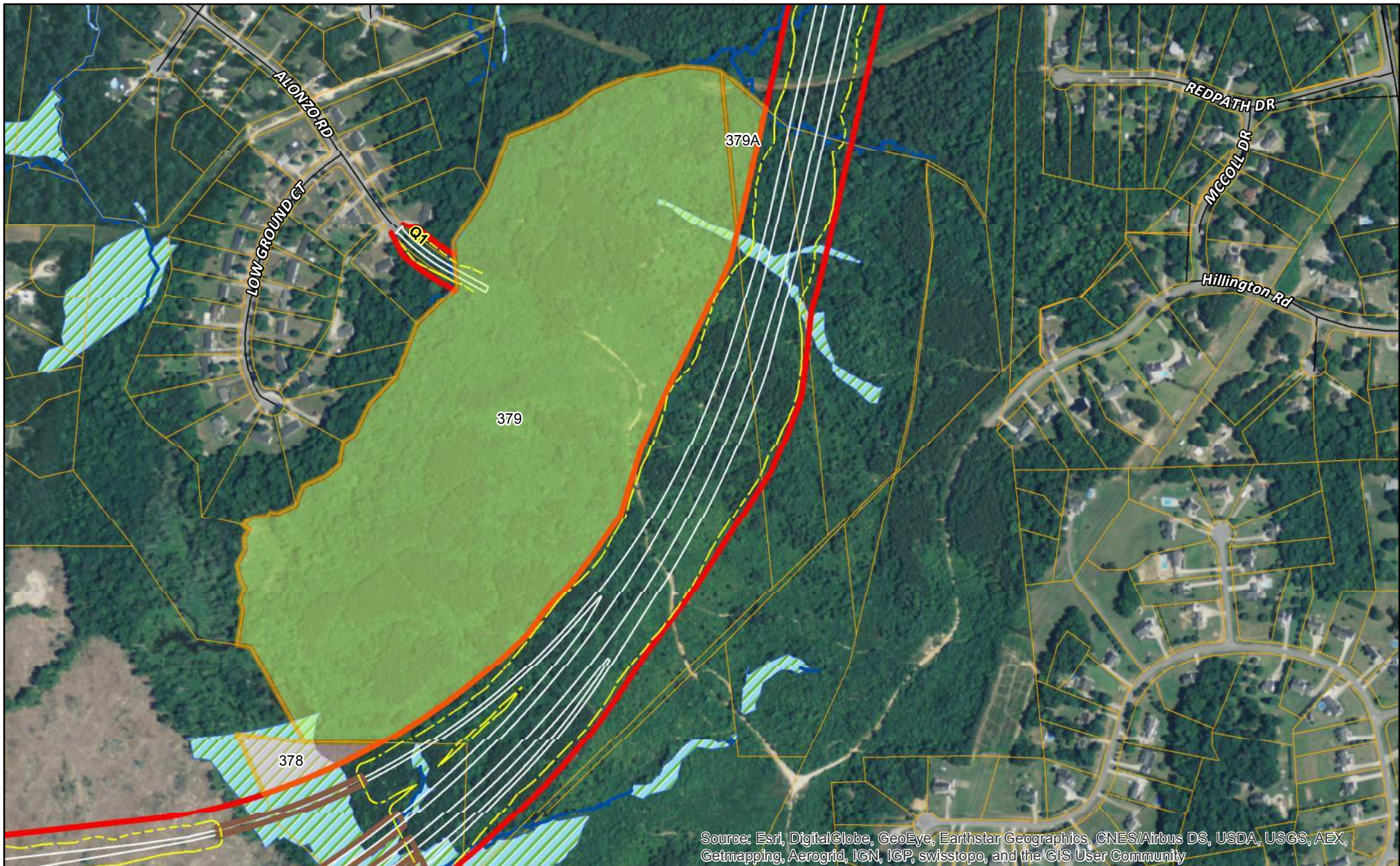
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
P1

Figure:
B-21



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
Q1

Figure:
B-22



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
Q2

Figure:
B-23A



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

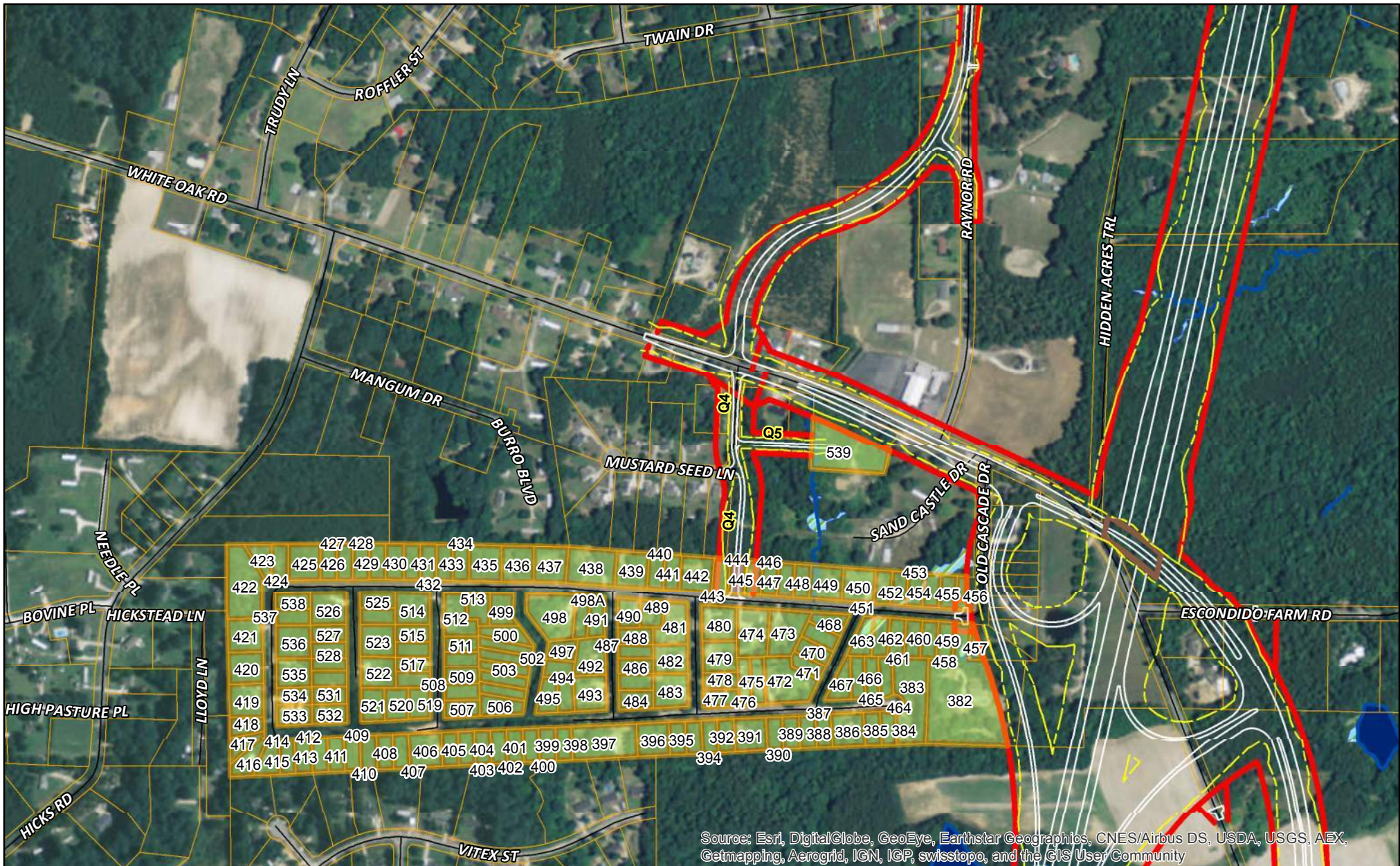
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
Q3

Figure:
B-23B



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

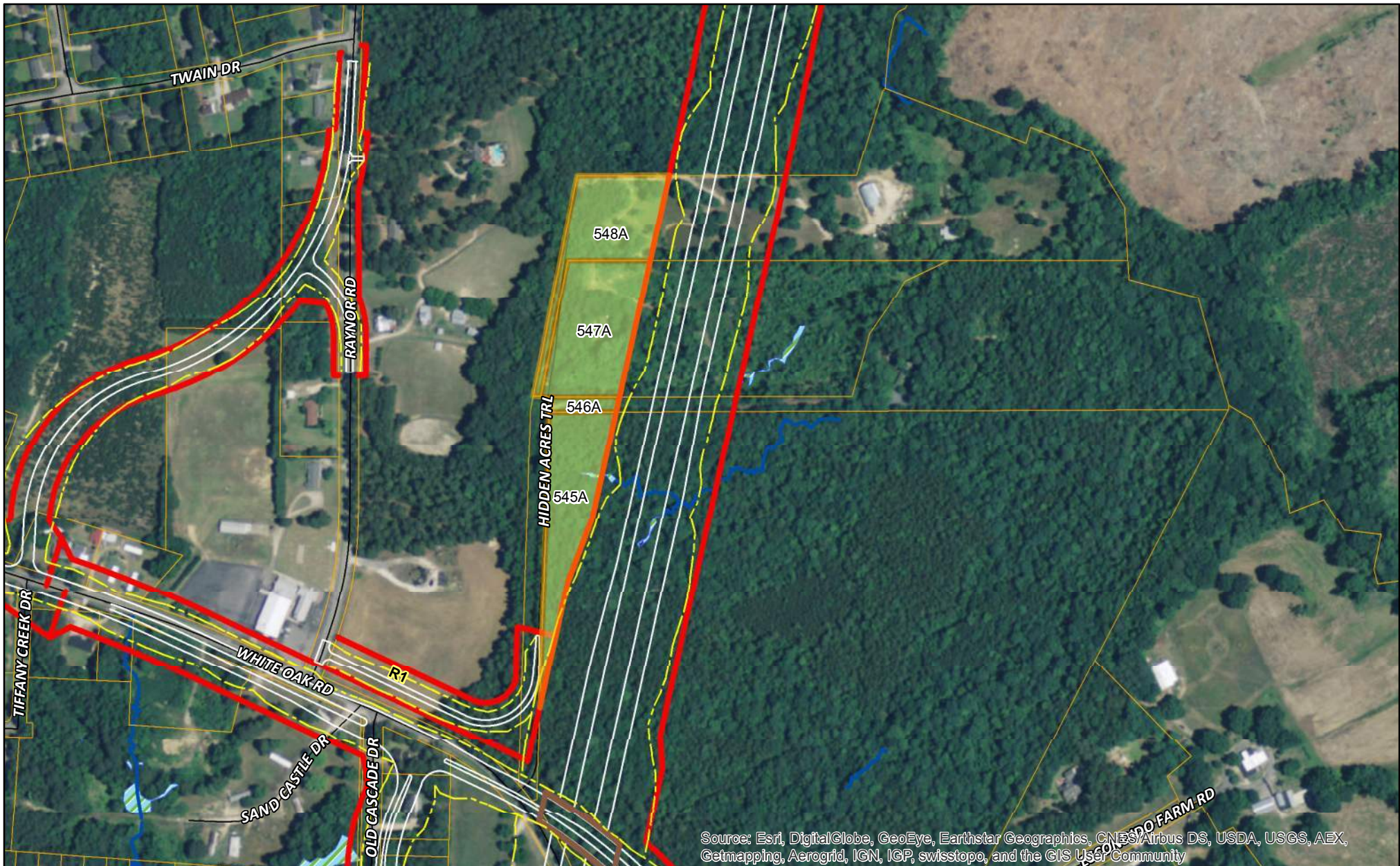
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
Q4 & Q5**

**Figure:
B-24**



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

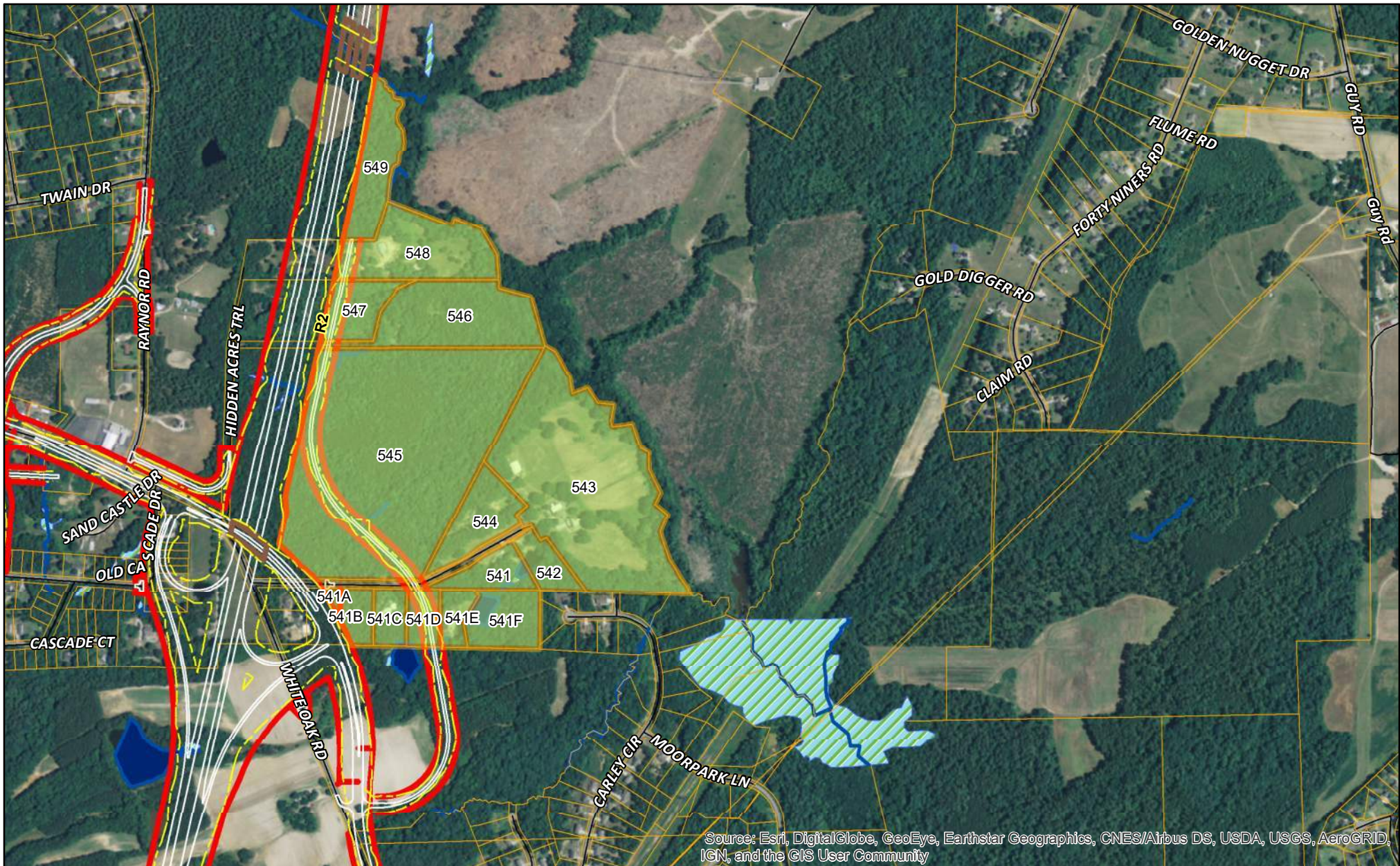
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
R1

