

Coastal Site Rowan County, NC

Duke Energy Site Readiness Program
November 18, 2015



Prepared For:



Prepared By:



November 18, 2015

Mr. Stu Heishman
Vice President
Economic Development and Business Development
Duke Energy Carolinas
526 South Church Street
Charlotte, NC 28202

Re: Duke Energy's Site Readiness Program
Rowan County - Coastal Site

Dear Stu:

Stimmel Associates, PA cordially submits the following summary report for the Rowan County - Coastal Site as part of the Duke Energy's Site Readiness Program. The summary report expands upon the eight (8) analysis / conceptual site plan exhibits prepared for the site. The summary report and exhibits provide relevant information regarding key physical features of the site and approximate site developable area. All information outlined within the summary report and exhibits concerning county/city ordinances or governmental regulations and physical site information are based on the best information available at the time of the report.

Sincerely,

Stimmel Associates, PA



Stephen Owen
Project Manager

CC: Randy Broome

Rowan County - Coastal Site Summary Report

1. Existing Conditions Map:

The proposed Coastal Site is largely located within the town limits of the Town of Cleveland with a smaller portion of the site in the southeast corner of the property located in unincorporated Rowan County. Although the southeastern portion of the site (approximately 9 acres) is not located within the Cleveland town limits, it does lie within the town's Extra-Territorial Jurisdiction (ETJ) and is subject to zoning and development ordinance requirements of the municipality. The total site acreage is approximately 57.17 acres per Rowan County Tax Records. Site acreage per Rowan County digital GIS data is approximately 53.55 acres. Maps in this report were created utilizing the digital GIS data, and therefore acreage calculations are based on the acreage of 53.55.

a. Vehicular Site Access:

The proposed Coastal Site has approximately 300 lf of frontage along Mimosa Street and approximately 1,075 lf of frontage along Wilhelm Road, a private drive which is accessed by Fiber Acres "A" Street. Mimosa Street and Fiber Acres "A" Street are both narrow, two-lane streets that primarily serve local single family residences. US Highway 70 / Statesville Boulevard is a standard four 4 lane thoroughfare with substantially limited locations for full left turn vehicular movements. Access to US Hwy 70 (Statesville Boulevard), the area's primary thoroughfare, is approximately 1,550 lf away via Mimosa Street on the western edge of the site. Existing road access to the eastern portion of the site is approximately 2,700 lf away from US Hwy 70 via Fiber Acres "A" Street and Wilhelm Road. An existing right-of-way connects the center of the site to Fiber Acres "A" Street, and extending a road connection within this right-of-way will reduce access to US Highway 70 to 1,200 lf +/- . Extension of Mimosa Street is maintained by the Town of Cleveland, but is restricted to right-in / right-out access only to US Hwy 70. Fiber Acres "A" Street is maintained by NC DOT and has full left turn movements at its intersection with US Hwy 70 and is therefore the preferred access location. Additional road improvements will likely be required at major points of vehicular access to the site to handle anticipated increases in truck and other traffic.

b. Railroad Access:

A main line of Norfolk Southern Railroad borders the entire northern property line of the site, providing approximately 2,300 lf of railroad frontage. Significant topography relief along the western line frontage creates challenges for service connections, however the eastern side provides more suitable terrain for providing a rail siding. Additional engineering would be required to verify actual feasibility.

c. Environmental Features:

The Coastal Site is currently undeveloped consisting primarily of mature hardwood and evergreen forest. No structures are indicated on the site. A review of the US Fish & Wildlife Service National Wetlands Inventory identifies no ponds or wetlands on the property. The most current USGS Quadrangle Maps shows no intermittent or perennial streams on the site, however an intermittent stream is indicated parallel to, but just outside the southwestern property line. Per the June 16, 2009 FEMA Firm map (3710570200J, Panel 5702) no flood hazard area has been mapped on the site. The property is not located in a water supply watershed. Although these maps do not indicate any adverse environmental factors or development constraints, actual conditions such as rock or stream features may be present. It should be noted that aerial imagery and topography indicate a significant draw running alongside the sanitary sewer line and may be indicative of a stream feature. Therefore, it is recommended that an environmental consultant be retained to verify the actual conditions on the site and any potential impacts on the site's overall developable area.

d. Zoning:

The project site is currently located within the Town of Cleveland or its ETJ and is therefore subject to the town's zoning and development ordinance authority. The largest portion of the site, the portion located within the Cleveland town limits, is currently zoned M-1 (Light Industrial) with the remaining southeast corner of the property (approximately 9 acres) currently zoned R-20 (Single Family Residential). Since the R-20 portion of the site does not permit the proposed industrial uses, rezoning to either M-1 (Light Industrial) or M-2 (Heavy Industrial) zoning classification will be required. The portion of the site located within the Cleveland town limits is also designated within the town's Thoroughfare Corridor Overlay (TCO) District and it is assumed that this will apply to the remainder of the site following rezoning and annexation. Although not directly adjacent to US Highway 70, TCO district standards may still apply, resulting in an additional 100' buffer setback, utility screening, and streetyard landscaping. A minimum 35 foot wide, Grade 4 landscape bufferyard is required between industrially zoned districts and adjacent residentially zoned properties.

e. Watershed:

According to the Rowan County Water Supply Watershed Map, this site does not lie in a water supply watershed. No additional environmental / development regulations associated with watersheds will apply to this site.

f. Utilities:

Electrical Service - Duke Energy provides a 12 kV transmission line to the site along Mimosa Street and Fiber Acres "A" Street. A 100kV transmission line is located less than a mile from the site. The property is served by the Cleveland Substation located approximately 4.5 miles from site. The available electrical capacity is more than 2.5 mW. Duke Energy is the service provider.

