



**Figure 1. Project Site Location**

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

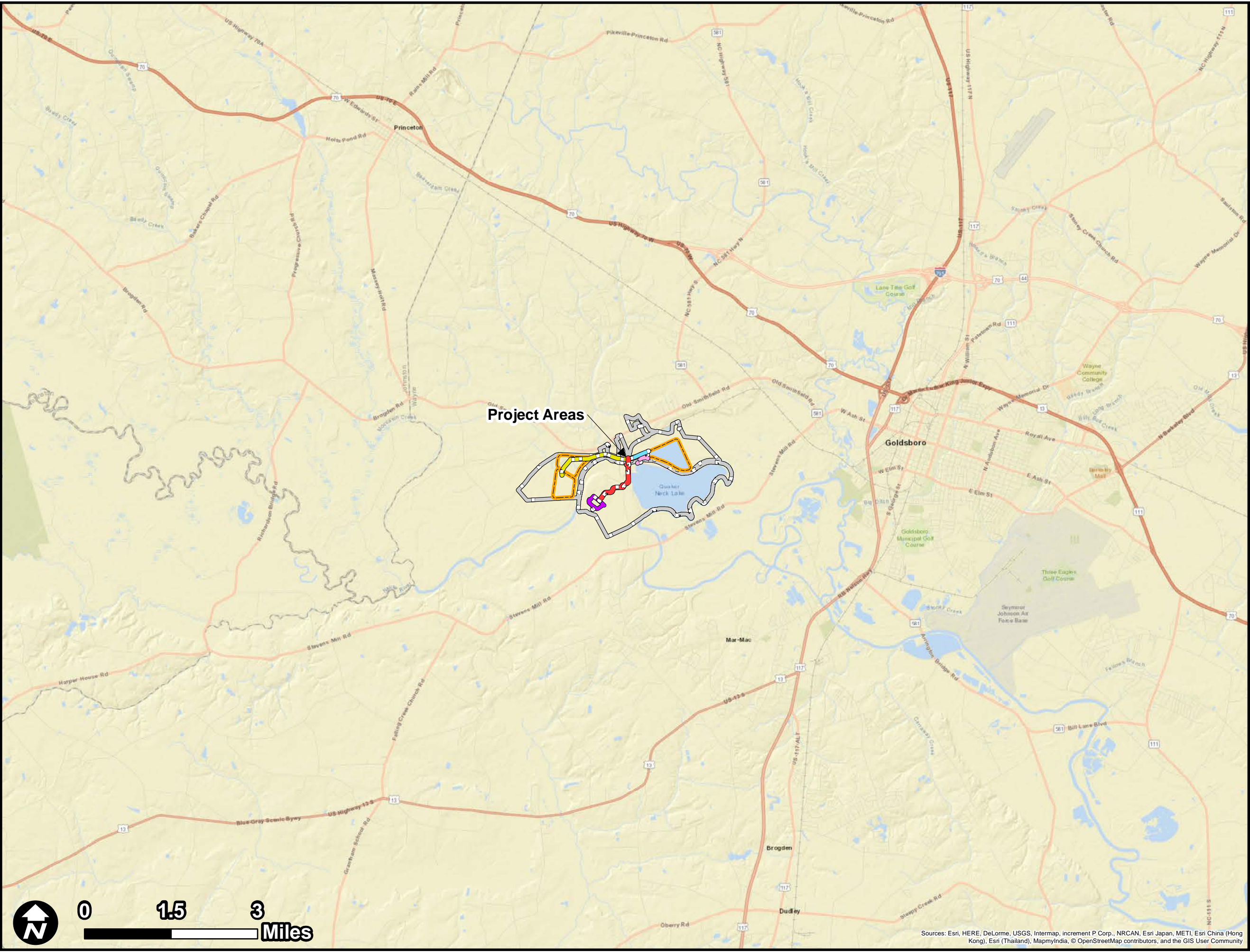
**Legend**

- Haul Road Project Area
- Haul Road Extension Project Area
- Neuse River Water Intake & Powerline Crossing
- Future Haul Road Extension Project Area
- STAR Unit
- Ash Basin
- Site Boundary



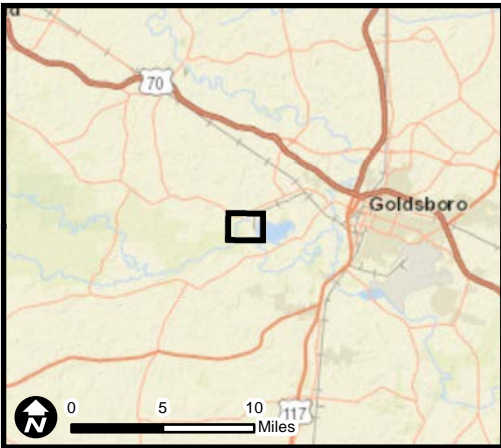
Job No. 7812180038  
Drawn By: JAH  
Reviewed By: ---  
Date: 11/19/2018

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Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