Figure:
B-25



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

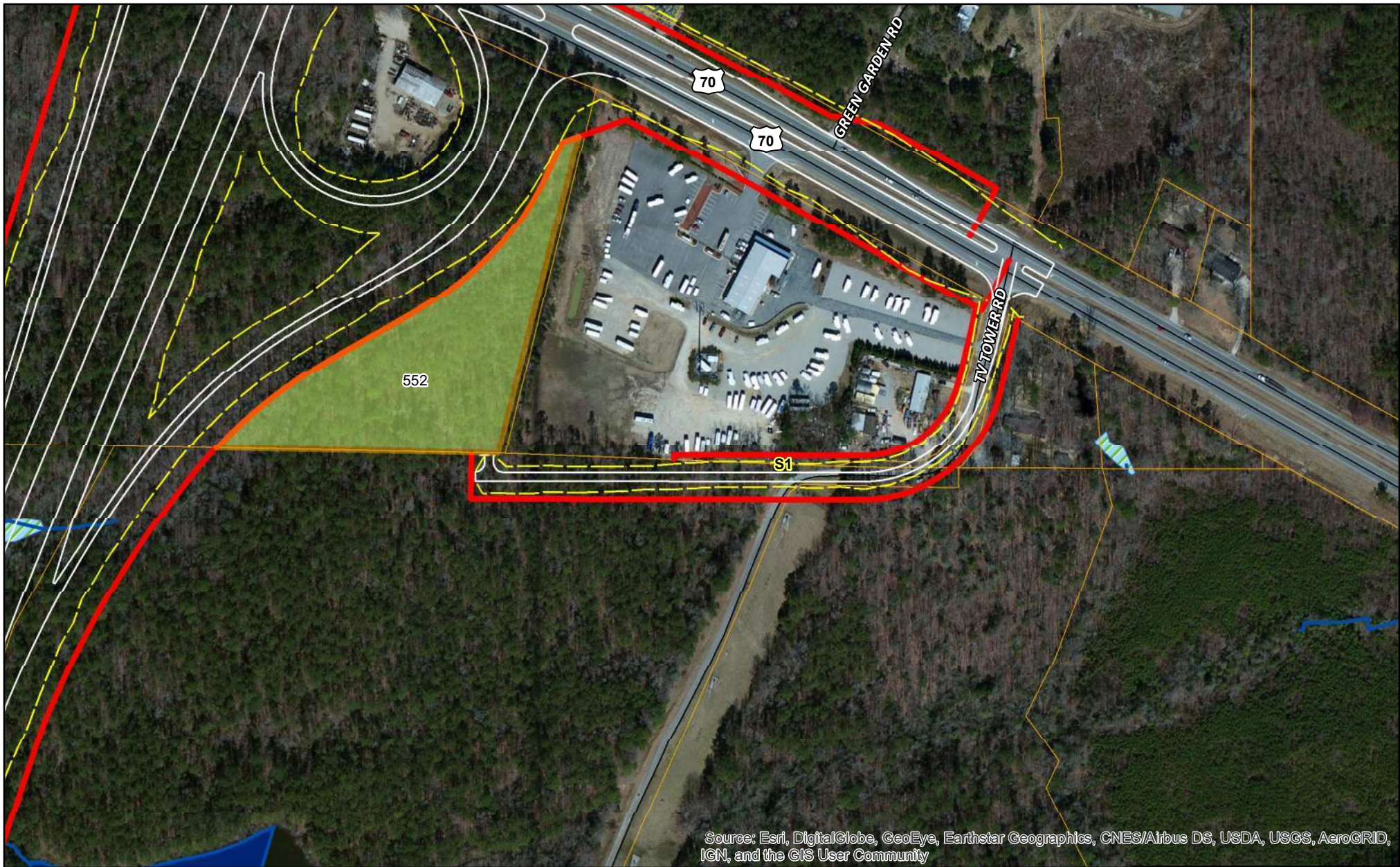
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
R2

Figure:
B-26



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
S1

Figure:
B-27



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

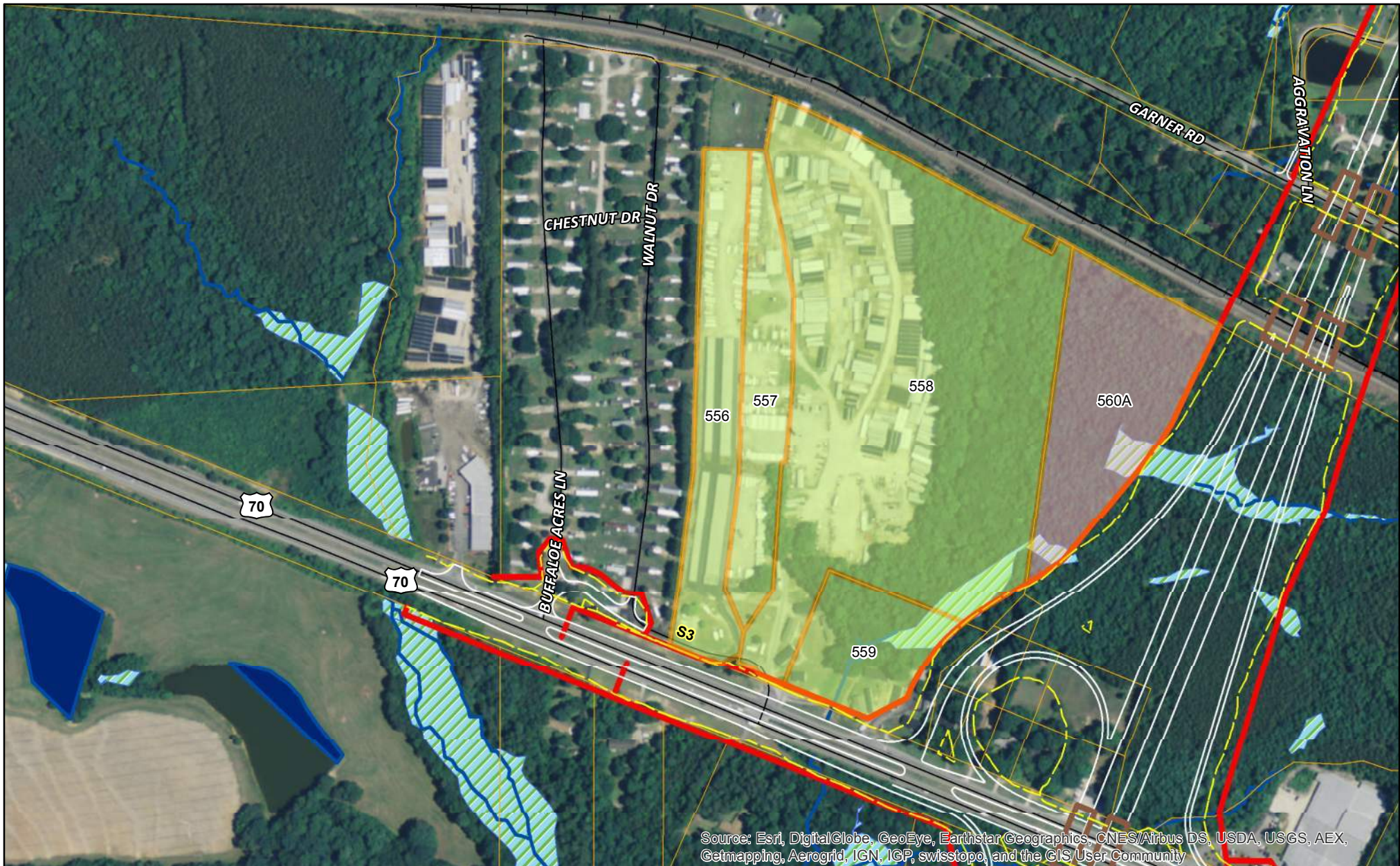
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
S2**

**Figure:
B-28**



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

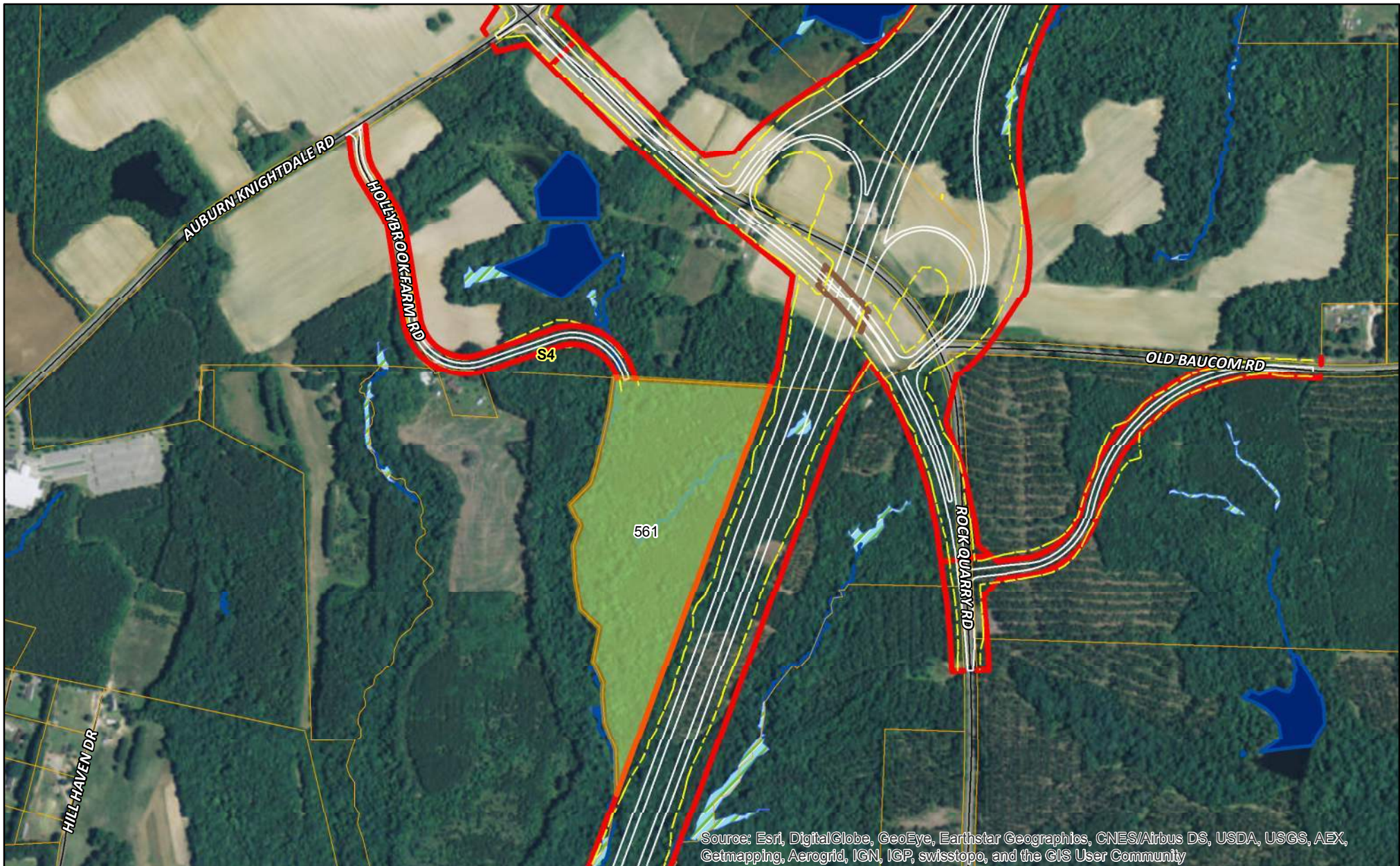
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
S3

Figure:
B-29



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
S4

Figure:
B-30



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road: T1	Figure: B-31
----------------------------	------------------------



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

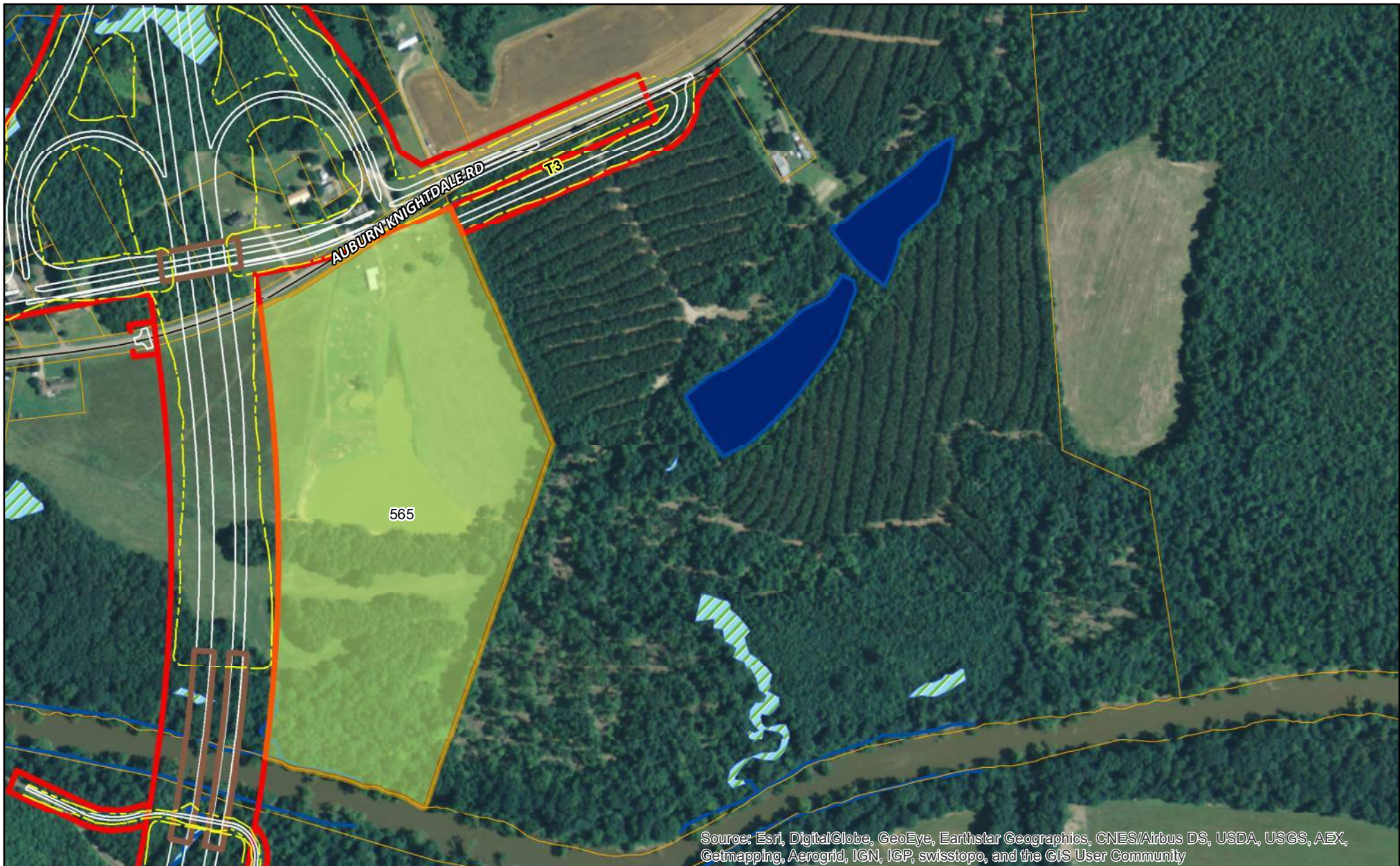
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
T2