Water - Water services would be provided by the Salisbury-Rowan Utilities. An eight (8) inch water line extends to the site from the north along Mimosa Street. However, the primary water supply will likely be extended approximately 1,200 lf from an existing sixteen (16) inch water line located within the US Hwy 70 right-of-way with a total capacity of 4.25 mgd.

Sewer - Sewer service would be provided by the Town of Cleveland. Sewer service is available to the property via an existing eight (8) inch gravity sanitary sewer line (approximately 1,000 lf) which extends through the western portion of the site. Another eight (8) inch gravity line is contiguous to the site (approximately 800 lf) along the southwestern property line. The total capacity of the force main serving the site is 0.2 mgd. The Town of Cleveland's Waste Water Treatment Plant is located approximately 2.0 miles from the site. The total capacity of the Cleveland WWTP is 0.270 mgd with an allocated capacity of 0.175 mgd. Depending on the end user requirements, additional costs and scheduling may be necessary to upgrade sewer service to the needed level of wastewater capacity.

Natural Gas - An existing 2 inch Piedmont Natural Gas line extends to the western edge of the site along Mimosa Street and also along US Highway 70. The gas line has a pressure of 60 psi. The 2" gas line located within the US Hwy 70 right-of-way will likely need to be expanded to a 6" line to meet the anticipated natural gas service demand for the site. Additional costs and scheduling may be required.

Fiber Optic - Telecommunication services to the site are provided by AT&T. An aerial T-1 fiber optic line is located along US Hwy 70.

g. Surrounding Uses:

The site is situated on the south side of Norfolk Southern Railway which borders the full length of the site's northern property line. The site is somewhat isolated behind an older, sparsely developed single family residential subdivision which is located between the site and US Hwy 70. Although mostly residential in character, the "downtown" portion of the Town of Cleveland is located northwest of the site on the north side of the railway. The town center includes several churches, a post office and various municipal service buildings.

An elementary school is located approximately 1,500 feet west of the site. Farther to the west and southwest is a large vehicle manufacturing plant and other industrial uses employing nearly 3,000 workers. East of the site and on the north side of US Hwy 70 is another large industrial facility. Existing land uses south of US Hwy 70 consist largely of rural pastures and woodland and sparsely developed, large lot single family residential homes.

2. **Aerial Map:**

Aerial imagery from the Rowan County GIS shows the site to be undeveloped woodland comprised mostly of mature hardwoods and evergreen trees. The map shows the sparsely developed residential neighborhood located between the site and US Hwy 70 which is the area's principal transportation corridor. The map also shows the Norfolk Southern Railway corridor to the north and various local streets which connect the site to US Hwy 70. Largely vacant parcels are located immediately east and west of the site and south of US Hwy 70.

3. **Elevation Map:**

The elevation map highlights the elevation change from higher elevations to lower elevations by color coded intervals along with subsequent high points and low points. Total elevation change across the site is approximately 74' of relief. The highest point of the site, approximately 816' elevation, is located at the eastern edge of the site midway along the east property line. Another high point, approximately 802' elevation is located along the northern property line approximately 550' west of the northeast corner of the site. The majority of the site drains westward, sloping downward to the site's lowest point located at the southwest corner of the property, where an off-site intermittent stream intersects with the sanitary sewer line.

4. **Slope Analysis Map:**

The slope analysis map highlights areas where development may be limited by slope conditions. The site consists primarily of slight to moderate slopes which are generally supportive of larger footprint buildings and development. Approximately 92.5 % of the site has slopes 10% or less. Of the remaining balance of the site, 6.98% have slopes between 10% and 15%, and only 0.52% of the site has slopes greater than 15%. The steeper slope conditions are minimal and have negligible adverse impacts on development. Additional earthwork may be required to provide large developable pads for industrial uses.

5. **USDA Soils Survey Map:**

The Soils Survey map outlines the soil data per the United States Department of Agriculture Web Soil Survey based on information produced by the National Cooperative Soil Survey. Approximately 37.0% of the site consists of Enon fine sandy loam (EnB). This soil is deep and well drained, but has a high shrink-swell potential. Some foundation reinforcement and road amendments may be required, but this soil is generally suitable for larger footprint buildings and vehicular roadway and parking areas. Approximately 20.5% of the site consists of Mecklenburg clay loam (MeB2). These soils are also deep and well drained and have a moderate shrink-swell potential. Similar to Enon soils, these Mecklenburg soils may also require some foundation and roadway reinforcements, but are generally suitable for larger-scale industrial development. Poindexter-Mocksville complex (Px) comprises 22.3% of the site. This soil is deep, well drained and permeable and has a low shrink-swell potential. This soil is well suited for large scale construction and development. The remaining 14.1% of the site consists of Sedgfield fine sandy loam (SeB). This soil is very deep, but is only moderately well drained, to somewhat poorly drained and has slow permeability. It has a high shrink-swell potential and can have a high or perched water table during wet periods between January and March. Sedgfield fine sandy loam occurs in low lying areas and is associated with surface drainage features. For this site, the existing sewer easement and potential drainage feature lie within this soil classification. The proposed Conceptual Master Plans attempt to accommodate these limitations by minimizing development in these areas.

It is recommended that a geotechnical consultant be retained prior to development to conduct geotechnical investigations to review actual surface soil conditions and subsurface conditions as well as any potential rock locations.