**Figure 2. Site Aerial Map**

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

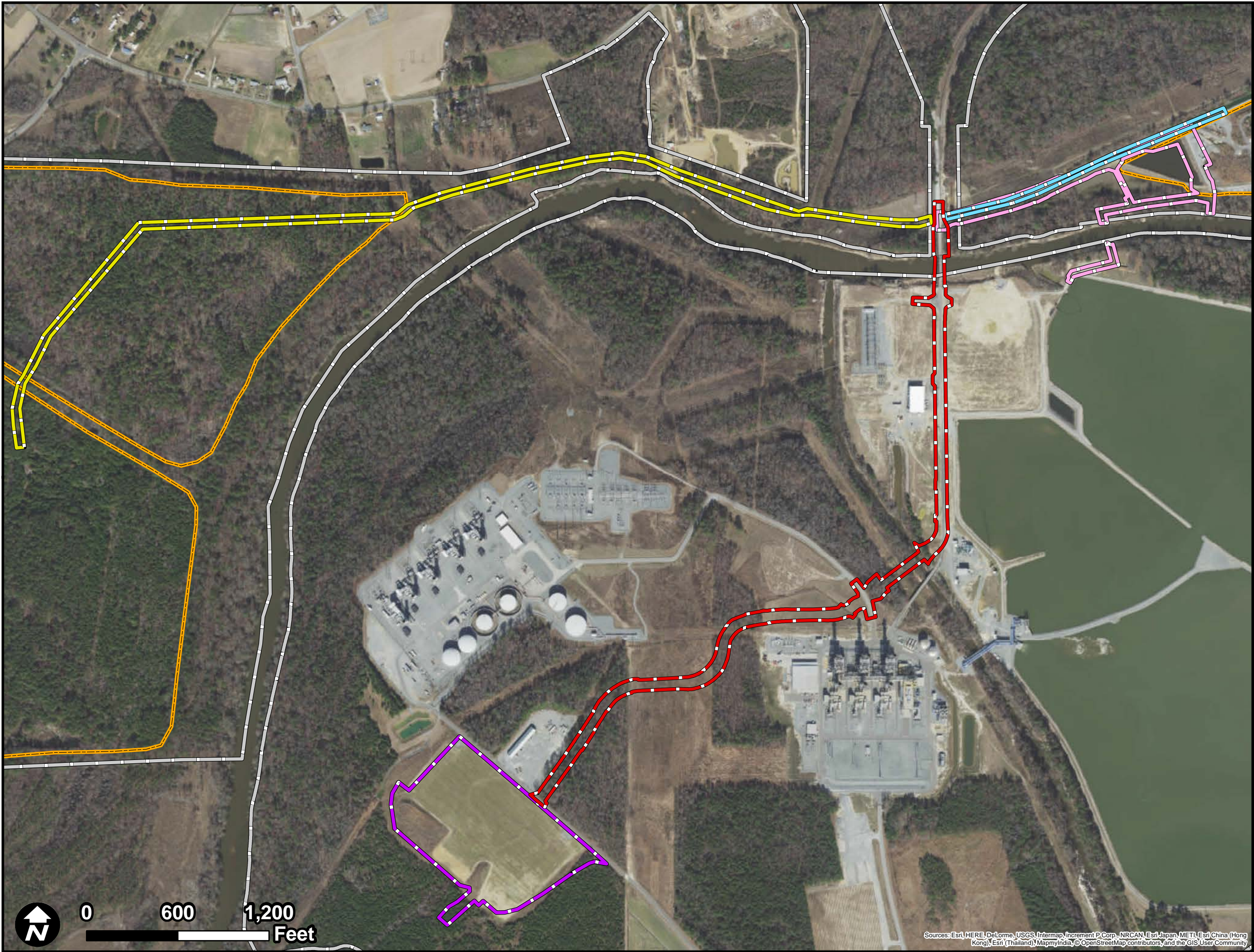
**Legend**

- Haul Road Project Area
- Haul Road Extension Project Area
- Neuse River Water Intake & Powerline Crossing
- Future Haul Road Extension Project Area
- STAR Unit
- Ash Basin
- Site Boundary



Job No. 7812180038  
Drawn By: JAH  
Reviewed By: ---  
Date: 11/19/2018

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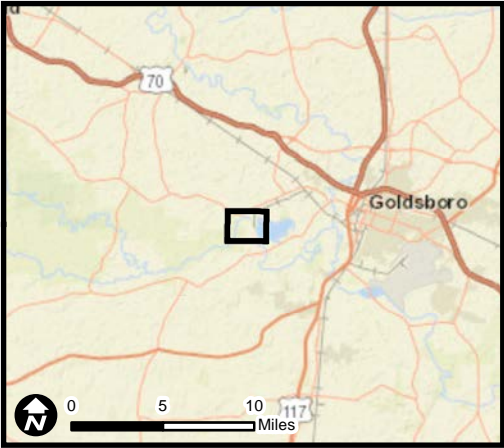


Figure 3. NRCS Soils Map

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

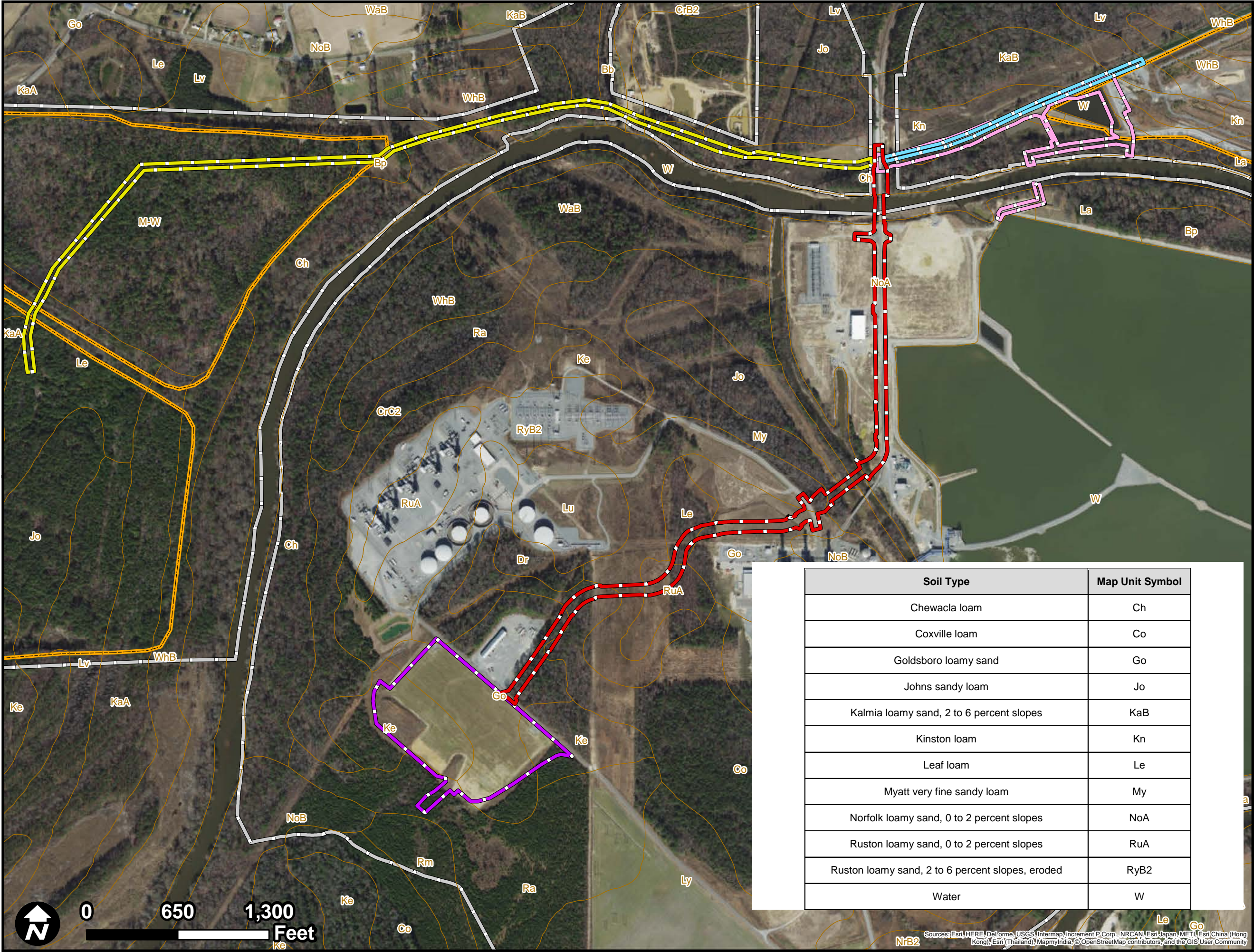
Legend

- Haul Road Project Area
- Haul Road Extension Project Area
- Neuse River Water Intake & Powerline Crossing
- Future Haul Road Extension Project Area
- STAR Unit
- Soils
- Ash Basin
- Site Boundary