Figure:
B-32



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

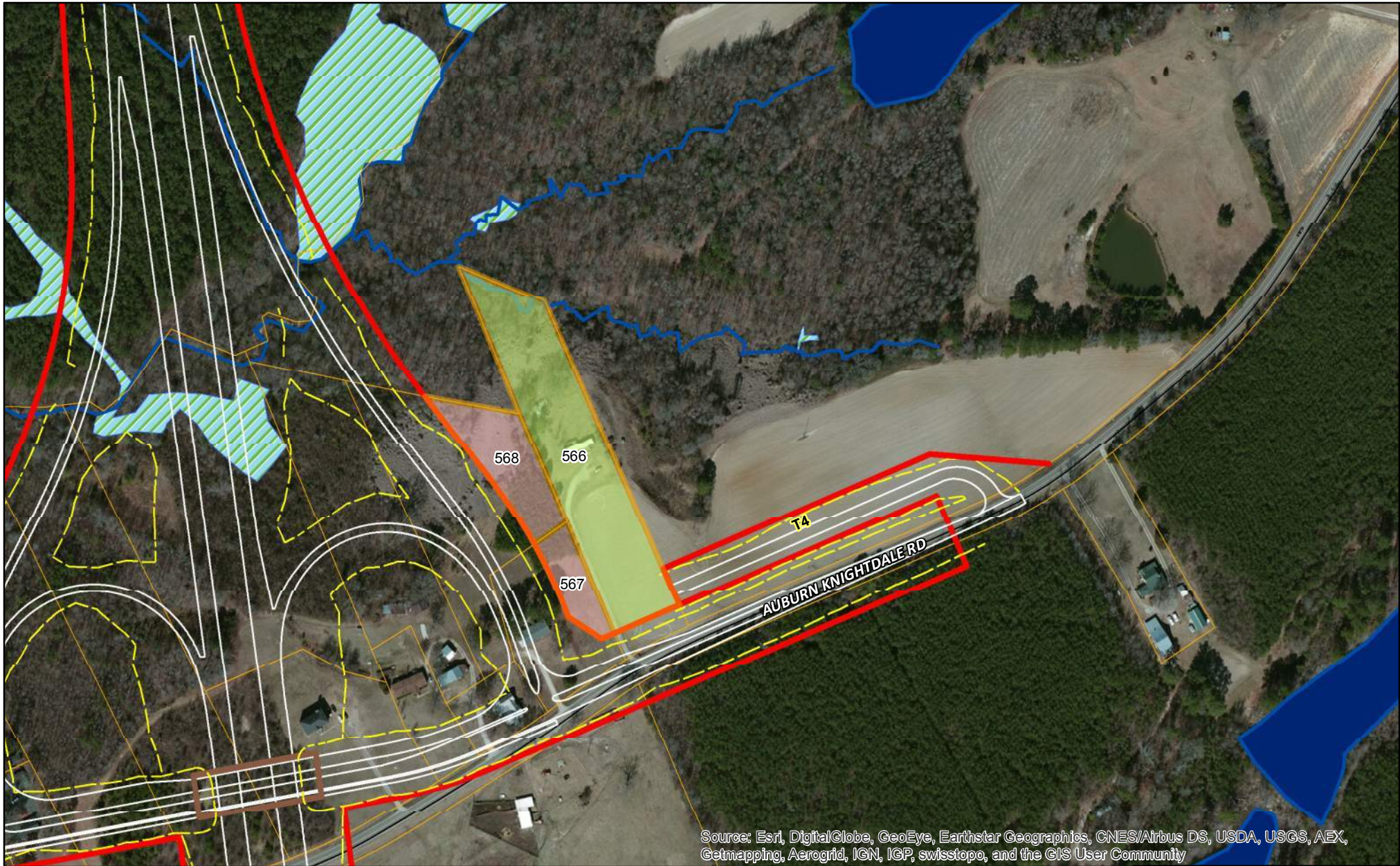
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
T3

Figure:
B-33



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

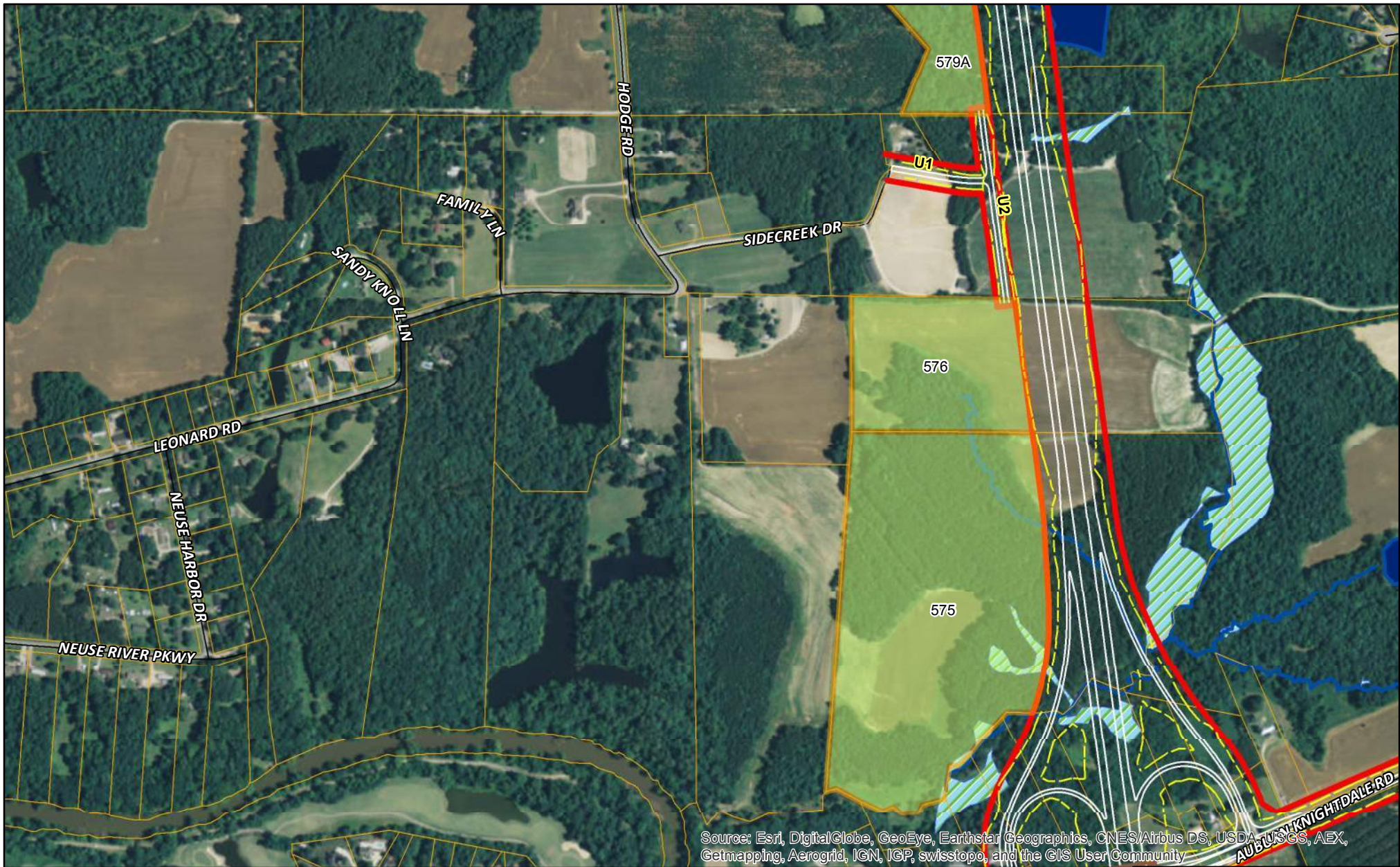
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
T4

Figure:
B-34



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



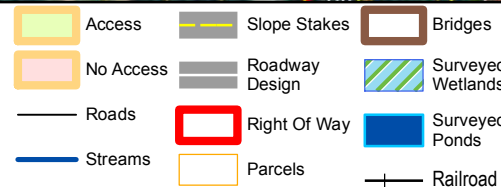
COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

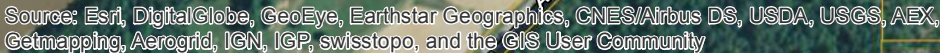
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
U1 & U2**

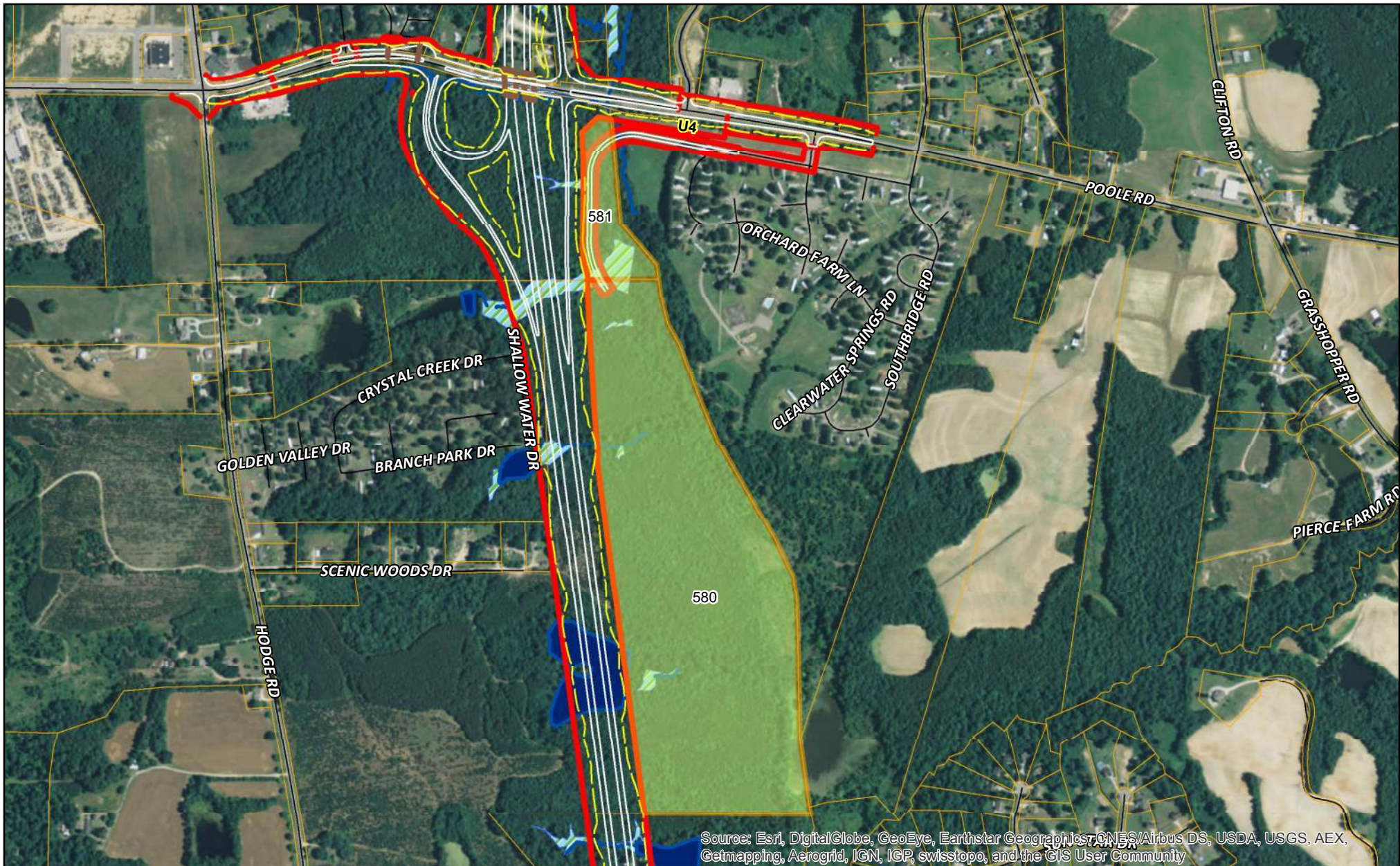
**Figure:
B-35**



NOT TO SCALE

	Access		Slope Stakes		Bridges
	No Access		Roadway Design		Surveyed Wetlands
	Roads		Right Of Way		Surveyed Ponds
	Streams		Parcels		Railroad