6. Buildable Area Map:

The buildable area map identifies the areas of the site that are most suitable for development. Two primary buildable areas have been identified on the site, as defined by the existing sanitary sewer line that bisects the site. This feature was excluded from the buildable areas, as well as its associated easement. Buildable Area A is located in the western portion of the site and extends to the existing sewer line. This area is approximately 11.21 acres +/- . Buildable Area B is located in the eastern portion of the site and is the largest area with approximately 39.91 acres +/- . The total buildable area is approximately 48.89 acres or 85.52% of the site. It should also be noted that additional building limitations along lot boundaries and the TCO District overly may apply due to required bufferyard screenings and building setbacks. As mentioned previously, it is recommended that an environmental consultant be retained to further delineate stream and wetland locations and any other environmental factors that may influence the buildable area and pad size for an industrial facility.

7. Conceptual Master Plans:

The two conceptual master plans show multiple industrial lot configurations with building footprints ranging from 75,000 sf to 480,000 sf. For these concepts, the potential drainage feature along the sewer line as described previously in Section 1(c) was not considered to be jurisdictional waters. If a future determination classifies it as such, proposed layouts will be impacted or additional permitting and mitigation may be required. Sites show pad elevations based on a preliminary review of existing topography, as well as approximate areas for stormwater management devices. Final grading, stormwater devices, locations, and sizing would be determined during final engineering. For both concepts, proposed road improvements along Fiber Acres "A" street provide a boulevard entrance, enhancing the visual appeal for the development as well as the existing residential lots. This will require additional property acquisition / dedication (approximately 20'). Proposed enhancements and access connections will require approval by applicable regulatory agencies, as well as any additional road improvements that may be necessary.

a. Concept 1:

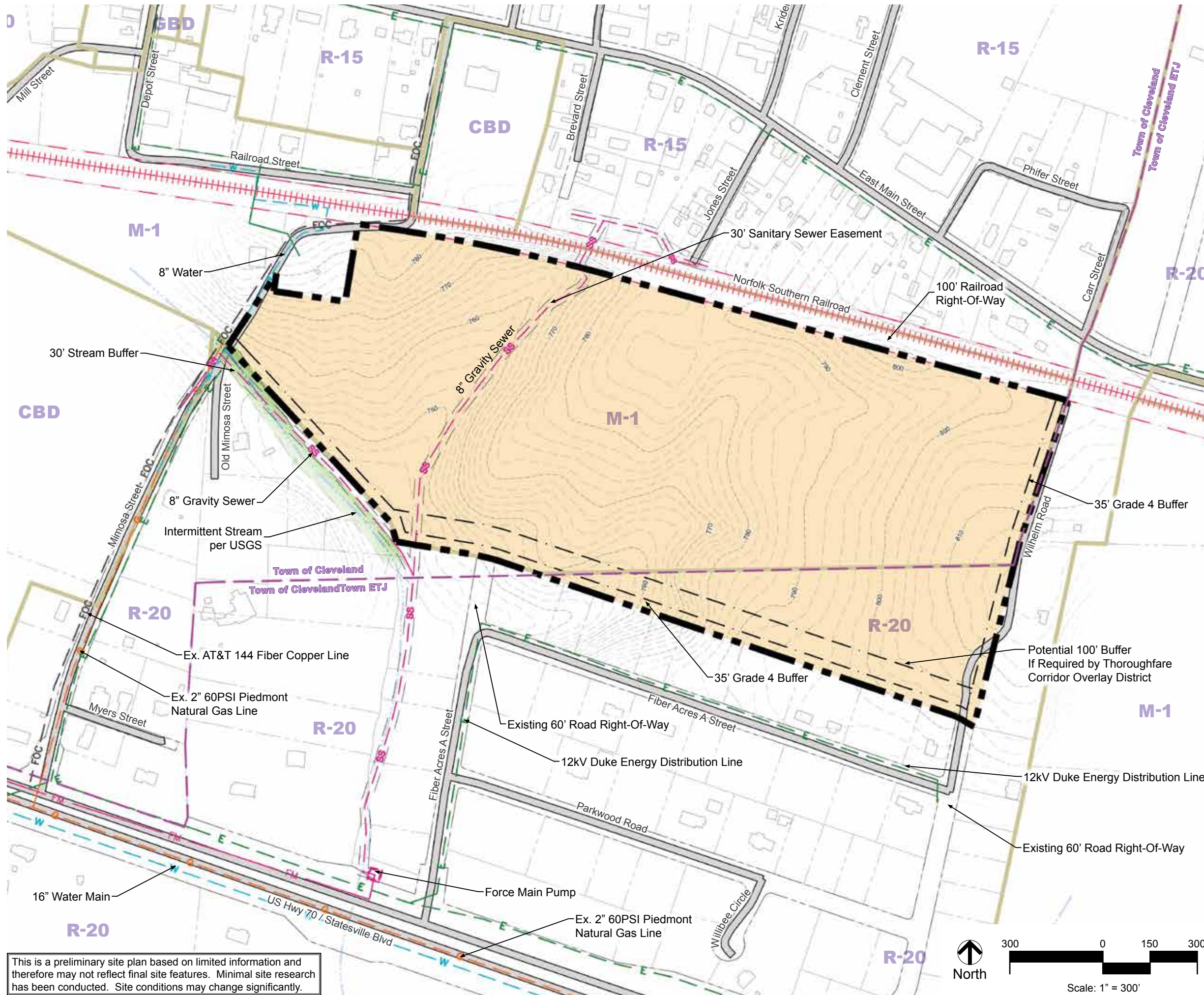
This concept attempts to maximize the site with the largest feasible building footprint. The site consists of one user, divided into two lots by the proposed roadway connection. This roadway will serve as a connection between Mimosa Street at the existing railroad crossing and the boulevard enhancements along Fiber Acres "A" Street. The western portion of the site, at approximately 9 acres, contains the stormwater management device to handle stormwater runoff as required. The remaining eastern portion provides a 480,000 sf +/- facility with rail access, loading docks, and associated parking. Existing trees along the southern boundary are to remain, serving as a buffer to adjacent residential lots as well as fulfilling the Thoroughfare Corridor Overlay District buffer requirements.