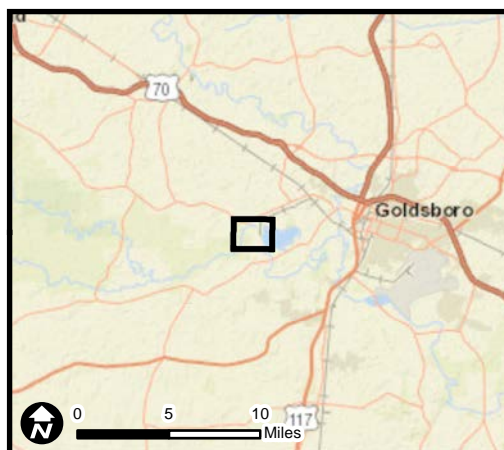
Job No. 7812180038  
Drawn By: JAH  
Reviewed By: ---  
Date: 11/19/2018

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Soil Type	Map Unit Symbol
Chewacla loam	Ch
Coxville loam	Co
Goldsboro loamy sand	Go
Johns sandy loam	Jo
Kalmia loamy sand, 2 to 6 percent slopes	KaB
Kinston loam	Kn
Leaf loam	Le
Myatt very fine sandy loam	My
Norfolk loamy sand, 0 to 2 percent slopes	NoA
Ruston loamy sand, 0 to 2 percent slopes	RuA
Ruston loamy sand, 2 to 6 percent slopes, eroded	RyB2
Water	W














### Figure 4. Jurisdictional Waters

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

### Legend

-  Haul Road Project Area
-  Haul Road Extension Project Area
-  Neuse River Water Intake & Powerline Crossing
-  Future Haul Road Extension Project Area
-  STAR Unit
-  Wetlands
-  Streams
-  Ash Basin
-  Site Boundary



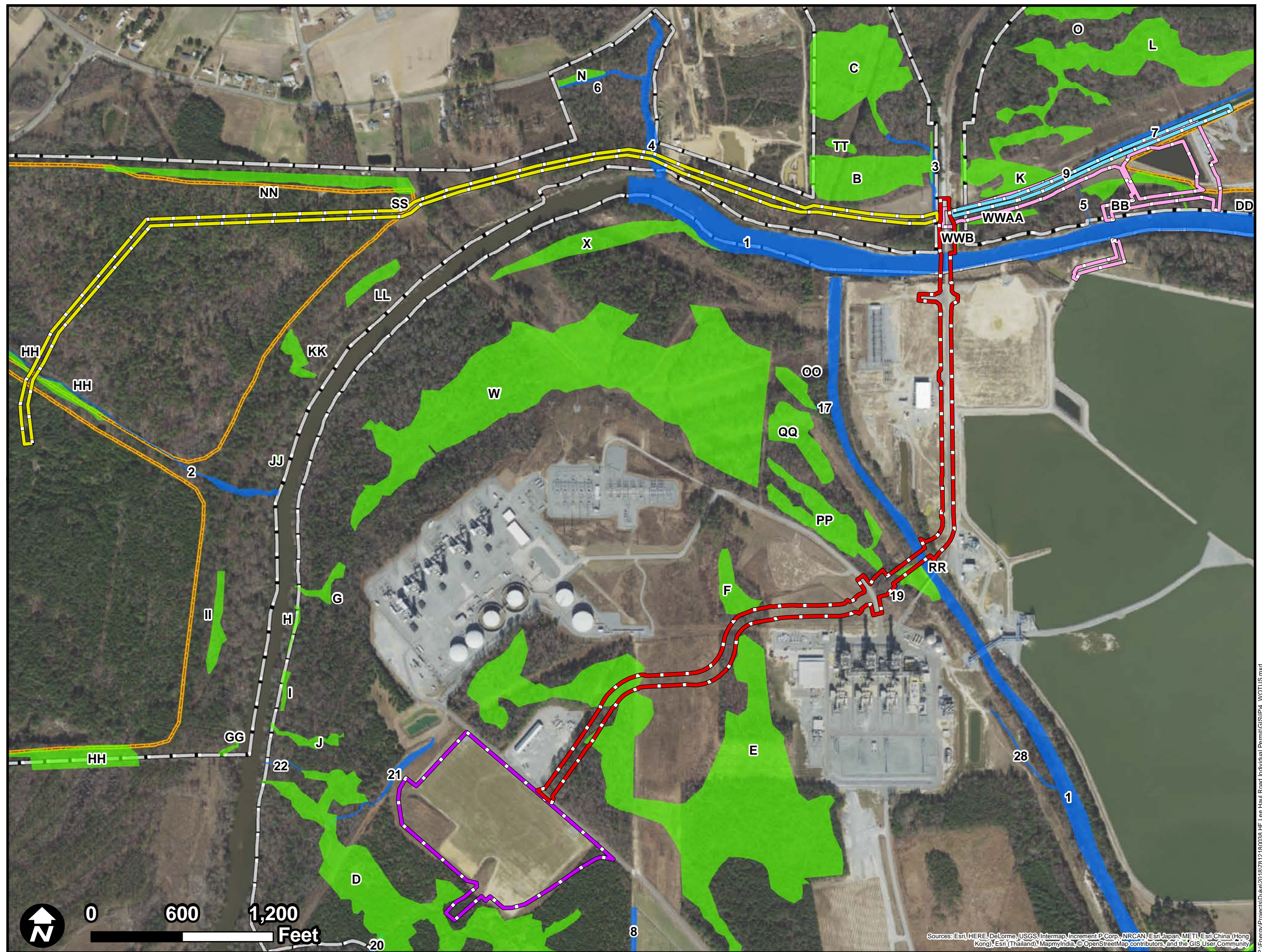
Job No.      7812180038

Drawn By: JAH

Reviewed By: ---

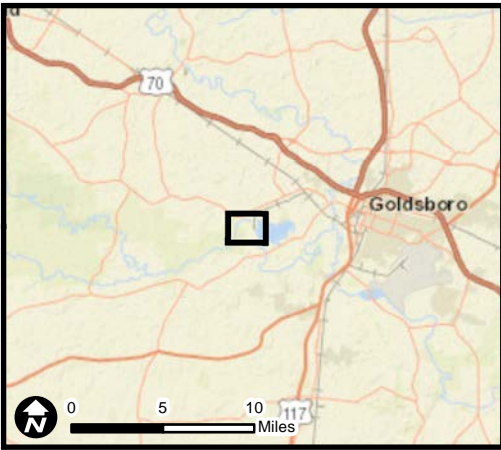
Date: 11/19/2018

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**Figure 5. USGS Topographic Map**