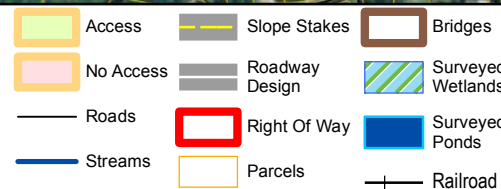
Service Road: U3 **Figure:** B-36



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

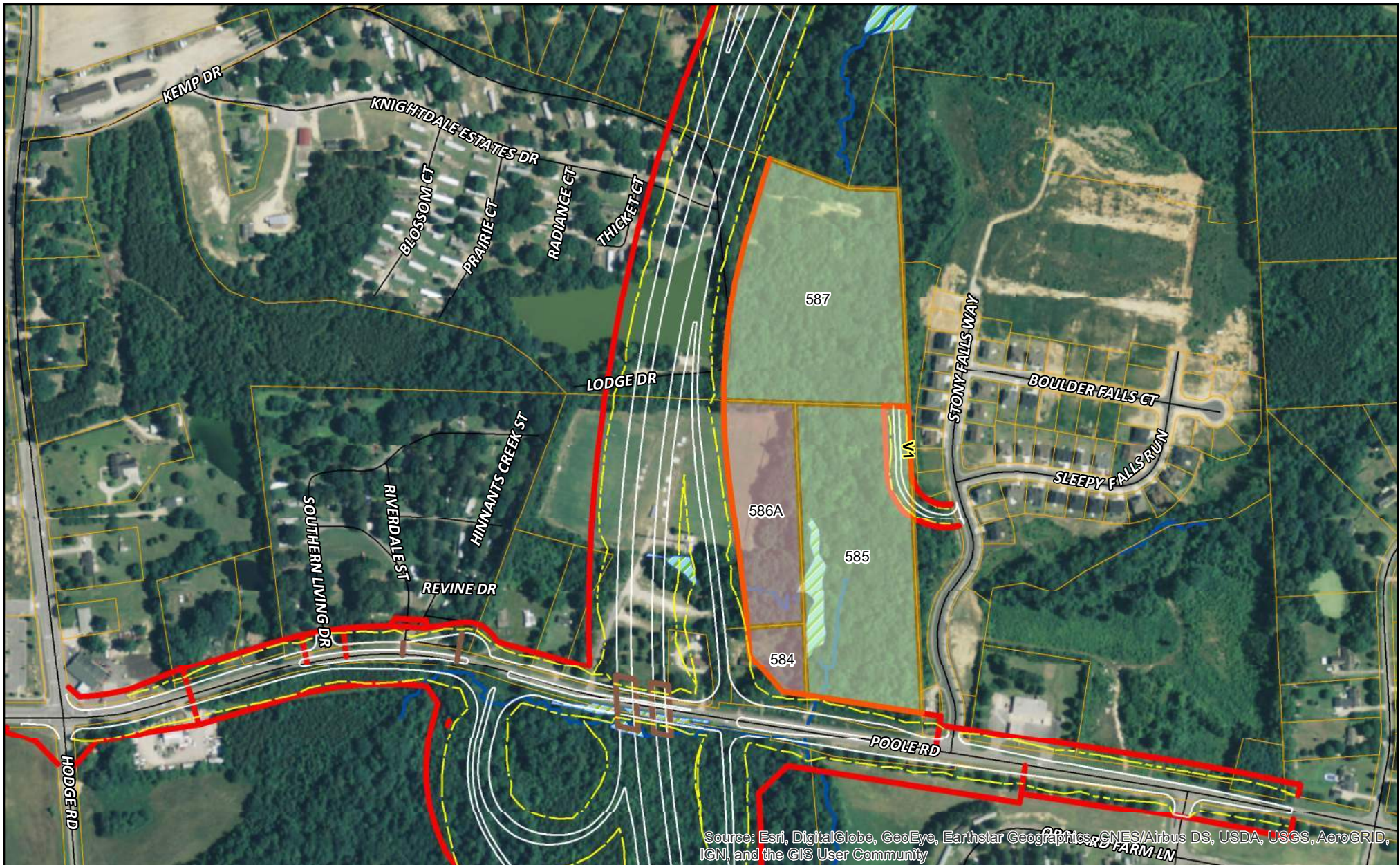
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
U4

Figure:
B-37



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

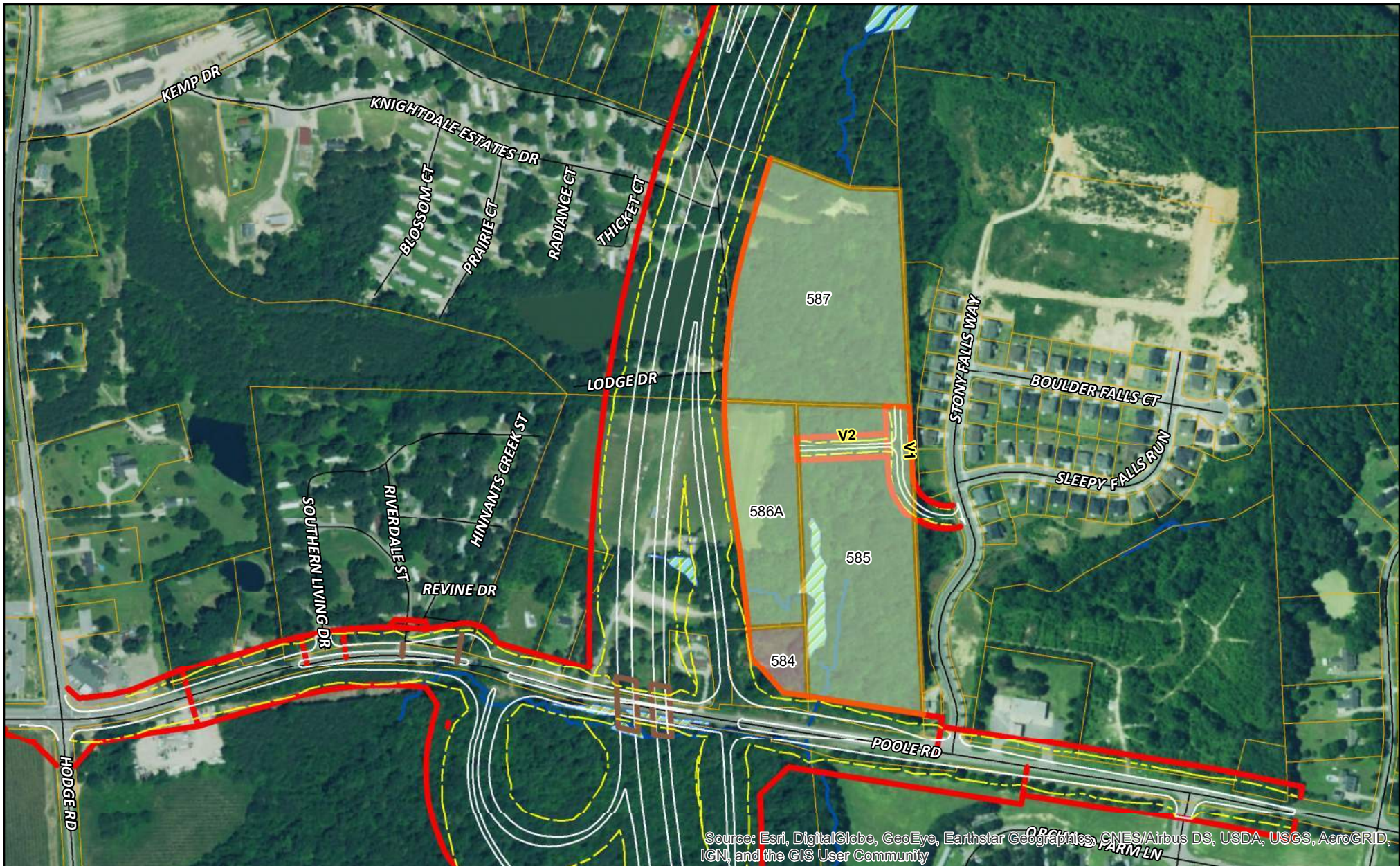
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
V1

Figure:
B-38A



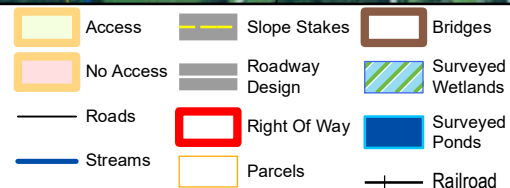
COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

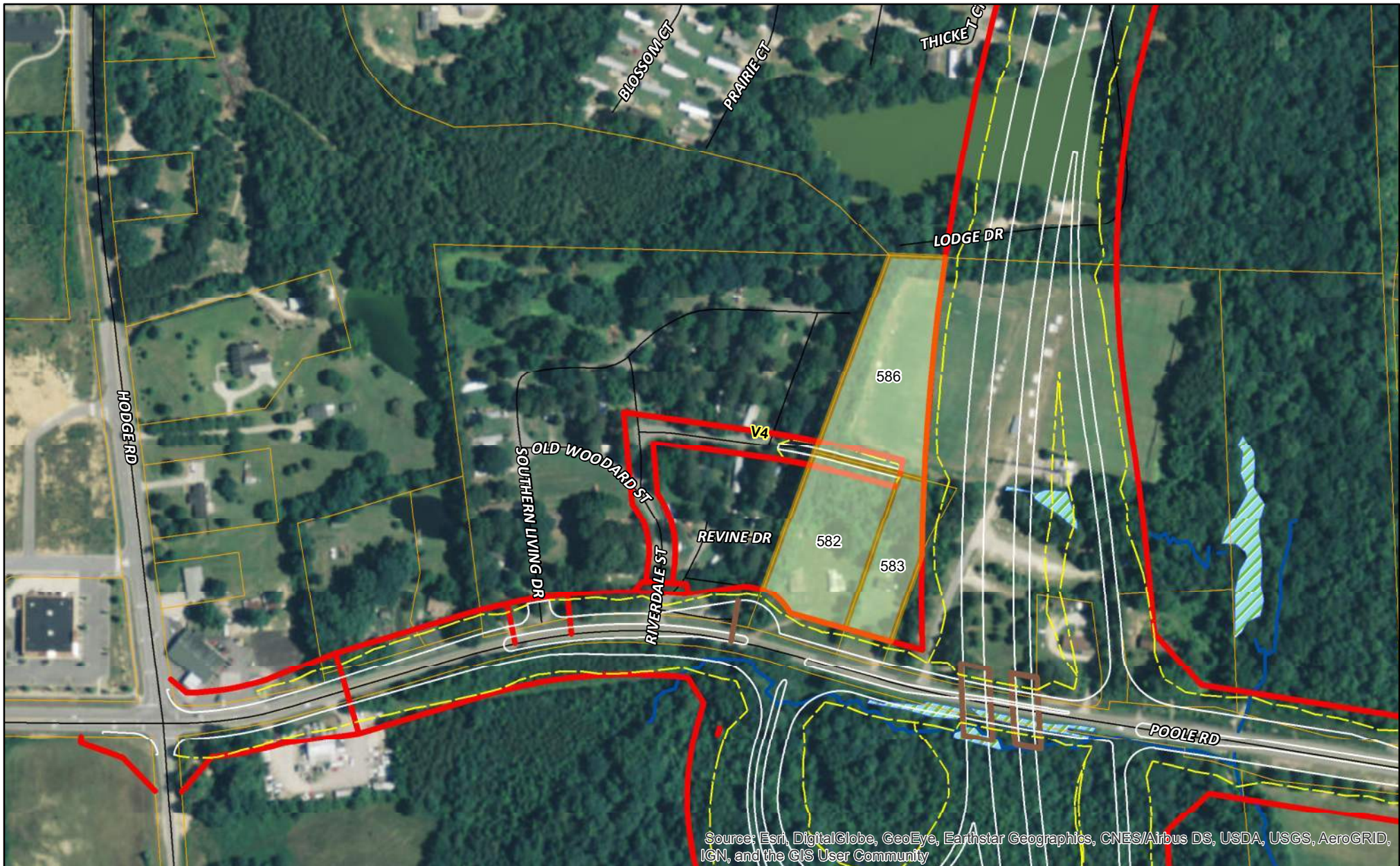
Source: Wake & Johnston Counties GIS



SERVICE ROAD STUDY PROPERTY ACCESS

**Service Road:
V1 & V2**

**Figure:
B-38B**



COMPLETE 540
 TIP R-2721/R-2828/R-2829
 Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

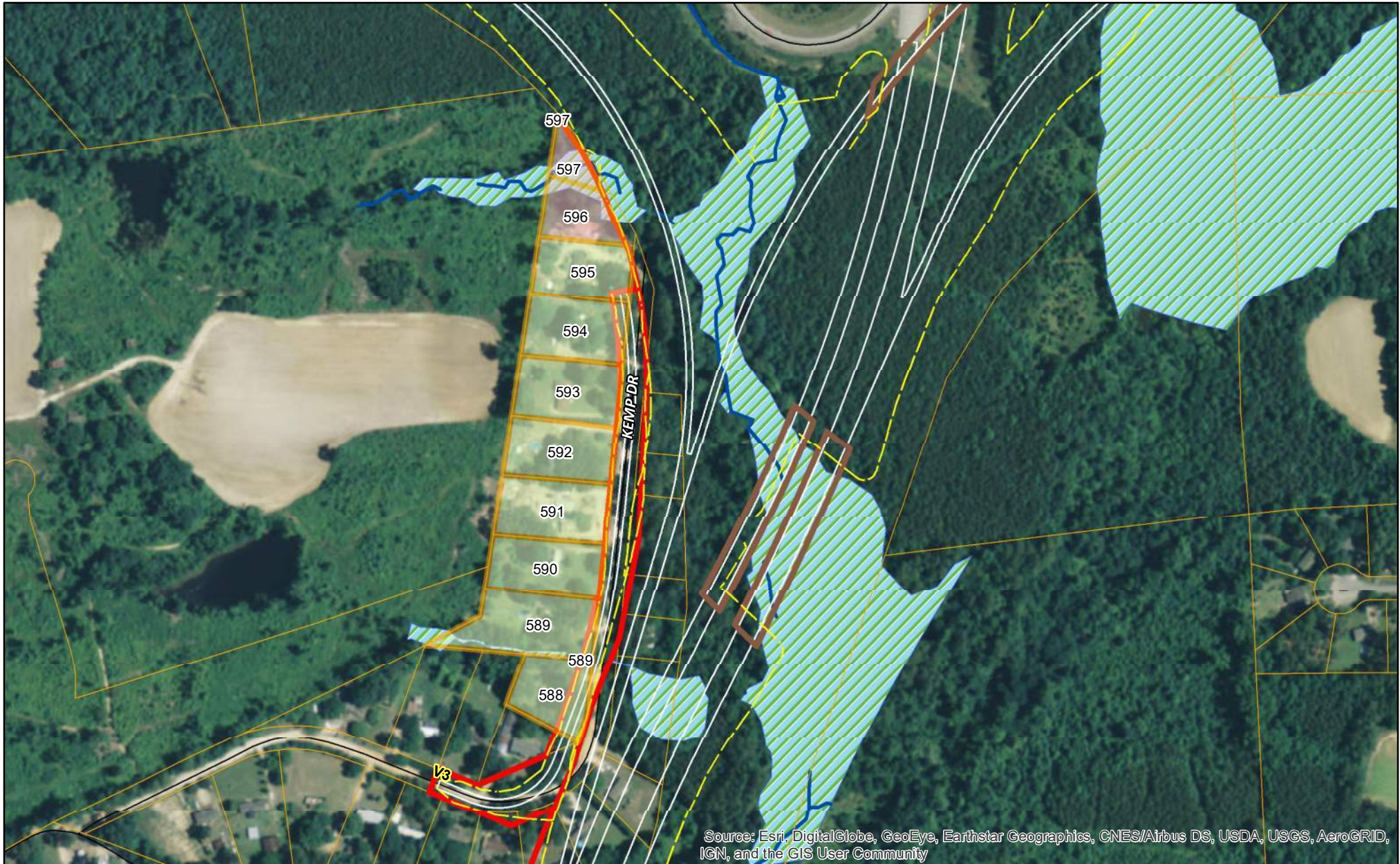
Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
V4