Concept 1 provides one lot, with a total building square footage of 480,000 sf +/-.

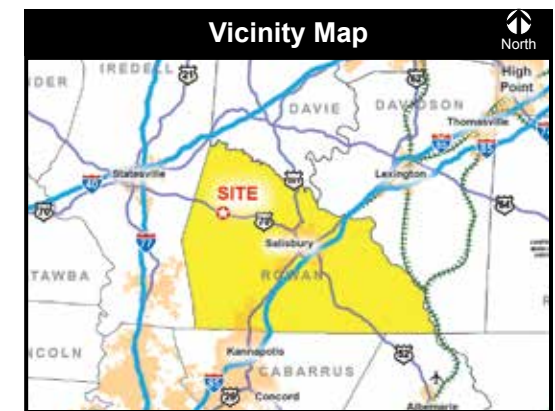
b. Concept 2

This concept divides the tracts into smaller lot sizes in order to provide a diverse set of uses and lot configurations. Proposed facilities range from 75,000 sf to 150,000 sf +/- buildings. Similar to Concept 1, boulevard enhancements create a distinctive entrance, however this concept shows termination in a cul-de-sac that provides access to each lot. The lots range in size between 13 and 20.5 acres +/- . A 5.5 acre +/- common area is dedicated along the southern border to serve as a buffer to adjacent residential lots and satisfy TCO District buffer requirements. Individual stormwater devices will service their respective lots.

Concept 3 provides three total lots, with a total building square footage of 345,000 sf +/-.



This is a preliminary site plan based on limited information and therefore may not reflect final site features. Minimal site research has been conducted. Site conditions may change significantly.



Existing Site Features	
	Zoning Districts
	Jurisdictional Boundary
	Existing Power Line
	Existing Gas Line
	Existing Water Line
	Existing Sanitary Sewer Line
	Existing Force Main
	Existing Fiber Optic Cable
	USGS Intermittent Stream

SITE DATA

Jurisdiction:

Town of Cleveland & Town of Cleveland ETJ

Zoning:

Existing: M-1 Light Industrial
R-20 Single Family Residential
Proposed: M-1 Light Industrial

Watershed:

Site is not located in a water supply watershed.

Site Acreage:

53.55 AC +/- (Per digital Rowan County GIS data)
(57.17 AC +/- Per tax data)

Coastal Site

Rowan County, NC

11/18/2015

Existing Site Features Map

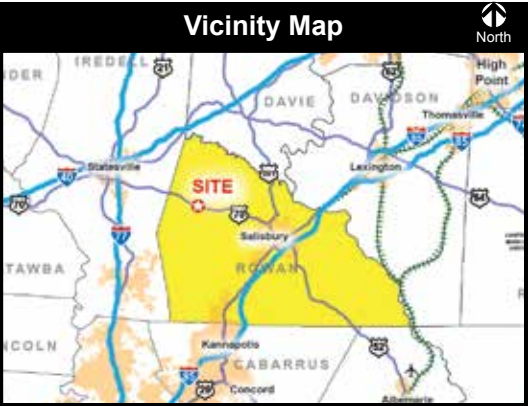
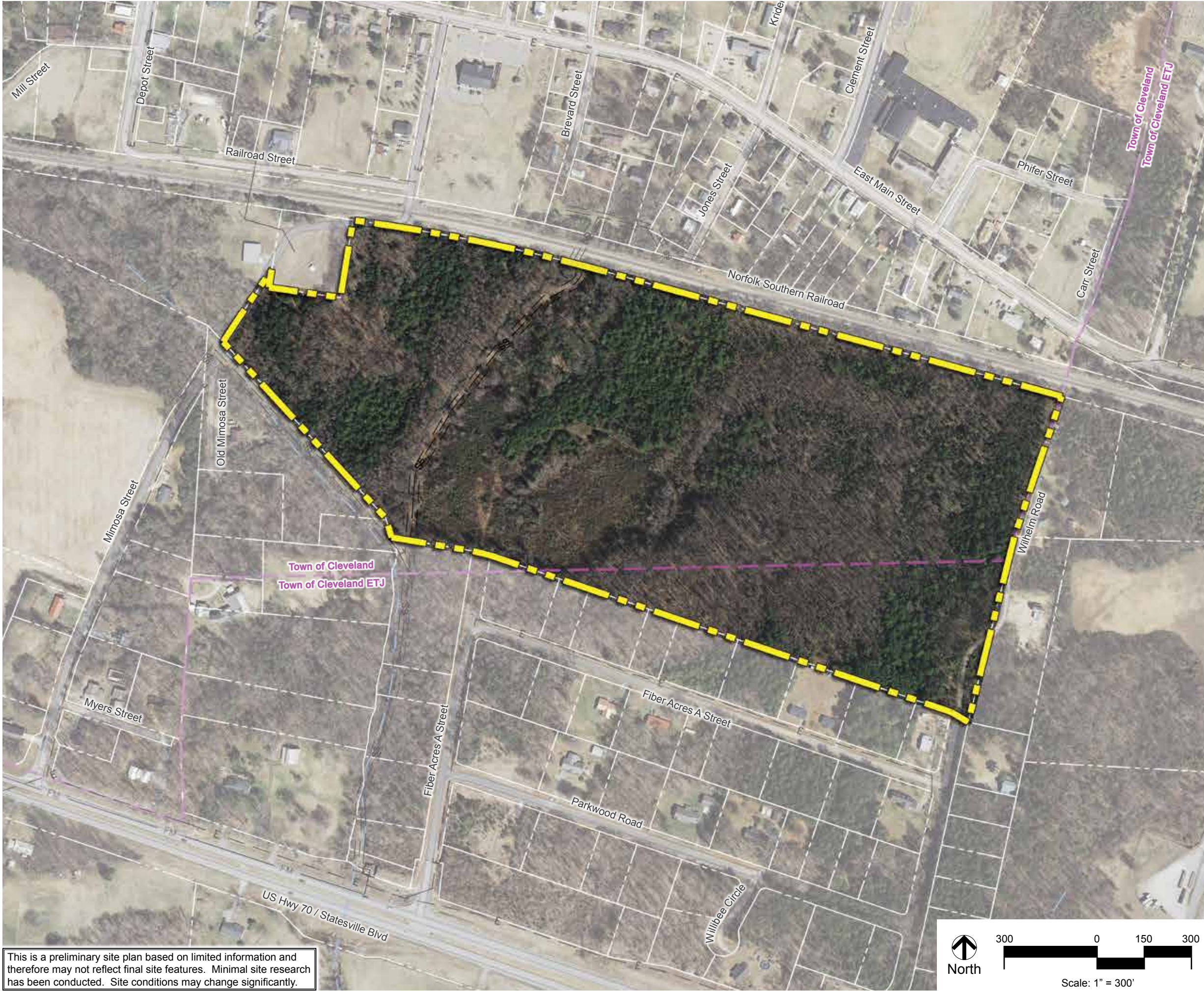
Prepared for:



Project #: 15-090

Prepared by:



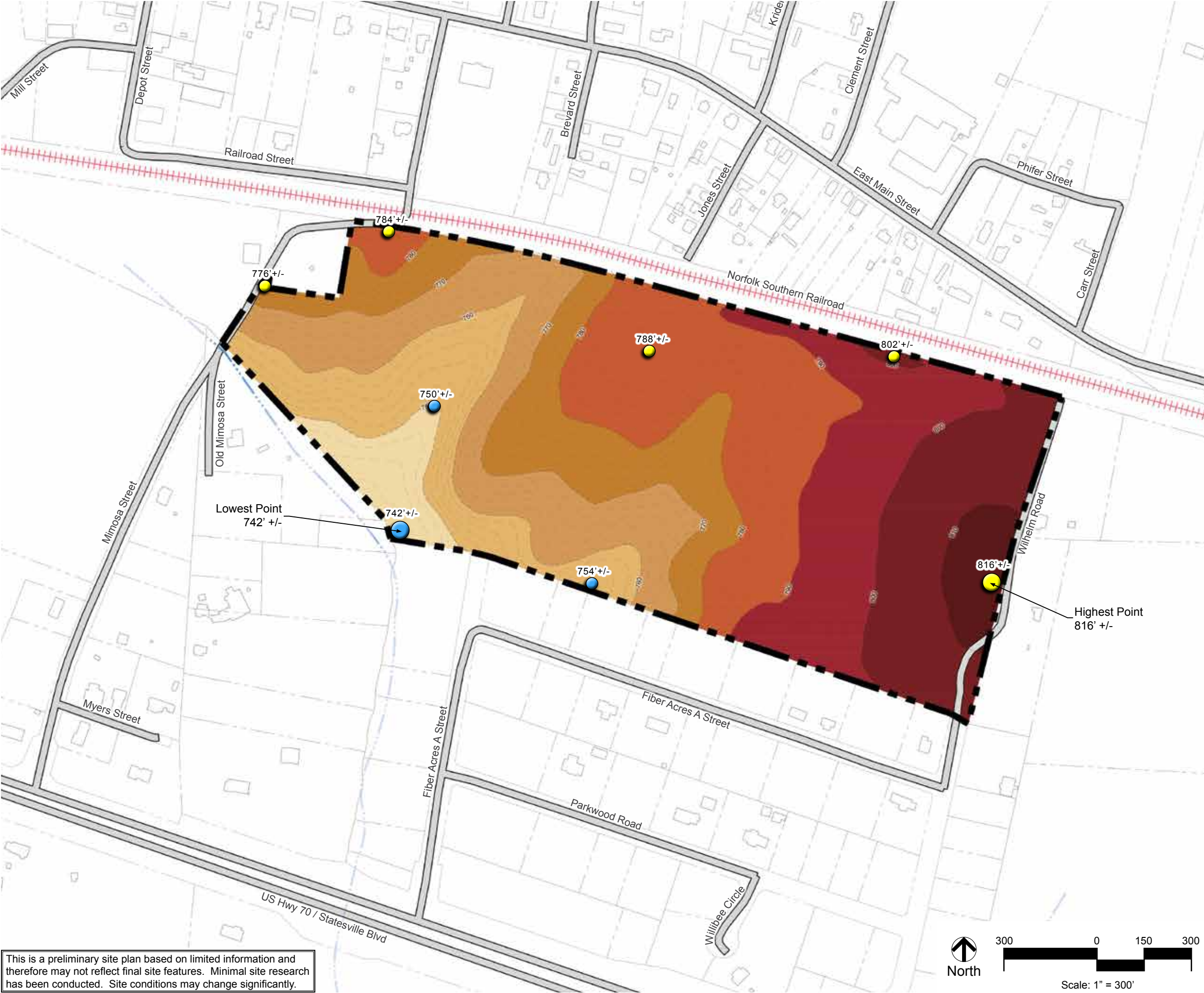


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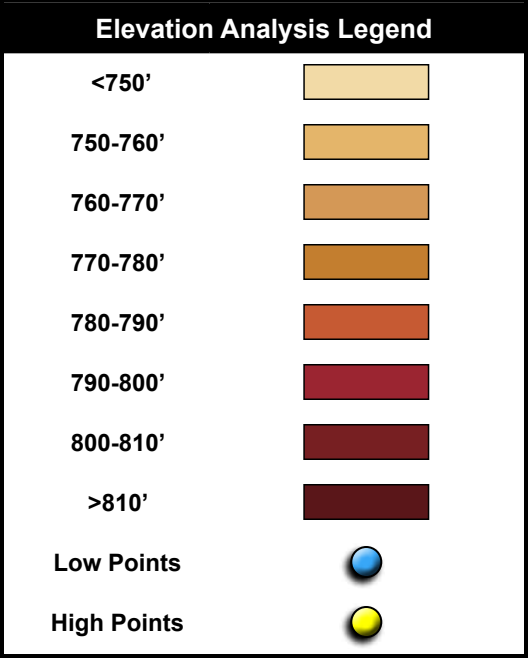
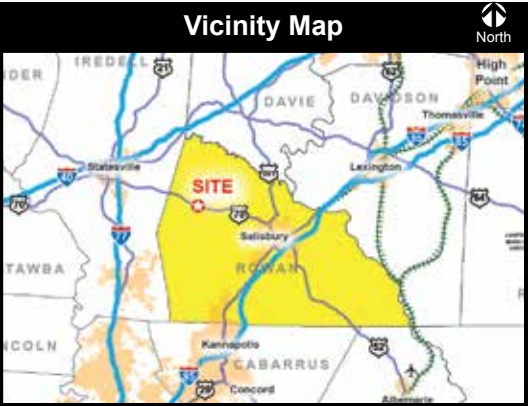
Coastal Site
Rowan County, NC 11/18/2015

Aerial Map
Prepared for:

Project #: 15-090
Prepared by:
 **LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
LAND PLANNING**
601 N. TRADE STREET, SUITE 200
WINSTON-SALEM, NC 27101
www.stimmelpa.com 336.723.1067



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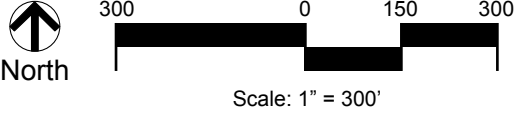