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

**Legend**

- Haul Road Project Area
- Haul Road Extension Project Area
- Neuse River Water Intake & Powerline Crossing
- Future Haul Road Extension Project Area
- STAR Unit
- Ash Basin
- Site Boundary

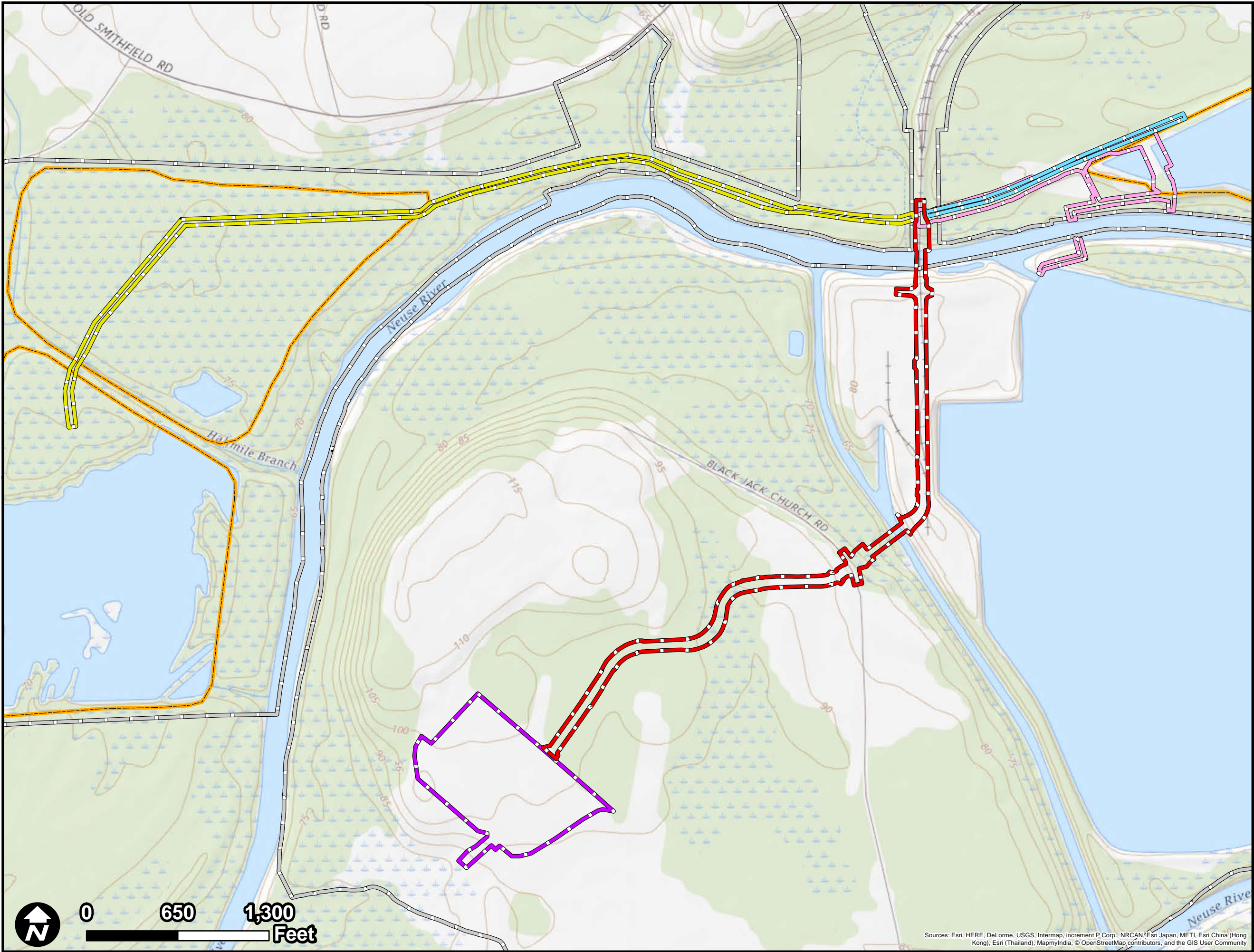

Job No. 7812180038

Drawn By: JAH

Reviewed By: ---

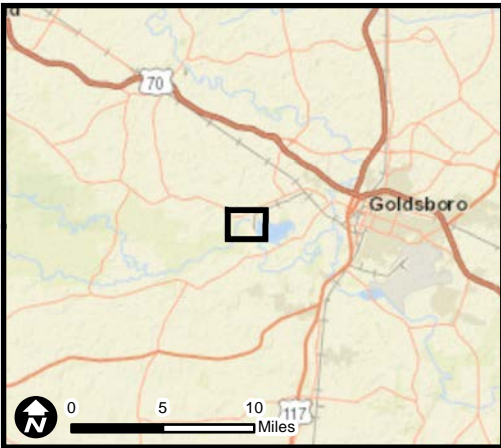
Date: 11/19/2018

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**Figure 6. Floodplain Map**