Figure:
B-39



COMPLETE 540
TIP R-2721/R-2828/R-2829
Wake and Johnston Counties



PRELIMINARY : SUBJECT TO CHANGE

NOT TO SCALE

Source: Wake & Johnston Counties GIS

Access	Slope Stakes	Bridges
No Access	Roadway Design	Surveyed Wetlands
Roads	Right Of Way	Surveyed Ponds
Streams	Parcels	Railroad

SERVICE ROAD STUDY PROPERTY ACCESS

Service Road:
V3

Figure:
B-40

APPENDIX C

Cost Estimates

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD D1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.3	AC	\$ 20,000.00	\$ 6,000.00
			UNCLASSIFIED EXCAVATION	2,711	CY	\$ 5.00	\$ 13,555.00
			BORROW	87	CY	\$ 5.00	\$ 435.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.17	MILES	\$ 150,000.00	\$ 25,500.00
			FINE GRADING	3,450	SY	\$ 2.00	\$ 6,900.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,800	SY	\$ 45.00	\$ 81,000.00
			PAVEMENT RESURFACING		SY		\$ -
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,980	SY	\$ 6.00	\$ 11,880.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.94	ACRES	\$ 14,600.00	\$ 13,724.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.17	MILES	\$ 20,000.00	\$ 3,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 73,077.30

Contract Cost	\$ 235,471.30
E. & C. 15%	\$ 35,320.70
Construction Cost	\$ 270,792.00
ROW Cost 1.6 Acres	\$ 103,972.89
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 374,764.88

Property Aquisition Cost if not constructed	\$ 242,788.64
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 131,976.24

SERVICE ROAD CONSTRUCTION COST **SERVICE ROADS E1 & E2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.6	AC	\$ 20,000.00	\$ 32,000.00
			UNCLASSIFIED EXCAVATION	6,700	CY	\$ 5.00	\$ 33,500.00
			BORROW	850	CY	\$ 5.00	\$ 4,250.00
			DRAINAGE NEW LOCATION - 2 LANE CURB & GUTTER	0.31	MILES	\$ 150,000.00	\$ 46,500.00
			FINE GRADING	6,850	SY	\$ 2.00	\$ 13,700.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	7,230	SY	\$ 45.00	\$ 325,350.00
			PAVEMENT RESURFACING				
			SUBGRADE STABILIZATION	7,953	SY	\$ 6.00	\$ 47,718.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER	3,230	LF	\$ 20.00	\$ 64,600.00
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.86	ACRES	\$ 14,600.00	\$ 12,556.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL	1	EA	\$ 120,000.00	\$ 120,000.00
			TRAFFIC CONTROL	0.31	MILES	\$ 20,000.00	\$ 6,200.00
			THERMO AND MARKERS	0.31	MILES	\$ 15,000.00	\$ 4,650.00
			BUILDING REMOVAL - LARGE	1	EA	\$ 50,000.00	\$ 50,000.00
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 328,060.80

Contract Cost	\$ 1,089,084.80
E. & C. 15%	\$ 163,362.72
Construction Cost	\$ 1,252,447.52
ROW Cost 2.73 Acres	\$ 399,455.15
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 1,651,902.67

Property Aquisition Cost if not constructed	\$ 7,146,844.56
Amount saved by construction service Road	\$ 5,494,941.89
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROADS E3 & E4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.9	AC	\$ 20,000.00	\$ 18,000.00
			UNCLASSIFIED EXCAVATION	3,050	CY	\$ 5.00	\$ 15,250.00
			BORROW	281	CY	\$ 5.00	\$ 1,405.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.19	MILES	\$ 150,000.00	\$ 28,500.00
			FINE GRADING	2,760	SY	\$ 2.00	\$ 5,520.00
			PAVEMENT WIDENING				
			NEW PAVEMENT	2,310	SY	\$ 45.00	\$ 103,950.00
			PAVEMENT RESURFACING	1,120	SY	\$ 12.00	\$ 13,440.00
			SUBGRADE STABILIZATION	2,541	SY	\$ 6.00	\$ 15,246.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		LF		\$ -
			7" MONOLITHIC ISLANDS		LF		\$ -
			EROSION CONTROL	1.06	ACRES	\$ 14,600.00	\$ 15,476.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.19	MILES	\$ 20,000.00	\$ 3,800.00
			THERMO AND MARKERS	0.19	MILES	\$ 15,000.00	\$ 2,850.00
			BUILDING REMOVAL - LARGE	1	EA	\$ 50,000.00	\$ 50,000.00
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 123,046.65

Contract Cost	\$ 396,483.65
E. & C. 15%	\$ 59,472.55
Construction Cost	\$ 455,956.20
ROW Cost 1.9 Acres	\$ 208,198.31
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 664,154.51

Property Aquisition Cost if not constructed	\$ 7,146,844.56
Amount saved by construction service Road	\$ 6,482,690.05
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD G1**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.6	AC	\$ 20,000.00	\$ 12,000.00
			UNCLASSIFIED EXCAVATION	545	CY	\$ 5.00	\$ 2,725.00
			BORROW	201	CY	\$ 5.00	\$ 1,005.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.06	MILES	\$ 150,000.00	\$ 9,000.00
			FINE GRADING	1,240	SY	\$ 2.00	\$ 2,480.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	680	SY	\$ 45.00	\$ 30,600.00
			PAVEMENT RESURFACING		SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	748	SY	\$ 6.00	\$ 4,488.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.25	ACRES	\$ 14,600.00	\$ 3,650.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.06	MILES	\$ 20,000.00	\$ 1,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 30,216.60

Contract Cost	\$ 97,364.60
E. & C. 15%	\$ 14,604.69
Construction Cost	\$ 111,969.29
ROW Cost 0.23 Acres	\$ 10,221.67
Stream Impact Cost 171 LF	\$ 101,574.00
Wetland Impact Cost 0.14 Acres	\$ 20,148.50
Total Cost	\$ 243,913.46

Property Aquisition Cost if not constructed	\$ 429,432.84
Amount saved by construction service Road	\$ 185,519.38
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD G2

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.4	AC	\$ 20,000.00	\$ 8,000.00
			UNCLASSIFIED EXCAVATION	1,337	CY	\$ 5.00	\$ 6,685.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.06	MILES	\$ 150,000.00	\$ 9,000.00
			FINE GRADING	1,180	SY	\$ 2.00	\$ 2,360.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	720	SY	\$ 45.00	\$ 32,400.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	792	SY	\$ 6.00	\$ 4,752.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.27	ACRES	\$ 14,600.00	\$ 3,942.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.06	MILES	\$ 20,000.00	\$ 1,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 30,752.55

Contract Cost	\$ 99,091.55
E. & C. 15%	\$ 14,863.73
Construction Cost	\$ 113,955.28
ROW Cost 0.11 Acres	\$ 11,576.66
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 125,531.94

Property Aquisition Cost if not constructed	\$ 3,542,209.92
Amount saved by construction service Road	\$ 3,416,677.98
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD G3

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.8	AC	\$ 20,000.00	\$ 36,000.00
			UNCLASSIFIED EXCAVATION	6,973	CY	\$ 5.00	\$ 34,865.00
			BORROW	508	CY	\$ 5.00	\$ 2,540.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.26	MILES	\$ 150,000.00	\$ 39,000.00
			FINE GRADING	5,280	SY	\$ 2.00	\$ 10,560.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	3,430	SY	\$ 45.00	\$ 154,350.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	3,773	SY	\$ 6.00	\$ 22,638.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.36	ACRES	\$ 14,600.00	\$ 5,256.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.26	MILES	\$ 20,000.00	\$ 5,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE	2	EA	\$ 50,000.00	\$ 100,000.00
			BUILDING REMOVAL - SMALL		EA		\$ -
			RCBC (2@6X5) P1 STA. 23+00.00	10	LF	\$ 32.50	\$ 325.00
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ 48.75
			MISC. & MOB (45% FUNCTIONAL)				\$ 184,684.05

Contract Cost	\$ 595,466.80
E. & C. 15%	\$ 89,320.02
Construction Cost	\$ 684,786.82
ROW Cost 2.43 Acres	\$ 596,960.21
Stream Impact Cost 57 LF	\$ 33,858.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 1,315,605.03

Property Aquisition Cost if not constructed	\$ 4,493,276.61
Amount saved by construction service Road	\$ 3,177,671.58
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD G4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	2.1	AC	\$ 20,000.00	\$ 42,000.00
			UNCLASSIFIED EXCAVATION	1,677	CY	\$ 5.00	\$ 8,385.00
			BORROW	4,772	CY	\$ 5.00	\$ 23,860.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.27	MILES	\$ 150,000.00	\$ 40,500.00
			FINE GRADING	5,420	SY	\$ 2.00	\$ 10,840.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,880	SY	\$ 45.00	\$ 129,600.00
			PAVEMENT RESURFACING		SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,168	SY	\$ 6.00	\$ 19,008.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.35	ACRES	\$ 14,600.00	\$ 19,710.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.27	MILES	\$ 20,000.00	\$ 5,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 134,686.35

Contract Cost	\$ 433,989.35
E. & C. 15%	\$ 65,098.40
Construction Cost	\$ 499,087.75
ROW Cost 2.62 Acres	\$ 370,512.08
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 869,599.83

Property Acquisition Cost if not constructed	\$ 851,725.18
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 17,874.65

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD G5

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.5	AC	\$ 20,000.00	\$ 10,000.00
			UNCLASSIFIED EXCAVATION	887	CY	\$ 5.00	\$ 4,435.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.07	MILES	\$ 150,000.00	\$ 10,500.00
			FINE GRADING	1,490	SY	\$ 2.00	\$ 2,980.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	970	SY	\$ 45.00	\$ 43,650.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	1,067	SY	\$ 6.00	\$ 6,402.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.34	ACRES	\$ 14,600.00	\$ 4,964.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.07	MILES	\$ 20,000.00	\$ 1,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 37,948.95

Contract Cost	\$ 122,279.95
E. & C. 15%	\$ 18,341.99
Construction Cost	\$ 140,621.94
ROW Cost 0.28 Acres	\$ 32,020.23
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 172,642.17

Property Aquisition Cost if not constructed	\$ 3,542,209.92
Amount saved by construction service Road	\$ 3,369,567.75
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD H1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.90	AC	\$ 20,000.00	\$ 18,000.00
			UNCLASSIFIED EXCAVATION	3,749	CY	\$ 5.00	\$ 18,745.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.14	MILES	\$ 150,000.00	\$ 21,164.77
			FINE GRADING	2,450	SY	\$ 2.00	\$ 4,900.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,510	SY	\$ 45.00	\$ 67,950.00
			PAVEMENT RESURFACING	320	SY	\$ 12.00	\$ 3,840.00
			. . " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,661	SY	\$ 6.00	\$ 9,966.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.84	ACRES	\$ 14,600.00	\$ 12,264.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.14	MILES	\$ 20,000.00	\$ 2,821.97
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 71,843.28

Contract Cost	\$ 231,495.03
E. & C. 15%	\$ 34,724.25
Construction Cost	\$ 266,219.28
ROW Cost 1.38 ACRES	\$ 91,756.94
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 357,976.22

Property Aquisition Cost if not constructed	\$ 2,505,960.52
Amount saved by construction service Road	\$ 2,147,984.30
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD H2

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.40	AC	\$ 20,000.00	\$ 28,000.00
			UNCLASSIFIED EXCAVATION	919	CY	\$ 5.00	\$ 4,595.00
			BORROW	6,310	CY	\$ 5.00	\$ 31,550.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.18	MILES	\$ 150,000.00	\$ 27,000.00
			FINE GRADING	3,570	SY	\$ 2.00	\$ 7,140.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,250	SY	\$ 45.00	\$ 101,250.00
			PAVEMENT RESURFACING		SY		\$ -
			. . " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	2,475	SY	\$ 6.00	\$ 14,850.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.00	ACRES	\$ 14,600.00	\$ 14,600.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.18	MILES	\$ 20,000.00	\$ 3,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL	1	EA	\$ 20,000.00	\$ 20,000.00
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 113,663.25

Contract Cost	\$ 366,248.25
E. & C. 15%	\$ 54,937.24
Construction Cost	\$ 421,185.49
ROW Cost 2.00 ACRES	\$ 210,728.85
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 631,914.34

Property Aquisition Cost if not constructed	\$ 301,273.62
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 330,640.72

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD H3

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.80	AC	\$ 20,000.00	\$ 16,000.00
			UNCLASSIFIED EXCAVATION	1,916	CY	\$ 5.00	\$ 9,580.00
			BORROW	77	CY	\$ 5.00	\$ 385.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.13	MILES	\$ 150,000.00	\$ 19,500.00
			FINE GRADING	3,570	SY	\$ 2.00	\$ 7,140.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,450	SY	\$ 45.00	\$ 65,250.00
			PAVEMENT RESURFACING		SY		\$ -
			. . " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,595	SY	\$ 6.00	\$ 9,570.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.70	ACRES	\$ 14,600.00	\$ 10,220.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.13	MILES	\$ 20,000.00	\$ 2,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 63,110.25

Contract Cost	\$ 203,355.25
E. & C. 15%	\$ 30,503.29
Construction Cost	\$ 233,858.54
ROW Cost 1.48 ACRES	\$ 83,779.61
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 317,638.15

Property Aquisition Cost if not constructed	\$ 155,663.90
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 161,974.24

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD 11

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.30	AC	\$ 20,000.00	\$ 26,000.00
			UNCLASSIFIED EXCAVATION	1,915	CY	\$ 5.00	\$ 9,575.00
			BORROW	413	CY	\$ 5.00	\$ 2,065.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.30	MILES	\$ 150,000.00	\$ 45,000.00
			FINE GRADING	3,970	SY	\$ 2.00	\$ 7,940.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	3,270	SY	\$ 45.00	\$ 147,150.00
			PAVEMENT RESURFACING		SY		\$ -
			1.5" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,597	SY	\$ 6.00	\$ 21,582.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.18	ACRES	\$ 14,600.00	\$ 17,228.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.30	MILES	\$ 20,000.00	\$ 6,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 127,143.00