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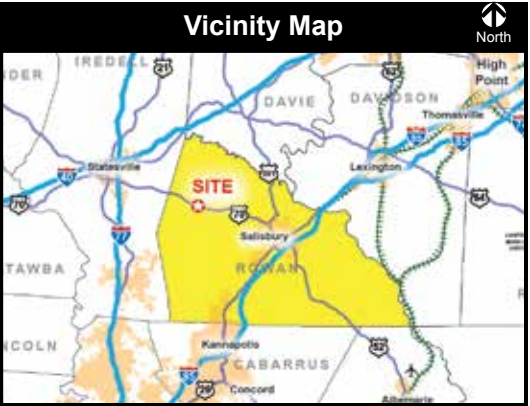
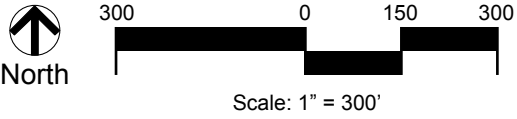
Elevation Map
Prepared for:
DUKE ENERGY
Project #: 15-090
Prepared by:

stimmel LANDSCAPE ARCHITECTURE
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Slope Analysis Legend			
	Slope Range	Area	% of Site
	0 - 5%	28.01 AC +/-	52.31 %
	5 - 10%	21.52 AC +/-	40.19 %
	10 - 15%	3.74 AC +/-	6.98 %
	15 - 25%	0.27 AC +/-	0.50 %
	25 - 35%	0.01 AC +/-	0.02 %
	35 - 100%	0.00 AC +/-	0.00 %