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

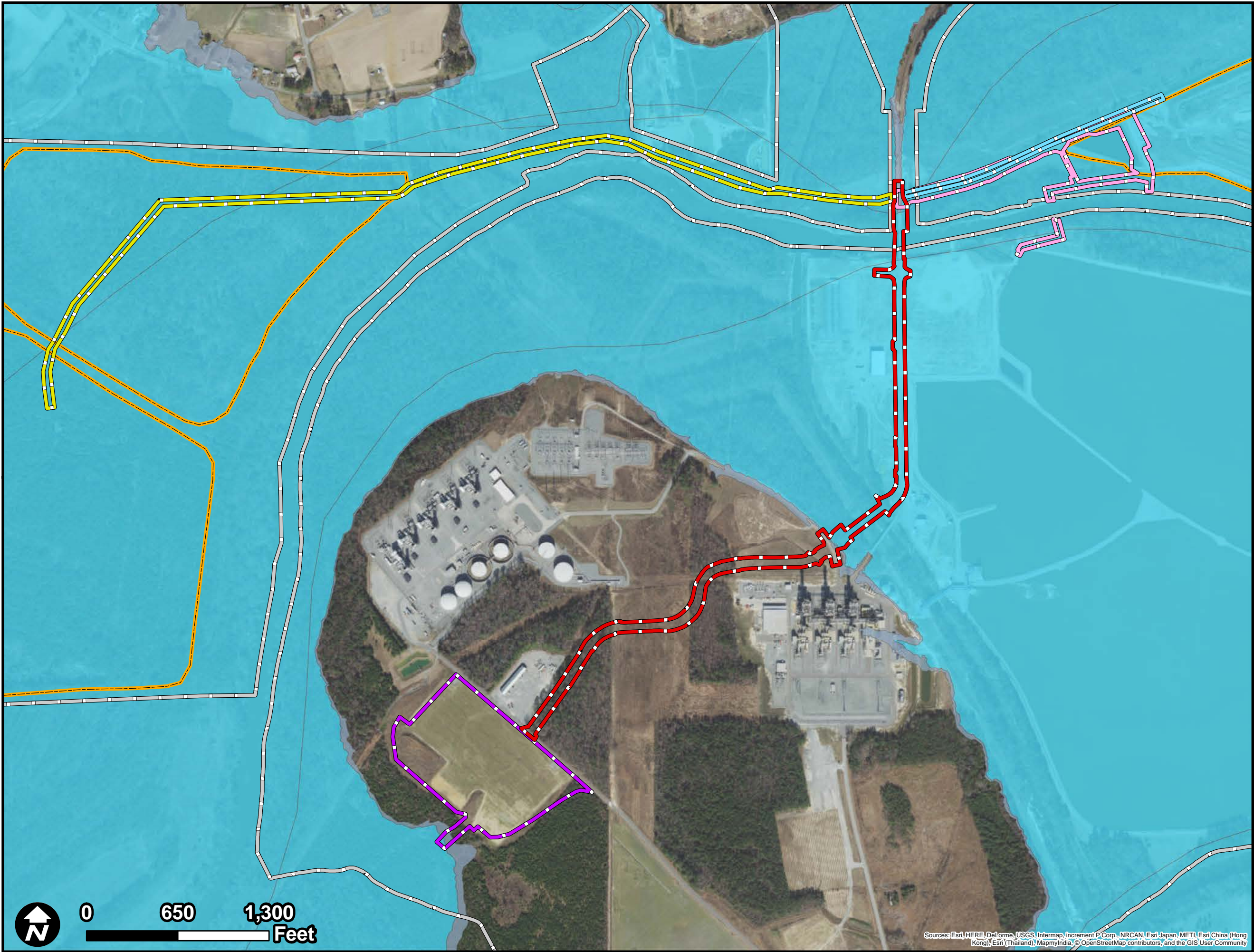
**Legend**

- Haul Road Project Area
- Haul Road Extension Project Area
- Neuse River Water Intake & Powerline Crossing
- Future Haul Road Extension Project Area
- STAR Unit
- Ash Basin
- Site Boundary
- 500 yr
- Zone AE



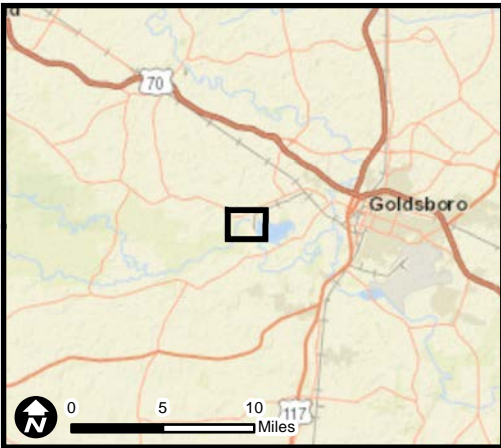
Job No. 7812180038  
Drawn By: JAH  
Reviewed By: ---  
Date: 11/19/2018

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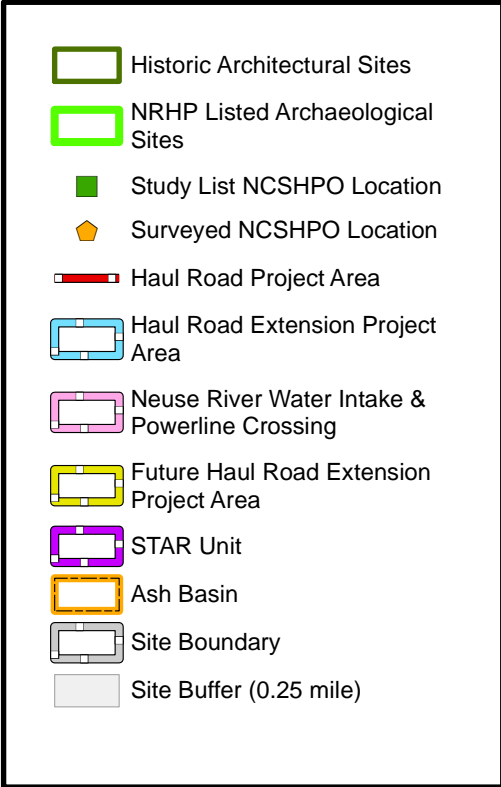
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community