Contract Cost	\$ 409,683.00
E. & C. 15%	\$ 61,452.45
Construction Cost	\$ 471,135.45
ROW Cost 3.24 Acres	\$ 129,992.87
Stream Impact Cost 0 LF	
Wetland Impact Cost 0.36 Acres	\$ 30,222.75
Total Cost	\$ 631,351.07

Property Aquisition Cost if not constructed	\$ 625,830.38
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 5,520.69

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD I2

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.20	AC	\$ 20,000.00	\$ 4,000.00
			UNCLASSIFIED EXCAVATION	1,438	CY	\$ 5.00	\$ 7,190.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.18	MILES	\$ 150,000.00	\$ 27,000.00
			FINE GRADING	3,240	SY	\$ 2.00	\$ 6,480.00
			PAVEMENT WIDENING	330	SY	\$ 50.00	\$ 16,500.00
			NEW PAVEMENT	1,220	SY	\$ 45.00	\$ 54,900.00
			PAVEMENT RESURFACING	460	SY	\$ 12.00	\$ 5,520.00
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,705	SY	\$ 6.00	\$ 10,230.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.68	ACRES	\$ 14,600.00	\$ 9,928.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.18	MILES	\$ 20,000.00	\$ 3,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 65,406.60

Contract Cost	\$ 210,754.60
E. & C. 15%	\$ 31,613.19
Construction Cost	\$ 242,367.79
ROW Cost 1.44 Acres	\$ 78,705.26
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 321,073.05

Property Aquisition Cost if not constructed	\$ 1,716,390.28
Amount saved by construction service Road	\$ 1,395,317.23
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD J1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.3	AC	\$ 20,000.00	\$ 6,000.00
			UNCLASSIFIED EXCAVATION	468	CY	\$ 5.00	\$ 2,340.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.03	MILES	\$ 150,000.00	\$ 4,500.00
			FINE GRADING	620	SY	\$ 2.00	\$ 1,240.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	340	SY	\$ 45.00	\$ 15,300.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	374	SY	\$ 6.00	\$ 2,244.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.11	ACRES	\$ 14,600.00	\$ 1,606.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.03	MILES	\$ 20,000.00	\$ 600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 15,223.50

Contract Cost	\$ 49,053.50
E. & C. 15%	\$ 7,358.03
Construction Cost	\$ 56,411.53
ROW Cost 0.13 Acres	\$ 4,766.18
Stream Impact Cost 115 LF	\$ 68,310.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 129,487.70

Property Aquisition Cost if not constructed	\$ 440,061.40
Amount saved by construction service Road	\$ 310,573.70
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD K1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	3.10	AC	\$ 20,000.00	\$ 62,000.00
			UNCLASSIFIED EXCAVATION	2,856	CY	\$ 5.00	\$ 14,280.00
			BORROW	1,985	CY	\$ 5.00	\$ 9,925.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.40	MILES	\$ 150,000.00	\$ 60,000.00
			FINE GRADING	8,180	SY	\$ 2.00	\$ 16,360.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	4,360	SY	\$ 45.00	\$ 196,200.00
			PAVEMENT RESURFACING		SY		\$ -
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	4,796	SY	\$ 6.00	\$ 28,776.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.99	ACRES	\$ 14,600.00	\$ 29,054.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.40	MILES	\$ 20,000.00	\$ 8,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 191,067.75

Contract Cost	\$ 615,662.75
E. & C. 15%	\$ 92,349.41
Construction Cost	\$ 708,012.16
ROW Cost 4.01 ACRES	\$ 32,849.23
Stream Impact Cost 0 LF	
Wetland Impact Cost 0.05 Acres	\$ 10,074.25
Total Cost	\$ 750,935.64

Property Aquisition Cost if not constructed	\$ 345,914.15
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 405,021.48

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD L1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.4	AC	\$ 20,000.00	\$ 8,000.00
			UNCLASSIFIED EXCAVATION	341	CY	\$ 5.00	\$ 1,705.00
			BORROW	108	CY	\$ 5.00	\$ 540.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.03	MILES	\$ 150,000.00	\$ 4,500.00
			FINE GRADING	770	SY	\$ 2.00	\$ 1,540.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	430	SY	\$ 45.00	\$ 19,350.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	473	SY	\$ 6.00	\$ 2,838.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.11	ACRES	\$ 14,600.00	\$ 1,606.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.03	MILES	\$ 20,000.00	\$ 600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 18,305.55

Contract Cost	\$ 58,984.55
E. & C. 15%	\$ 8,847.68
Construction Cost	\$ 67,832.23
ROW Cost 0.14 Acres	\$ 6,136.36
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 73,968.60

Property Aquisition Cost if not constructed	\$ 481,033.91
Amount saved by construction service Road	\$ 407,065.31
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD L2 & L2A**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.1	AC	\$ 20,000.00	\$ 2,000.00
			UNCLASSIFIED EXCAVATION	609	CY	\$ 5.00	\$ 3,045.00
			BORROW	19	CY	\$ 5.00	\$ 95.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.09	MILES	\$ 150,000.00	\$ 13,500.00
			FINE GRADING	1,860	SY	\$ 2.00	\$ 3,720.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,050	SY	\$ 45.00	\$ 47,250.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	1,155	SY	\$ 6.00	\$ 6,930.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			ERROSION CONTROL	0.35	ACRES	\$ 14,600.00	\$ 5,110.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.09	MILES	\$ 20,000.00	\$ 1,800.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 37,552.50

Contract Cost	\$ 121,002.50
E. & C. 15%	\$ 18,150.38
Construction Cost	\$ 139,152.88
ROW Cost 0.80 Acres	\$ 17,069.14
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 156,222.01

Property Aquisition Cost if not constructed	\$ 650,603.85
Amount saved by construction service Road	\$ 494,381.84
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD L3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.2	AC	\$ 20,000.00	\$ 4,000.00
			UNCLASSIFIED EXCAVATION	2,480	CY	\$ 5.00	\$ 12,400.00
			BORROW	103	CY	\$ 5.00	\$ 515.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.20	MILES	\$ 150,000.00	\$ 30,000.00
			FINE GRADING	3,870	SY	\$ 2.00	\$ 7,740.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,430	SY	\$ 45.00	\$ 109,350.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	2,673	SY	\$ 6.00	\$ 16,038.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.01	ACRES	\$ 14,600.00	\$ 14,746.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.20	MILES	\$ 20,000.00	\$ 4,000.00
			THERMO AND MARKERS	0.20	MILES	\$ 15,000.00	\$ 3,000.00
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 90,805.05

Contract Cost	\$ 292,594.05
E. & C. 15%	\$ 43,889.11
Construction Cost	\$ 336,483.16
ROW Cost 2.51 Acres	\$ 116,376.45
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 452,859.61

Property Aquisition Cost if not constructed	\$ 10,711,780.22
Amount saved by construction service Road	\$ 10,258,920.61
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD L4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.0	AC		\$ -
			UNCLASSIFIED EXCAVATION	1,009	CY	\$ 5.00	\$ 5,045.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.08	MILES	\$ 150,000.00	\$ 12,000.00
			FINE GRADING	1,460	SY	\$ 2.00	\$ 2,920.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	880	SY	\$ 45.00	\$ 39,600.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	968	SY	\$ 6.00	\$ 5,808.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.43	ACRES	\$ 14,600.00	\$ 6,278.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.08	MILES	\$ 20,000.00	\$ 1,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 32,962.95

Contract Cost	\$ 106,213.95
E. & C. 15%	\$ 15,932.09
Construction Cost	\$ 122,146.04
ROW Cost 0.70 Acres	\$ 17,391.76
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 139,537.81

Property Aquisition Cost if not constructed	\$ 993,059.81
Amount saved by construction service Road	\$ 853,522.00
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD L5**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.1	AC	\$ 20,000.00	\$ 2,000.00
			UNCLASSIFIED EXCAVATION	744	CY	\$ 5.00	\$ 3,720.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.02	MILES	\$ 150,000.00	\$ 3,000.00
			FINE GRADING	520	SY	\$ 2.00	\$ 1,040.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	340	SY	\$ 45.00	\$ 15,300.00
			PAVEMENT RESURFACING		SY		\$ -
			1.5" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	374	SY	\$ 6.00	\$ 2,244.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.13	ACRES	\$ 14,600.00	\$ 1,898.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.02	MILES	\$ 20,000.00	\$ 400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 13,320.90

Contract Cost	\$ 42,922.90
<u>E. & C. 15%</u>	\$ 6,438.44
Construction Cost	\$ 49,361.34
ROW Cost 0.18 Acres	\$ 8,617.02
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 57,978.36

Property Aquisition Cost if not constructed	\$ 361,382.52
Amount saved by construction service Road	\$ 303,404.16
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD M1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.20	AC	\$ 20,000.00	\$ 4,000.00
			UNCLASSIFIED EXCAVATION	581	CY	\$ 5.00	\$ 2,905.00
			BORROW	1,729	CY	\$ 5.00	\$ 8,645.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.18	MILES	\$ 150,000.00	\$ 27,000.00
			FINE GRADING	3,620	SY	\$ 2.00	\$ 7,240.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,940	SY	\$ 45.00	\$ 87,300.00
			PAVEMENT RESURFACING		SY		\$ -
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	2,135	SY	\$ 6.00	\$ 12,810.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.99	ACRES	\$ 14,600.00	\$ 14,454.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.18	MILES	\$ 20,000.00	\$ 3,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 75,579.30

Contract Cost	\$ 243,533.30
E. & C. 15%	\$ 36,530.00
Construction Cost	\$ 280,063.30
ROW Cost 1.76 Acres	\$ 27,844.06
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 307,907.35

Property Aquisition Cost if not constructed	\$ 371,333.09
Amount saved by construction service Road	\$ 63,425.74
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD M2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.00	AC		\$ -
			UNCLASSIFIED EXCAVATION	5,075	CY	\$ 5.00	\$ 25,375.00
			BORROW	264	CY	\$ 5.00	\$ 1,320.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.33	MILES	\$ 150,000.00	\$ 49,500.00
			FINE GRADING	6,600	SY	\$ 2.00	\$ 13,200.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	3,510	SY	\$ 45.00	\$ 157,950.00
			PAVEMENT RESURFACING		SY		\$ -
			1.5" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,865	SY	\$ 6.00	\$ 23,190.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.83	ACRES	\$ 14,600.00	\$ 26,718.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.33	MILES	\$ 20,000.00	\$ 6,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 136,733.85

Contract Cost	\$ 440,586.85
E. & C. 15%	\$ 66,088.03
Construction Cost	\$ 506,674.88
ROW Cost 4.29 Acres	\$ 100,342.00
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 607,016.88

Property Aquisition Cost if not constructed	\$ 1,578,340.81
Amount saved by construction service Road	\$ 971,323.93
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD N1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.00	AC		\$ -
			UNCLASSIFIED EXCAVATION	744	CY	\$ 5.00	\$ 3,720.00
			BORROW	643	CY	\$ 5.00	\$ 3,215.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.12	MILES	\$ 150,000.00	\$ 18,000.00
			FINE GRADING	1,590	SY	\$ 2.00	\$ 3,180.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	730	SY	\$ 45.00	\$ 32,850.00
			PAVEMENT RESURFACING		SY		\$ -
			1.5" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	805	SY	\$ 6.00	\$ 4,830.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.56	ACRES	\$ 14,600.00	\$ 8,176.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.12	MILES	\$ 20,000.00	\$ 2,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 34,366.95

Contract Cost	\$ 110,737.95
E. & C. 15%	\$ 16,610.69
Construction Cost	\$ 127,348.64
ROW Cost 0.80 ACRES	\$ 20,800.00
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 148,148.64

Property Aquisition Cost if not constructed	\$427,377.50
Amount saved by construction service Road	\$ 279,228.86
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD N2

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.70	AC	\$ 20,000.00	\$ 34,000.00
			UNCLASSIFIED EXCAVATION	8,993	CY	\$ 5.00	\$ 44,965.00
			BORROW	3,458	CY	\$ 5.00	\$ 17,290.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.53	MILES	\$ 150,000.00	\$ 79,500.00
			FINE GRADING	9,250	SY	\$ 2.00	\$ 18,500.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	5,650	SY	\$ 45.00	\$ 254,250.00
			PAVEMENT RESURFACING	1,960	SY	\$ 12.00	\$ 23,520.00
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	6,215	SY	\$ 6.00	\$ 37,290.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			RCBC (2@7X5) P1 STA. 25+96.56	57	LF	\$ 32.50	\$ 1,852.50
			EROSION CONTROL	3.07	ACRES	\$ 14,600.00	\$ 44,822.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.71	MILES	\$ 20,000.00	\$ 14,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ 277.88
			MISC. & MOB (45% FUNCTIONAL)				\$ 255,751.65

Contract Cost	\$ 826,219.03
E. & C. 15%	\$ 123,932.85
Construction Cost	\$ 950,151.88
ROW Cost 5.22 Acres	\$ 98,277.25
Stream Impact Cost 195 LF	\$ 115,830.00
Wetland Impact Cost 0.44 Acres	\$ 40,297.00
Total Cost	\$ 1,204,556.12

Property Aquisition Cost if not constructed	\$ 822,673.46
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 381,882.67

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD N3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.00	AC		\$ -
			UNCLASSIFIED EXCAVATION	2,100	CY	\$ 5.00	\$ 10,500.00
			BORROW	12	CY	\$ 5.00	\$ 60.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.15	MILES	\$ 150,000.00	\$ 22,500.00
			FINE GRADING	1,800	SY	\$ 2.00	\$ 3,600.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,490	SY	\$ 45.00	\$ 67,050.00
			PAVEMENT RESURFACING	260	SY	\$ 12.00	\$ 3,120.00
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,640	SY	\$ 6.00	\$ 9,840.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.69	ACRES	\$ 14,600.00	\$ 10,074.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.15	MILES	\$ 20,000.00	\$ 3,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 58,384.80

Contract Cost	\$ 188,128.80
E. & C. 15%	\$ 28,219.32
Construction Cost	\$ 216,348.12
ROW Cost 1.35 Acres	\$ 38,879.90
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 255,228.02

Property Aquisition Cost if not constructed	\$ 134,775.48
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 120,452.54