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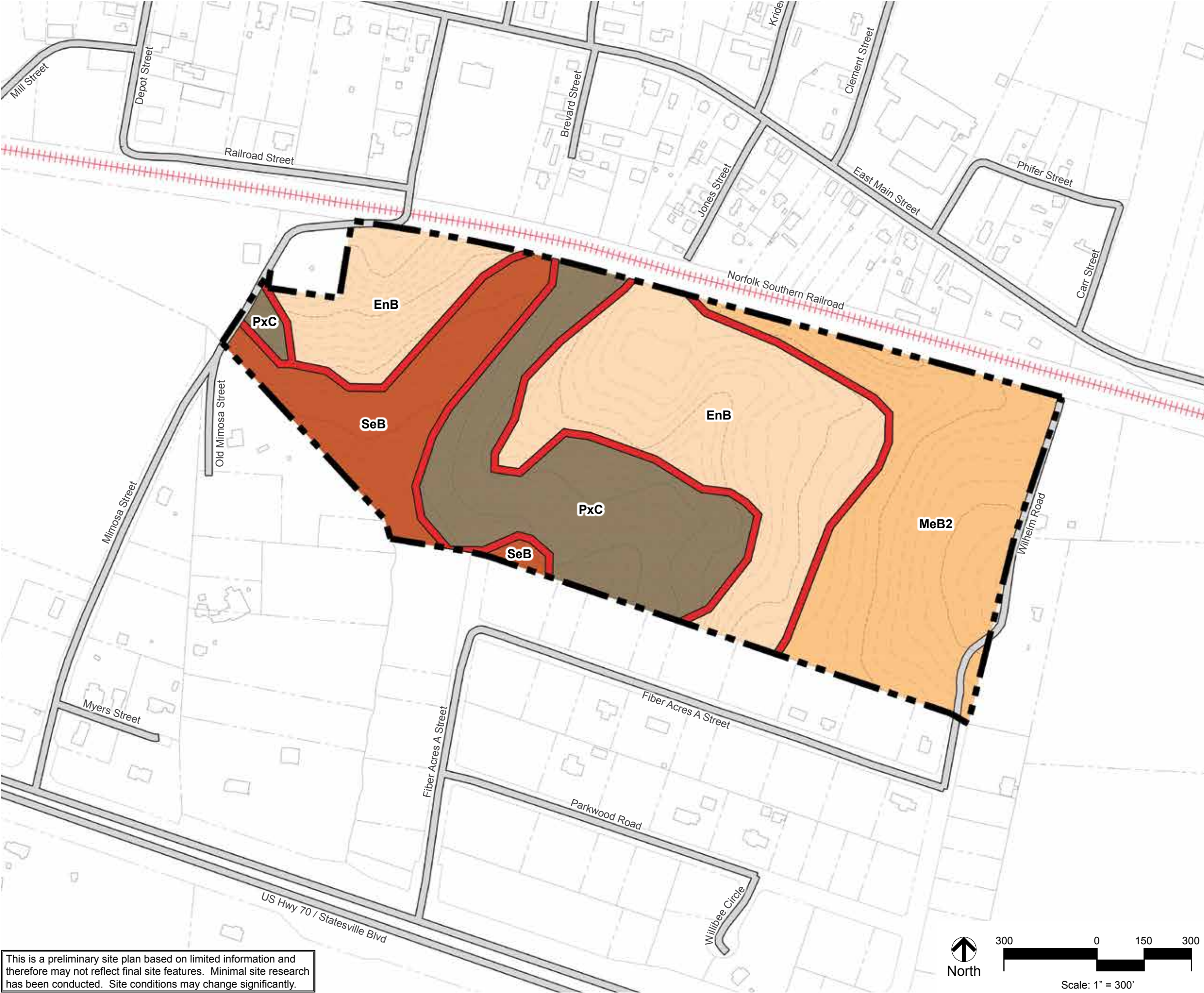
Slope Analysis Map

Prepared for:

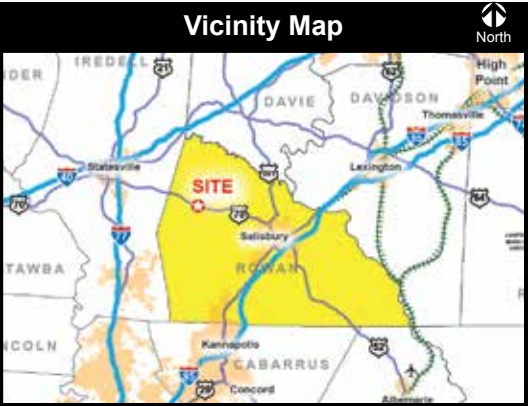
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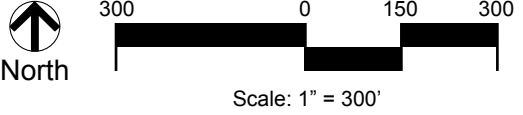
Soils Legend	
	EnB <i>Enon fine sandy loam, 2 to 8 percent slopes</i>
	MeB2 <i>Mecklenburg clay loam, 2 to 8 percent slopes, eroded</i>
	PxC <i>Poindexter-Mocksville complex, 8 to 15 percent slopes</i>
	SeB <i>Sedgefield fine sandy loam, 1 to 6 percent slopes</i>

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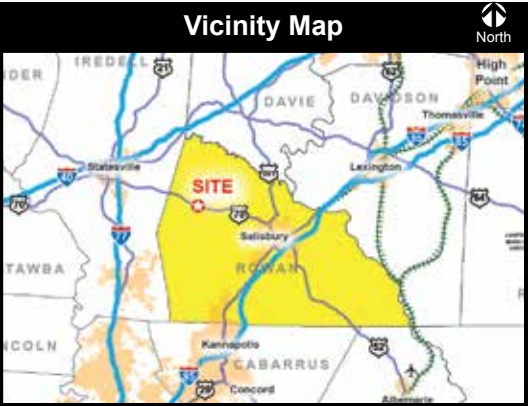
Soil Map
Prepared for:


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Buildable Area Legend	
	Buildable Areas 48.89 Acres 85.52% of total site area

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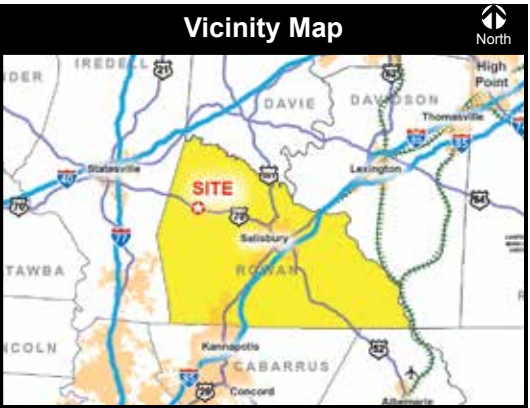
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Buildable Area Map