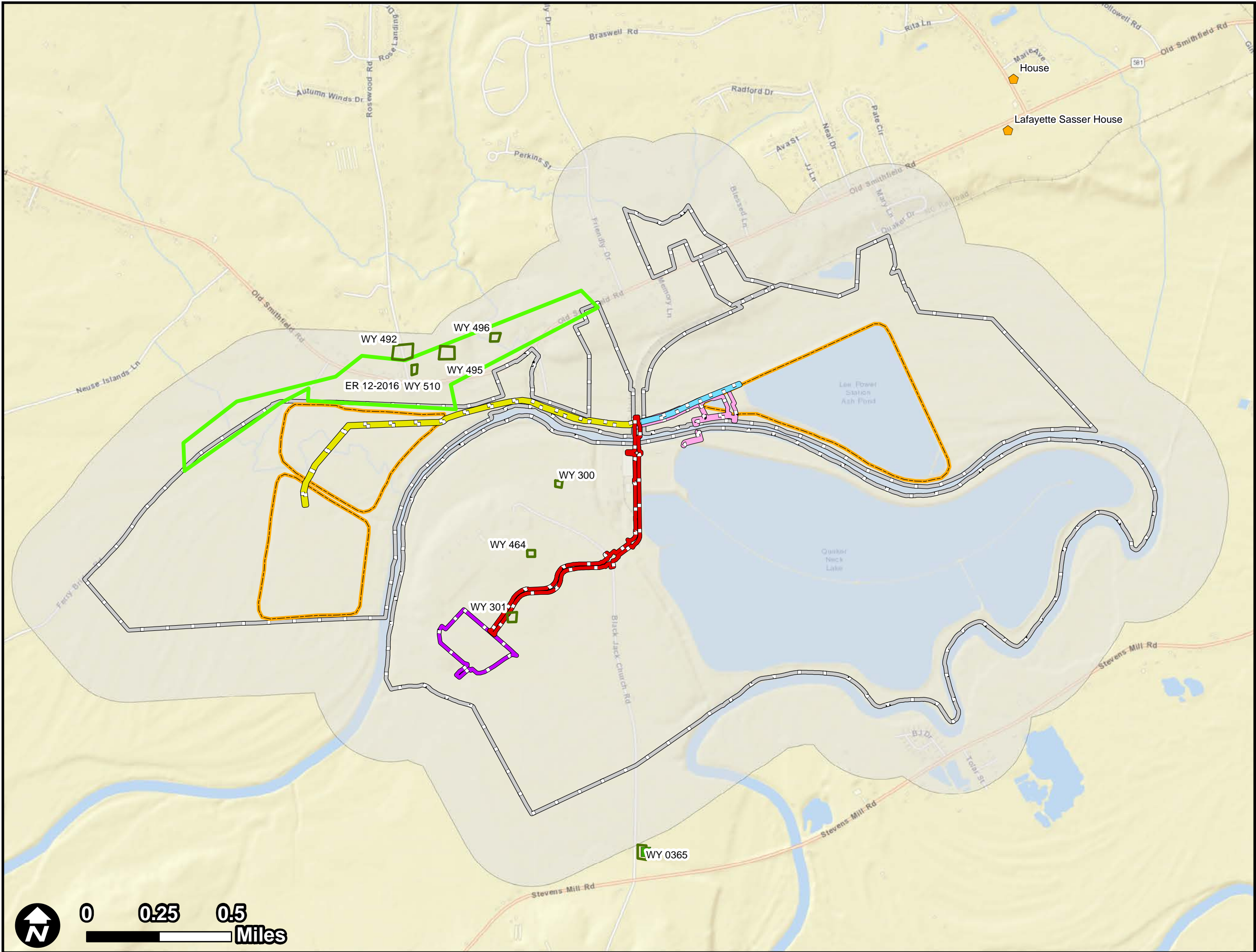
**Figure 7. Cultural Resources Map**

H.F. Lee Energy Complex  
H.F. Lee Haul Road Individual Permit  
Wayne County, NC