SERVICE ROAD CONSTRUCTION COST **SERVICE ROADS N3 & N4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.10	AC	\$ 20,000.00	\$ 2,000.00
			UNCLASSIFIED EXCAVATION	4,079	CY	\$ 5.00	\$ 20,395.00
			BORROW	238	CY	\$ 5.00	\$ 1,190.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	0.20	MILES	\$ 150,000.00	\$ 30,000.00
			FINE GRADING	3,310	SY	\$ 2.00	\$ 6,620.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,750	SY	\$ 45.00	\$ 123,750.00
			PAVEMENT RESURFACING	260	SY	\$ 12.00	\$ 3,120.00
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,025	SY	\$ 6.00	\$ 18,150.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.27	ACRES	\$ 14,600.00	\$ 18,542.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.20	MILES	\$ 20,000.00	\$ 4,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE	1	EA	\$ 50,000.00	\$ 50,000.00
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 124,995.15

Contract Cost	\$ 402,762.15
E. & C. 15%	\$ 60,414.32
Construction Cost	\$ 463,176.47
ROW Cost 2.50 Acres	\$ 159,951.26
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 623,127.73

Property Aquisition Cost if not constructed	\$ 218,319.08
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 404,808.65

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD P1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	17.00	AC	\$ 20,000.00	\$ 340,000.00
			UNCLASSIFIED EXCAVATION	159,000	CY	\$ 5.00	\$ 795,000.00
			BORROW	45,782	CY	\$ 5.00	\$ 228,910.00
			DRAINAGE NEW LOCATION- 2 LANE SHOULDER SECTION	1.41	MILES	\$150,000.00	\$ 211,500.00
			FINE GRADING	28,060	SY	\$ 2.00	\$ 56,120.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	14,990	SY	\$ 45.00	\$ 674,550.00
			PAVEMENT RESURFACING		SY		\$ -
			. " AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	16,489	SY	\$ 6.00	\$ 98,934.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			GUARDRAIL	1,700	LF	\$ 15.00	\$ 25,500.00
			GRAU-350	12	EA	\$ 1,800.00	\$ 21,600.00
			EROSION CONTROL	13.72	ACRES	\$ 14,600.00	\$ 200,312.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	1.41	MILES	\$ 20,000.00	\$ 28,200.00
			THERMO AND MARKERS		MILES		\$ -
			WB MAINLINE EXTENDED OVER SWIFT CREEK (64'X54' TANGENT)	3,456	SF	\$ 115.00	\$ 397,440.00
			EB MAINLINE EXTENDED OVER SWIFT CREEK (64'X54' TANGENT)	3,456	SF	\$ 115.00	\$ 397,440.00
			RCBC (2@6X5) P1 STA. 29+60.75	74	LF	\$ 32.50	\$ 2,405.00
			RCBC (2@6X5) P1 STA. 47+72.45	85	LF	\$ 32.50	\$ 2,762.50
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ 360,021.38
			MISC. & MOB (45% FUNCTIONAL)				\$ 1,206,281.70

Contract Cost	\$ 5,046,976.58
E. & C. 15%	\$ 757,046.49
Construction Cost	\$ 5,804,023.06
ROW Cost 19.86 Acres	\$ 281,452.56
Stream Impact Cost 1188 LF	\$ 705,672.00
Wetland Impact Cost 0.54 Acres	\$ 50,371.25
Total Cost	\$ 6,841,518.87

Property Aquisition Cost if not constructed	\$ 2,313,650.58
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 4,527,868.29

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD Q1**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.9	AC	\$ 20,000.00	\$ 18,000.00
			UNCLASSIFIED EXCAVATION	189	CY	\$ 5.00	\$ 945.00
			BORROW	5,339	CY	\$ 5.00	\$ 26,695.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.08	MILES	\$ 150,000.00	\$ 12,000.00
			FINE GRADING	1,530	SY	\$ 2.00	\$ 3,060.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	810	SY	\$ 45.00	\$ 36,450.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	891	SY	\$ 6.00	\$ 5,346.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			GUARDRAIL	500	LF	\$ 15.00	\$ 7,500.00
			GRAU-350	4	EA	\$ 1,800.00	\$ 7,200.00
			EROSION CONTROL	0.45	ACRES	\$ 14,600.00	\$ 6,570.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.08	MILES	\$ 20,000.00	\$ 1,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 56,414.70

Contract Cost	\$ 181,780.70
E. & C. 15%	\$ 27,267.11
Construction Cost	\$ 209,047.81
ROW Cost 0.31 Acres	\$ 3,966.08
Stream Impact Cost 141 LF	\$ 83,754.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 296,767.89

Property Aquisition Cost if not constructed	\$ 597,864.18
Amount saved by construction service Road	\$ 301,096.29
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD Q2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.2	AC	\$ 20,000.00	\$ 4,000.00
			UNCLASSIFIED EXCAVATION	1,241	CY	\$ 5.00	\$ 6,205.00
			BORROW	1,547	CY	\$ 5.00	\$ 7,735.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.17	MILES	\$ 150,000.00	\$ 25,500.00
			FINE GRADING	3,540	SY	\$ 2.00	\$ 7,080.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,300	SY	\$ 45.00	\$ 103,500.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	2,530	SY	\$ 6.00	\$ 15,180.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			ERROSION CONTROL	0.85	ACRES	\$ 14,600.00	\$ 12,410.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.17	MILES	\$ 20,000.00	\$ 3,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 83,254.50

Contract Cost	\$ 268,264.50
E. & C. 15%	\$ 40,239.68
Construction Cost	\$ 308,504.18
ROW Cost 1.52 Acres	\$ 29,444.87
Stream Impact Cost 116 LF	\$ 68,904.00
Wetland Impact Cost 0.03 Acres	\$ 10,074.25
Total Cost	\$ 416,927.30

Property Aquisition Cost if not constructed	\$ 1,459,178.32
Amount saved by construction service Road	\$ 1,042,251.02
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD Q3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.3	AC	\$ 20,000.00	\$ 6,000.00
			UNCLASSIFIED EXCAVATION	267	CY	\$ 5.00	\$ 1,335.00
			BORROW	53	CY	\$ 5.00	\$ 265.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.02	MILES	\$150,000.00	\$ 3,000.00
			FINE GRADING	400	SY	\$ 2.00	\$ 800.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	260	SY	\$ 45.00	\$ 11,700.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	286	SY	\$ 6.00	\$ 1,716.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.12	ACRES	\$ 14,600.00	\$ 1,752.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.02	MILES	\$ 20,000.00	\$ 400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 12,135.60

Contract Cost	\$ 39,103.60
E. & C. 15%	\$ 5,865.54
Construction Cost	\$ 44,969.14
ROW Cost 0.03 Acres	\$ 880.00
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 45,849.14

Property Aquisition Cost if not constructed	\$ 1,459,178.32
Amount saved by construction service Road	\$ 1,413,329.18
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD Q4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.4	AC	\$ 20,000.00	\$ 28,000.00
			UNCLASSIFIED EXCAVATION	13,723	CY	\$ 5.00	\$ 68,615.00
			BORROW	201	CY	\$ 5.00	\$ 1,005.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.19	MILES	\$ 150,000.00	\$ 28,500.00
			FINE GRADING	2,220	SY	\$ 2.00	\$ 4,440.00
			PAVEMENT WIDENING	170	SY	\$ 50.00	\$ 8,500.00
			NEW PAVEMENT	1,670	SY	\$ 45.00	\$ 75,150.00
			PAVEMENT RESURFACING	610	SY	\$ 12.00	\$ 7,320.00
			SUBGRADE STABILIZATION	1,837	SY	\$ 6.00	\$ 11,022.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.38	ACRES	\$ 14,600.00	\$ 20,148.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.19	MILES	\$ 20,000.00	\$ 3,800.00
			THERMO AND MARKERS	0.19	MILES	\$ 15,000.00	\$ 2,850.00
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 116,707.50

Contract Cost	\$ 376,057.50
E. & C. 15%	\$ 56,408.63
Construction Cost	\$ 432,466.13
ROW Cost 2.90 Acres	\$ 92,034.66
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 524,500.78

Property Aquisition Cost if not constructed	\$ 4,931,884.00
Amount saved by construction service Road	\$ 4,407,383.22
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD Q5

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.6	AC	\$ 20,000.00	\$ 12,000.00
			UNCLASSIFIED EXCAVATION	354	CY	\$ 5.00	\$ 1,770.00
			BORROW	1,175	CY	\$ 5.00	\$ 5,875.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.08	MILES	\$ 150,000.00	\$ 12,000.00
			FINE GRADING	1,630	SY	\$ 2.00	\$ 3,260.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	910	SY	\$ 45.00	\$ 40,950.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	1,001	SY	\$ 6.00	\$ 6,006.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.35	ACRES	\$ 14,600.00	\$ 5,110.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.08	MILES	\$ 20,000.00	\$ 1,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 39,856.95

Contract Cost	\$ 128,427.95
E. & C. 15%	\$ 19,264.19
Construction Cost	\$ 147,692.14
ROW Cost 0.56 Acres	\$ 12,600.00
Stream Impact Cost 156 LF	\$ 92,664.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 252,956.14

Property Aquisition Cost if not constructed	\$ 33,825.00
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 219,131.14

SERVICE ROAD CONSTRUCTION COST SERVICE ROAD R1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.8	AC	\$ 20,000.00	\$ 16,000.00
			UNCLASSIFIED EXCAVATION	3,685	CY	\$ 5.00	\$ 18,425.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.17	MILES	\$ 150,000.00	\$ 25,500.00
			FINE GRADING	2,960	SY	\$ 2.00	\$ 5,920.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,970	SY	\$ 45.00	\$ 88,650.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	2,167	SY	\$ 6.00	\$ 13,002.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.44	ACRES	\$ 14,600.00	\$ 6,424.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.17	MILES	\$ 20,000.00	\$ 3,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 79,794.45

Contract Cost	\$ 257,115.45
E. & C. 15%	\$ 38,567.32
Construction Cost	\$ 295,682.77
ROW Cost 2.25 Acres	\$ 22,680.40
Stream Impact Cost 449 LF	\$ 266,706.00
Wetland Impact Cost 0.05 Acres	\$ 10,074.25
Total Cost	\$ 595,143.42

Property Acquisition Cost if not constructed	\$ 130,123.30
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 465,020.12

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD R2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	8.0	AC	\$ 20,000.00	\$ 160,000.00
			UNCLASSIFIED EXCAVATION	47,999	CY	\$ 5.00	\$ 239,995.00
			BORROW	24,648	CY	\$ 5.00	\$ 123,240.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.86	MILES	\$ 150,000.00	\$ 128,352.27
			FINE GRADING	11,400	SY	\$ 2.00	\$ 22,800.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	9,410	SY	\$ 45.00	\$ 423,450.00
			PAVEMENT RESURFACING		SY		\$ -
			SUBGRADE STABILIZATION	10,351	SY	\$ 6.00	\$ 62,106.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			GUARDRAIL	800	LF	\$ 15.00	\$ 12,000.00
			GRAU-350	6	EA	\$ 1,800.00	\$ 10,800.00
			EROSION CONTROL	6.51	ACRES	\$ 14,600.00	\$ 95,046.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.86	MILES	\$ 20,000.00	\$ 17,113.64
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 582,706.31

Contract Cost		\$ 1,877,609.22
E. & C. 15%		\$ 281,641.38
Construction Cost		\$ 2,159,250.60
ROW Cost	12.90 Acres	\$ 207,651.92
Stream Impact Cost	386 LF	\$ 229,284.00
Wetland Impact Cost	0.05 Acres	\$ 10,074.25
Total Cost		\$ 2,606,260.77

Property Aquisition Cost if not constructed	\$ 3,324,196.13
Amount saved by construction service Road	\$ 717,935.36
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST

SERVICE ROAD S1

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.2	AC	\$ 20,000.00	\$ 24,000.00
			UNCLASSIFIED EXCAVATION	2,354	CY	\$ 5.00	\$ 11,770.00
			BORROW	7	CY	\$ 5.00	\$ 35.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.25	MILES	\$ 150,000.00	\$ 37,500.00
			FINE GRADING	2,750	SY	\$ 2.00	\$ 5,500.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,390	SY	\$ 45.00	\$ 107,550.00
			PAVEMENT RESURFACING	700	SY		\$ -
			SUBGRADE STABILIZATION	3,025	SY	\$ 6.00	\$ 18,150.00
			GATE RESET	1	EA	\$ 735.00	\$ 735.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.07	ACRES	\$ 14,600.00	\$ 15,622.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.25	MILES	\$ 20,000.00	\$ 4,981.06
			THERMO AND MARKERS	0.25	MILES	\$ 15,000.00	\$ 3,750.00
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 103,316.88

Contract Cost		\$ 332,909.94
E. & C. 15%		\$ 49,936.49
Construction Cost		\$ 382,846.43
ROW Cost	2.18 Acres	\$ 42,992.99
Stream Impact Cost	0 LF	
Wetland Impact Cost	0 Acres	
Total Cost		\$ 425,839.42

Property Acquisition Cost if not constructed	\$ 77,712.17
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 348,127.25

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD S2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	2.3	AC	\$ 20,000.00	\$ 46,000.00
			UNCLASSIFIED EXCAVATION	25,173	CY	\$ 5.00	\$ 125,865.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.25	MILES	\$150,000.00	\$ 37,500.00
			FINE GRADING	4,790	SY	\$ 2.00	\$ 9,580.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	3,380	SY	\$ 45.00	\$ 152,100.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	3,718	SY	\$ 6.00	\$ 22,308.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.51	ACRES	\$ 14,600.00	\$ 22,046.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.25	MILES	\$ 20,000.00	\$ 5,000.00
			THERMO AND MARKERS	0.25	MILES	\$ 15,000.00	\$ 3,750.00
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 190,867.05

Contract Cost	\$ 615,016.05
E. & C. 15%	\$ 92,252.41
Construction Cost	\$ 707,268.46
ROW Cost 3.33 Acres	\$ 150,011.05
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 857,279.50

Property Aquisition Cost if not constructed	\$ 2,387,899.97
Amount saved by construction service Road	\$ 1,530,620.46
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD S3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.1	AC	\$ 20,000.00	\$ 2,000.00
			UNCLASSIFIED EXCAVATION	1,019	CY	\$ 5.00	\$ 5,095.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.08	MILES	\$150,000.00	\$ 12,000.00
			FINE GRADING	2,870	SY	\$ 2.00	\$ 5,740.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,200	SY	\$ 45.00	\$ 99,000.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	2,420	SY	\$ 6.00	\$ 14,520.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.08	ACRES	\$ 14,600.00	\$ 1,168.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.08	MILES	\$ 20,000.00	\$ 1,600.00
			THERMO AND MARKERS	0.08	MILES	\$ 15,000.00	\$ 1,200.00
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 64,045.35