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Concept 1	
Total Lots:	1 Lot
Total Building:	480,000 sf +/-
Total Lot Acreage:	51.90 Ac. +/-
Common Area:	0.00 Ac. +/-
Road Right-of-Way:	1.65 Ac. +/-
Total Acreage:	53.55 Ac. +/-

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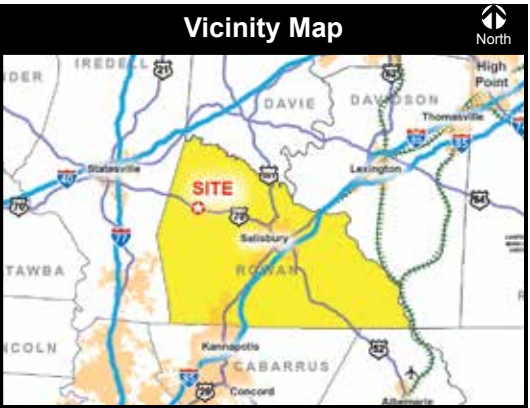
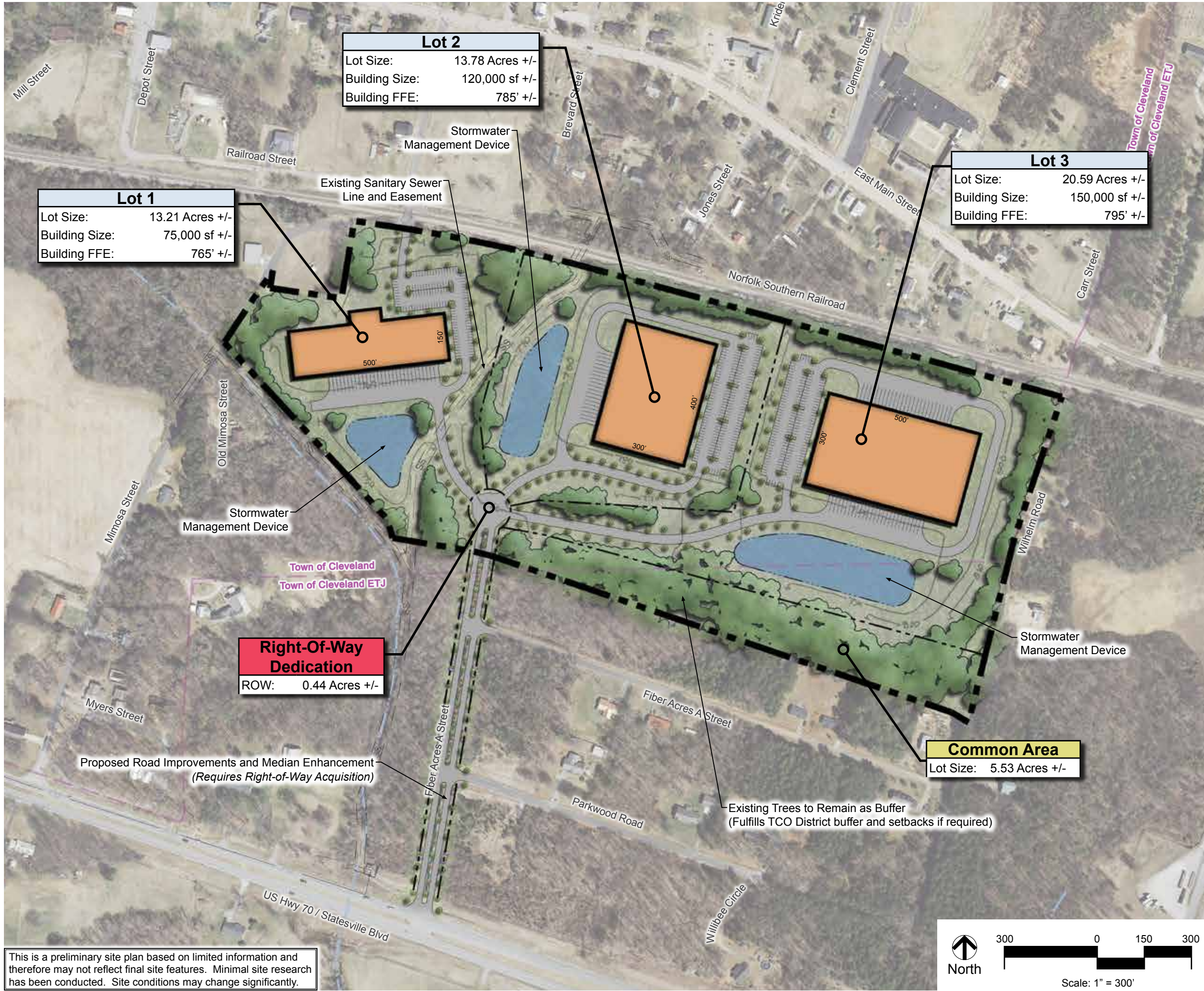
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Concept 2	
Total Lots:	3 Lots
Total Building:	345,000 sf +/-
Total Lot Acreage:	47.58 Ac. +/-
Common Area:	5.53 Ac. +/-
Road Right-of-Way:	0.44 Ac. +/-
Total Acreage:	53.55 Ac. +/-

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