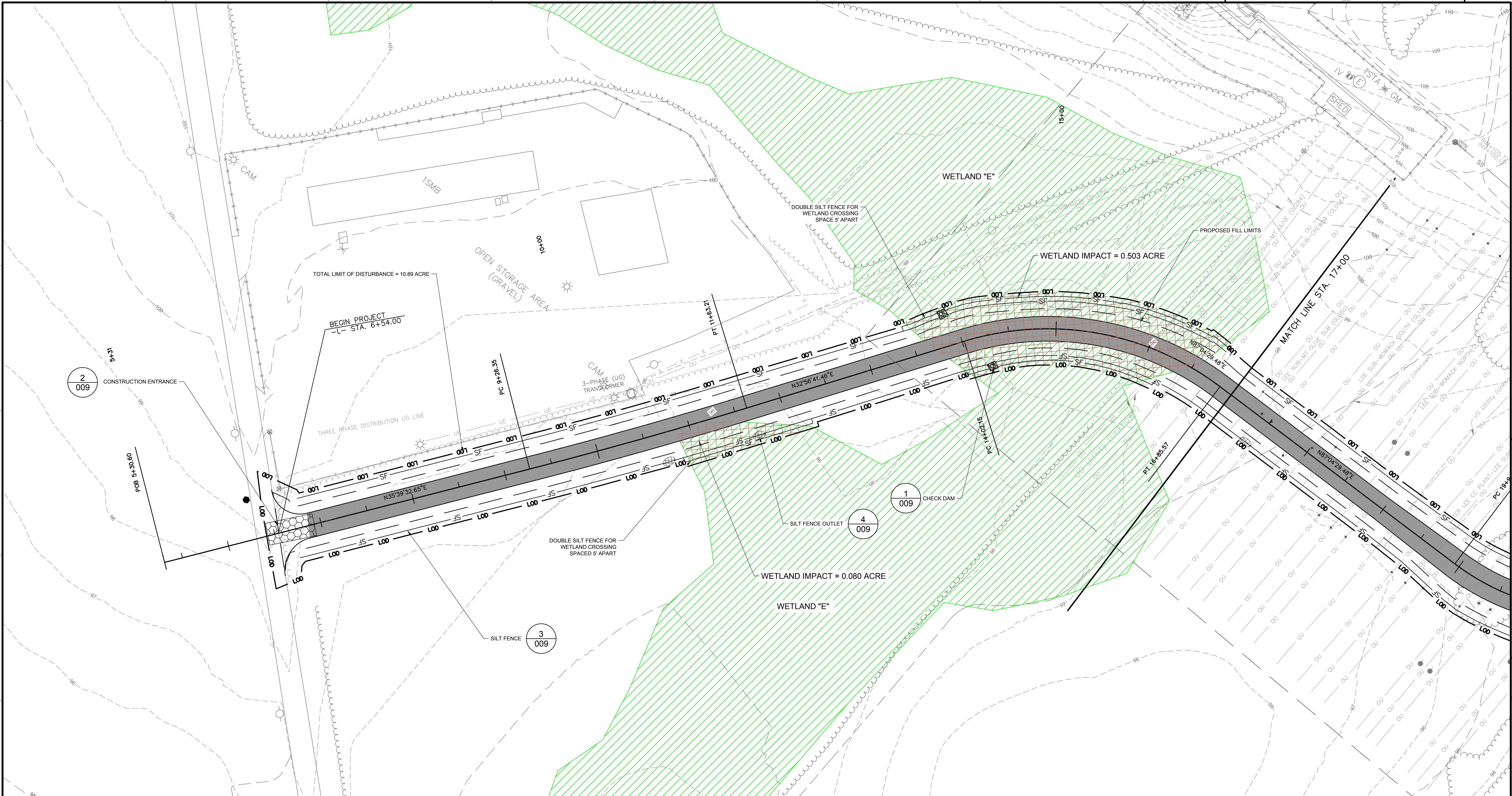


Job No. 7812180038  
Drawn By: JAH  
Reviewed By: ---  
Date: 11/19/2018

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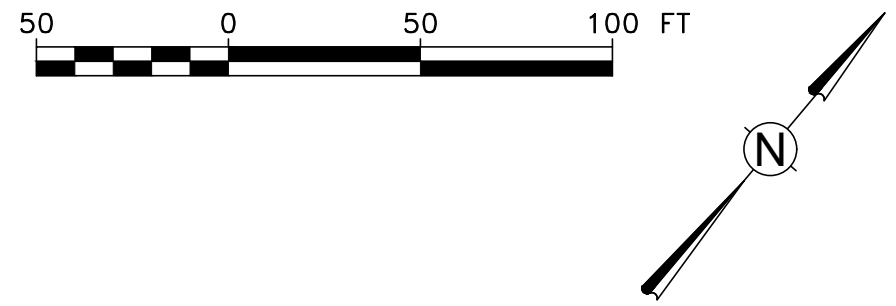


**LEGEND**

--- EXISTING CONTOURS MAJOR	===== PROPOSED HAUL ROAD EOP
--- EXISTING CONTOURS MINOR	----- PROPOSED HAUL ROAD ALIGNMENT
OU --- EXISTING OVER HEAD UTILITIES	----- PROPOSED HAUL ROAD FILL LIMITS
UU --- EXISTING UNDERGROUND LINES	SF --- SILT FENCE
G --- EXISTING GAS LINE	LOO --- LIMITS OF DISTURBANCE
SS --- EXISTING SANITARY SEWER	CONSTRUCTION ENTRANCE
EXISTING BUILDINGS	SILT FENCE OUTLET
EXISTING ROAD	CHECK DAM
X X X --- EXISTING FENCE	WETLAND IMPACTS
--- EXISTING WOODS LINE	INSETS
--- EXISTING GUARD RAIL	
STREAMS	
WETLANDS	

- NOTES:**
1. WETLAND "E" IMPACT = 0.080 ACRE
  2. WETLAND "E" IMPACT = 0.503 ACRE
  3. TOTAL IMPACTED WETLANDS = 0.583 ACRE
  4. IMPACTED WETLANDS WILL BE PERMITTED

**INSET A EROSION AND SEDIMENT CONTROL PLAN**  
SCALE: 1" = 50'



Environment & Infrastructure Solutions  
4021 STIRRUP CREEK DRIVE, SUITE 100 DURHAM  
NC 27703  
TEL: (919) 381-9900  
FAX: (919) 381-9901  
LICENSURE:  
NC ENG: F-1253  
NC GEOLOGY: C-247

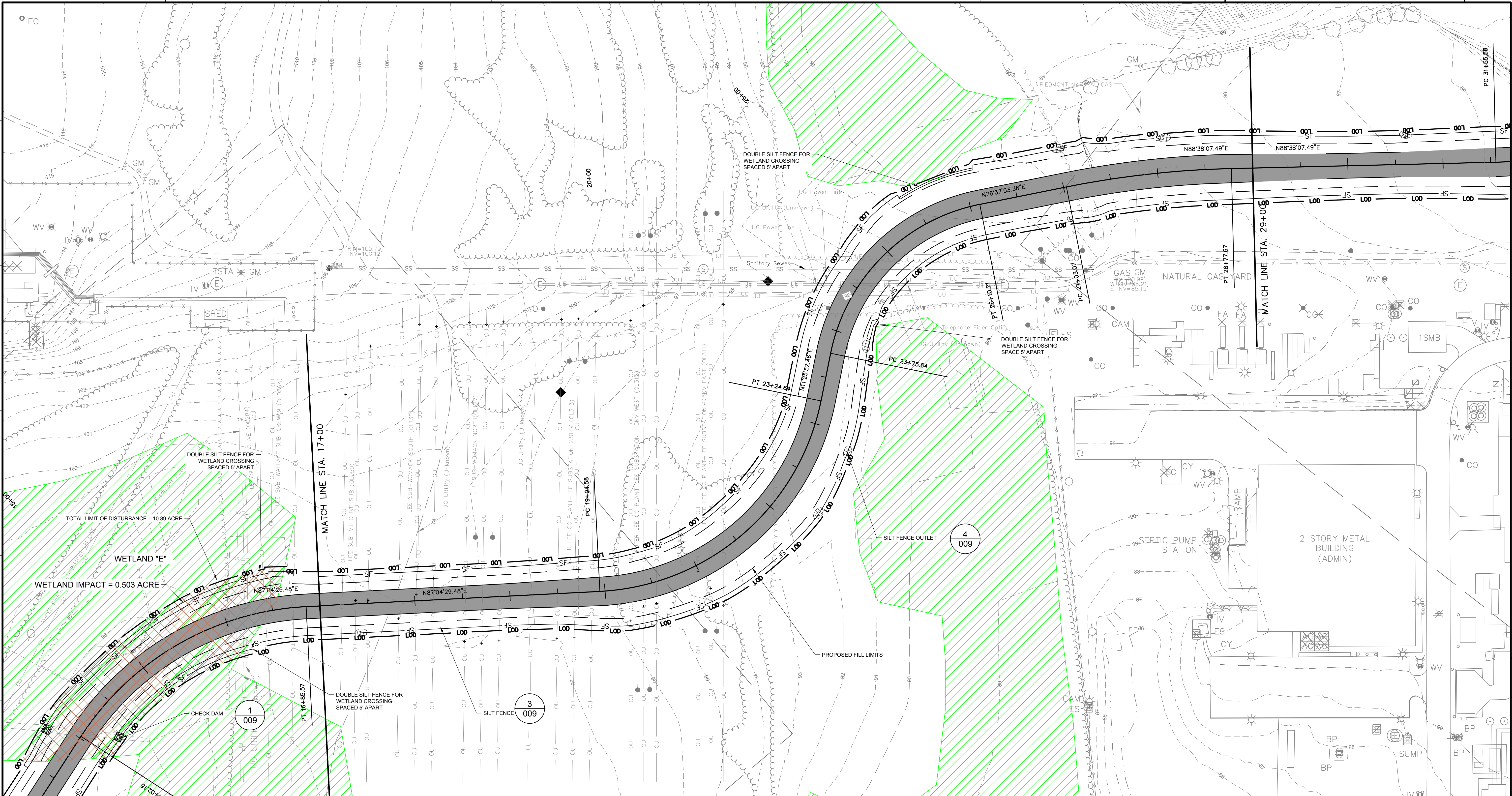
**SEAL**

**TITLE**  
EROSION AND SEDIMENT CONTROL PLAN FOR HF LEE  
HAUL ROAD PROJECT  
HF LEE STEAM STATION  
WAYNE COUNTY, NORTH CAROLINA  
**INSET A EROSION AND SEDIMENT CONTROL PLAN**  
FOR  
**ISSUED FOR REVIEW**