Contract Cost	\$ 206,368.35
E. & C. 15%	\$ 30,955.25
Construction Cost	\$ 237,323.60
ROW Cost 1.22 Acres	\$ 31,720.00
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 269,043.60

Property Aquisition Cost if not constructed	\$ 4,798,768.32
Amount saved by construction service Road	\$ 4,529,724.72
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD S4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	2.3	AC	\$ 20,000.00	\$ 46,000.00
			UNCLASSIFIED EXCAVATION	13,623	CY	\$ 5.00	\$ 68,115.00
			BORROW	1,564	CY	\$ 5.00	\$ 7,820.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.41	MILES	\$ 150,000.00	\$ 61,500.00
			FINE GRADING	8,190	SY	\$ 2.00	\$ 16,380.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	4,360	SY	\$ 45.00	\$ 196,200.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	4,796	SY	\$ 6.00	\$ 28,776.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	2.52	ACRES	\$ 14,600.00	\$ 36,792.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.41	MILES	\$ 20,000.00	\$ 8,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 211,402.35

Contract Cost	\$ 681,185.35
E. & C. 15%	\$ 102,177.80
Construction Cost	\$ 783,363.15
ROW Cost 3.69 Acres	\$ 55,016.16
Stream Impact Cost 274 LF	\$ 162,756.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 1,001,135.32

Property Aquisition Cost if not constructed	\$ 279,514.33
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 721,620.98

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD T1**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.6	AC	\$ 20,000.00	\$ 12,000.00
			UNCLASSIFIED EXCAVATION	1,066	CY	\$ 5.00	\$ 5,330.00
			BORROW	0	CY		\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.06	MILES	\$ 150,000.00	\$ 9,000.00
			FINE GRADING	1,210	SY	\$ 2.00	\$ 2,420.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	660	SY	\$ 45.00	\$ 29,700.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	726	SY	\$ 6.00	\$ 4,356.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.28	ACRES	\$ 14,600.00	\$ 4,088.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.06	MILES	\$ 20,000.00	\$ 1,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 30,642.30

Contract Cost	\$ 98,736.30
E. & C. 15%	\$ 14,810.45
Construction Cost	\$ 113,546.75
ROW Cost 0.59 Acres	\$ 12,617.44
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 126,164.19

Property Aquisition Cost if not constructed	\$ 2,351,180.00
Amount saved by construction service Road	\$ 2,225,015.81
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD T2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.1	AC	\$ 20,000.00	\$ 2,000.00
			UNCLASSIFIED EXCAVATION	2,559	CY	\$ 5.00	\$ 12,795.00
			BORROW	728	CY	\$ 5.00	\$ 3,640.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.15	MILES	\$ 150,000.00	\$ 23,011.36
			FINE GRADING	2,000	SY	\$ 2.00	\$ 4,000.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,680	SY	\$ 45.00	\$ 75,600.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	1,848	SY	\$ 6.00	\$ 11,088.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.67	ACRES	\$ 14,600.00	\$ 9,782.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.15	MILES	\$ 20,000.00	\$ 3,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 65,212.36

Contract Cost	\$ 210,128.73
E. & C. 15%	\$ 31,519.31
Construction Cost	\$ 241,648.04
ROW Cost 1.49 Acres	\$ 28,761.90
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 270,409.93

Property Aquisition Cost if not constructed	\$ 139,520.97
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 130,888.96

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD T3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.6	AC	\$ 20,000.00	\$ 32,000.00
			UNCLASSIFIED EXCAVATION	1,825	CY	\$ 5.00	\$ 9,125.00
			BORROW	127	CY	\$ 5.00	\$ 635.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.17	MILES	\$ 150,000.00	\$ 25,500.00
			FINE GRADING	2,250	SY	\$ 2.00	\$ 4,500.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,880	SY	\$ 45.00	\$ 84,600.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	2,068	SY	\$ 6.00	\$ 12,408.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.82	ACRES	\$ 14,600.00	\$ 11,972.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.17	MILES	\$ 20,000.00	\$ 3,400.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 82,863.00

Contract Cost	\$ 267,003.00
<u>E. & C. 15%</u>	\$ 40,050.45
Construction Cost	\$ 307,053.45
ROW Cost 1.92 Acres	\$ 38,220.09
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 345,273.54

Property Aquisition Cost if not constructed	\$ 307,884.35
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 37,389.19

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD T4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.0	AC		\$ -
			UNCLASSIFIED EXCAVATION	1,803	CY	\$ 5.00	\$ 9,015.00
			BORROW	260	CY	\$ 5.00	\$ 1,300.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.15	MILES	\$ 150,000.00	\$ 22,500.00
			FINE GRADING	3,100	SY	\$ 2.00	\$ 6,200.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,720	SY	\$ 45.00	\$ 77,400.00
			PAVEMENT RESURFACING	0	SY		\$ -
			SUBGRADE STABILIZATION	1,892	SY	\$ 6.00	\$ 11,352.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.90	ACRES	\$ 14,600.00	\$ 13,140.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.15	MILES	\$ 20,000.00	\$ 3,000.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 64,758.15

Contract Cost	\$ 208,665.15
E. & C. 15%	\$ 31,299.77
Construction Cost	\$ 239,964.92
ROW Cost 1.41 Acres	\$ 29,311.62
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 269,276.54

Property Aquisition Cost if not constructed	\$ 87,758.55
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 181,517.99

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD U1 & U2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	1.0	AC	\$ 20,000.00	\$ 20,000.00
			UNCLASSIFIED EXCAVATION	5,373	CY	\$ 5.00	\$ 26,865.00
			BORROW	3,505	CY	\$ 5.00	\$ 17,525.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.28	MILES	\$ 150,000.00	\$ 42,000.00
			FINE GRADING	5,640	SY	\$ 2.00	\$ 11,280.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	2,980	SY	\$ 45.00	\$ 134,100.00
			PAVEMENT RESURFACING	0	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,278	SY	\$ 6.00	\$ 19,668.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.59	ACRES	\$ 14,600.00	\$ 23,214.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.28	MILES	\$ 20,000.00	\$ 5,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 135,113.40

Contract Cost	\$ 435,365.40
E. & C. 15%	\$ 65,304.81
Construction Cost	\$ 500,670.21
ROW Cost 3.07 Acres	\$ 71,291.42
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 571,961.63

Property Acquisition Cost if not constructed	\$ 992,723.20
Amount saved by construction service Road	\$ 420,761.57
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD U3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	3.5	AC	\$ 20,000.00	\$ 70,000.00
			UNCLASSIFIED EXCAVATION	13,259	CY	\$ 5.00	\$ 66,295.00
			BORROW	5,999	CY	\$ 5.00	\$ 29,995.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.38	MILES	\$ 150,000.00	\$ 57,000.00
			FINE GRADING	7,600	SY	\$ 2.00	\$ 15,200.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	4,020	SY	\$ 45.00	\$ 180,900.00
			PAVEMENT RESURFACING	0	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	4,422	SY	\$ 6.00	\$ 26,532.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			ERROSION CONTROL	2.45	ACRES	\$ 14,600.00	\$ 35,770.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.38	MILES	\$ 20,000.00	\$ 7,600.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 220,181.40

Contract Cost	\$ 709,473.40
E. & C. 15%	\$ 106,421.01
Construction Cost	\$ 815,894.41
ROW Cost 4.33 Acres	\$ 81,573.99
Stream Impact Cost 461 LF	\$ 273,834.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 1,171,302.40

Property Aquisition Cost if not constructed	\$ 556,808.82
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 614,493.58

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD U4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	2.3	AC	\$ 20,000.00	\$ 46,000.00
			UNCLASSIFIED EXCAVATION	1,259	CY	\$ 5.00	\$ 6,295.00
			BORROW	7,704	CY	\$ 5.00	\$ 38,520.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.34	MILES	\$ 150,000.00	\$ 51,000.00
			FINE GRADING	6,740	SY	\$ 2.00	\$ 13,480.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	3,570	SY	\$ 45.00	\$ 160,650.00
			PAVEMENT RESURFACING	0	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	3,927	SY	\$ 6.00	\$ 23,562.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.75	ACRES	\$ 14,600.00	\$ 25,550.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.34	MILES	\$ 20,000.00	\$ 6,800.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 167,335.65

Contract Cost	\$ 539,192.65
E. & C. 15%	\$ 80,878.90
Construction Cost	\$ 620,071.55
ROW Cost 4.17 Acres	\$ 132,138.14
Stream Impact Cost 123 LF	\$ 73,062.00
Wetland Impact Cost 0.37 Acres	\$ 30,222.75
Total Cost	\$ 855,494.44

Property Aquisition Cost if not constructed	\$ 1,395,975.52
Amount saved by construction service Road	\$ 540,481.08
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD V1**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.9	AC	\$ 20,000.00	\$ 18,000.00
			UNCLASSIFIED EXCAVATION	2,316	CY	\$ 5.00	\$ 11,580.00
			BORROW	12	CY	\$ 5.00	\$ 60.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.09	MILES	\$ 150,000.00	\$ 14,204.55
			FINE GRADING	1,280	SY	\$ 2.00	\$ 2,560.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,050	SY	\$ 45.00	\$ 47,250.00
			PAVEMENT RESURFACING	0	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	1,155	SY	\$ 6.00	\$ 6,930.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.47	ACRES	\$ 14,600.00	\$ 6,862.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.09	MILES	\$ 20,000.00	\$ 1,893.94
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 49,203.22

Contract Cost	\$ 158,543.70
<u>E. & C. 15%</u>	\$ 23,781.56
Construction Cost	\$ 182,325.26
ROW Cost 0.97 Acres	\$ 14,768.88
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 197,094.13

Property Aquisition Cost if not constructed	\$ 416,507.77
Amount saved by construction service Road	\$ 219,413.63
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD V2**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.5	AC	\$ 20,000.00	\$ 10,000.00
			UNCLASSIFIED EXCAVATION	45	CY	\$ 5.00	\$ 225.00
			BORROW	769	CY	\$ 5.00	\$ 3,845.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.06	MILES	\$ 150,000.00	\$ 9,261.36
			FINE GRADING	840	SY	\$ 2.00	\$ 1,680.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	700	SY	\$ 45.00	\$ 31,500.00
			PAVEMENT RESURFACING	0	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	770	SY	\$ 6.00	\$ 4,620.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.21	ACRES	\$ 14,600.00	\$ 3,066.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.06	MILES	\$ 20,000.00	\$ 1,200.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 29,428.81

Contract Cost	\$ 94,826.18
E. & C. 15%	\$ 14,223.93
Construction Cost	\$ 109,050.10
ROW Cost 0.55 Acres	\$ 10,838.92
Stream Impact Cost 102 LF	\$ 60,588.00
Wetland Impact Cost 0 Acres	
Total Cost	\$ 180,477.03

Property Aquisition Cost if not constructed	\$ 112,083.66
Amount saved by construction service Road	\$ -
Additional Cost of Service Road	\$ 68,393.37

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD V3**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.5	AC	\$ 20,000.00	\$ 10,000.00
			UNCLASSIFIED EXCAVATION	307	CY	\$ 5.00	\$ 1,535.00
			BORROW	9,414	CY	\$ 5.00	\$ 47,070.00
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.29	MILES	\$ 150,000.00	\$ 43,500.00
			FINE GRADING	5,220	SY	\$ 2.00	\$ 10,440.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	1,840	SY	\$ 45.00	\$ 82,800.00
			PAVEMENT RESURFACING	1,330	SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	2,030	SY	\$ 6.00	\$ 12,180.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	1.42	ACRES	\$ 14,600.00	\$ 20,732.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.29	MILES	\$ 20,000.00	\$ 5,800.00
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 105,325.65

Contract Cost	\$ 339,382.65
E. & C. 15%	\$ 50,907.40
Construction Cost	\$ 390,290.05
ROW Cost 0.69 Acres	\$ 37,636.73
Stream Impact Cost 0 LF	
Wetland Impact Cost 0.01 Acres	\$ 10,074.25
Total Cost	\$ 438,001.03

Property Aquisition Cost if not constructed	\$ 487,930.00
Amount saved by construction service Road	\$ 49,928.97
Additional Cost of Service Road	\$ -

SERVICE ROAD CONSTRUCTION COST **SERVICE ROAD V4**

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			CLEARING AND GRUBBING	0.4	AC	\$ 20,000.00	\$ 8,000.00
			UNCLASSIFIED EXCAVATION	553	CY	\$ 5.00	\$ 2,765.00
			BORROW	0	CY	\$ 5.00	\$ -
			DRAINAGE NEW LOCATION - 2 LANE SHOULDER SECTION	0.06	MILES	\$ 150,000.00	\$ 8,252.90
			FINE GRADING	700	SY	\$ 2.00	\$ 1,400.00
			PAVEMENT WIDENING		SY		\$ -
			NEW PAVEMENT	570	SY	\$ 45.00	\$ 25,650.00
			PAVEMENT RESURFACING		SY		\$ -
			1" AVERAGE ASPHALT WEDGING		SY		\$ -
			SUBGRADE STABILIZATION	627	SY	\$ 6.00	\$ 3,762.00
			1'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			2'-6" CONCRETE CURB AND GUTTER		LF		\$ -
			4" CONCRETE SIDEWALK BOTH SIDES		SY		\$ -
			7" MONOLITHIC ISLANDS		SY		\$ -
			EROSION CONTROL	0.20	ACRES	\$ 14,600.00	\$ 2,920.00
			NEW RR SIGNAL WITH GATES		EA		\$ -
			RUBBER RAILROAD CROSSING		EA		\$ -
			UPGRADE TRAFFIC SIGNAL		EA		\$ -
			NEW TRAFFIC SIGNAL		EA		\$ -
			TRAFFIC CONTROL	0.06	MILES	\$ 20,000.00	\$ 1,100.39
			THERMO AND MARKERS		MILES		\$ -
			BUILDING REMOVAL - LARGE		EA		\$ -
			BUILDING REMOVAL - SMALL		EA		\$ -
			UTILITY CONSTRUCTION				
			RELOCATE EXISTING WATER LINE		LF		\$ -
			RELOCATE EXISTING SEWER LINE		LF		\$ -
			MISC. & MOB (15% STRS & UTIL)				\$ -
			MISC. & MOB (45% FUNCTIONAL)				\$ 24,232.63

Contract Cost	\$ 78,082.91
<u>E. & C. 15%</u>	\$ 11,712.44
Construction Cost	\$ 89,795.34
ROW Cost 1.47 Acres	\$ 84,213.26
Stream Impact Cost 0 LF	
Wetland Impact Cost 0 Acres	
Total Cost	\$ 174,008.60

Property Aquisition Cost if not constructed	\$ 300,037.43
Amount saved by construction service Road	\$ 126,028.82
Additional Cost of Service Road	\$ -