SCALE: AS SHOWN	DES: DS
DWG TYPE: DWG	DFTR: VD
JOB NO: 6468188078	CHKD: DS
DATE: 09/05/2018	ENGR: BCL
APPD: BCL	

FILENAME: HFL_004 - ESC PLAN INSET A.DWG	
DWG SIZE: 22"x34"	DRAWING NO. HFL_004
	REVISION: A





**LEGEND**

---	EXISTING CONTOURS MAJOR	---	PROPOSED HAUL ROAD EOP
---	EXISTING CONTOURS MINOR	---	PROPOSED HAUL ROAD ALIGNMENT
OU	EXISTING OVER HEAD UTILITIES	---	PROPOSED HAUL ROAD FILL LIMITS
UU	EXISTING UNDERGROUND LINES	SF	SILT FENCE
G	EXISTING GAS LINE	LOD	LIMITS OF DISTURBANCE
SS	EXISTING SANITARY SEWER	[Pattern]	CONSTRUCTION ENTRANCE
[Box]	EXISTING BUILDINGS	[Pattern]	SILT FENCE OUTLET
---	EXISTING ROAD	[Pattern]	CHECK DAM
-X-X-X-	EXISTING FENCE	[Pattern]	WETLAND IMPACT
[Wavy]	EXISTING WOODS LINE	---	INSETS
---	EXISTING GUARD RAIL		
[Blue]	STREAMS		
[Green]	WETLANDS		

**INSET B EROSION AND SEDIMENT CONTROL PLAN**  
SCALE: 1" = 50'

50 0 50 100 FT

N

**wood.**  
Environment & Infrastructure Solutions  
4021 STIRRUP CREEK DRIVE, SUITE 100 DURHAM  
NC 27703  
TEL: (919) 381-9900  
FAX: (919) 381-9901  
LICENSURE:  
NC ENG: F-1253  
NC GEOLOGY: C-247

SEAL

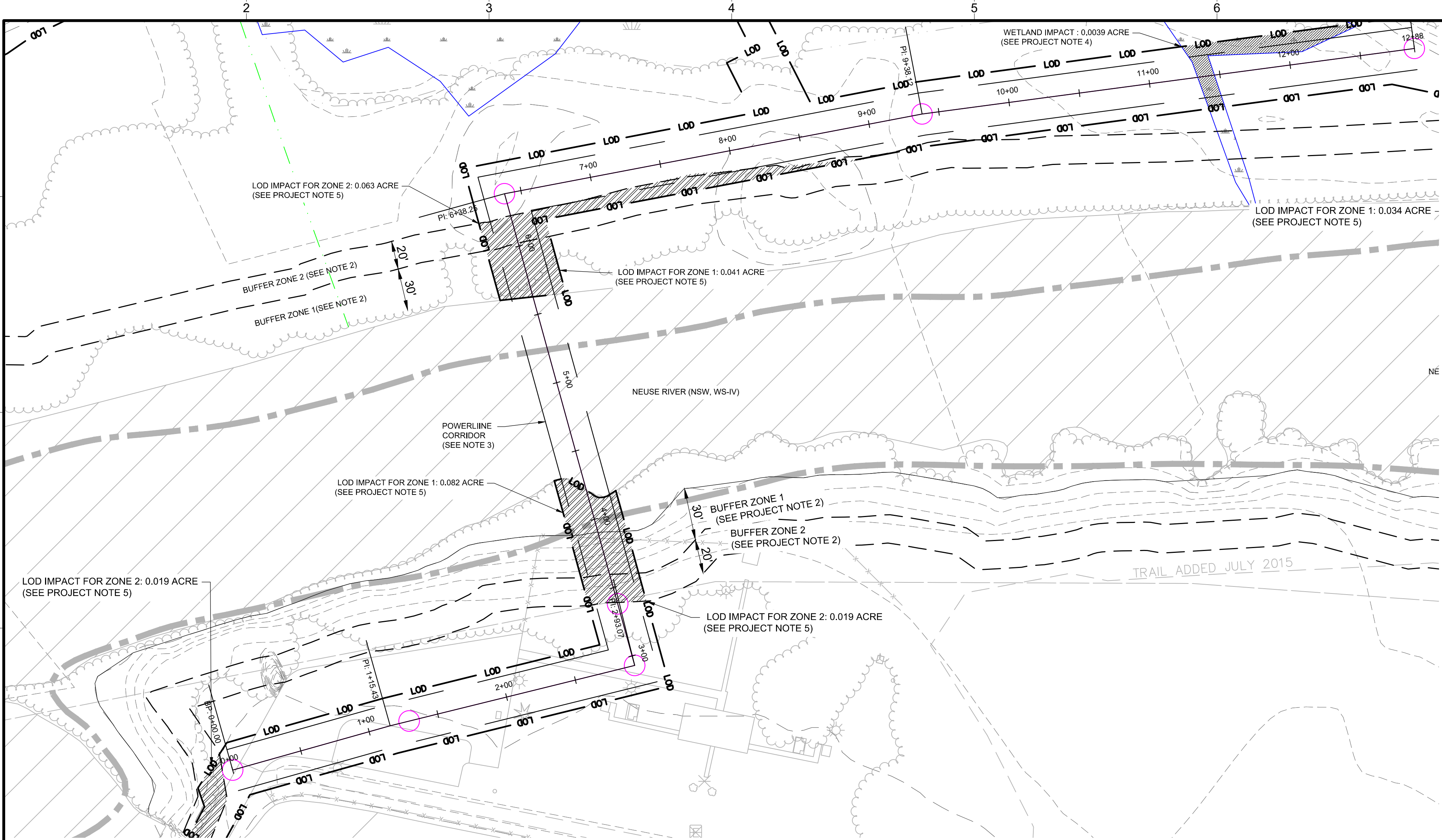
**TITLE**  
EROSION AND SEDIMENT CONTROL PLAN FOR HF LEE  
HAUL ROAD PROJECT  
HF LEE STEAM STATION  
WAYNE COUNTY, NORTH CAROLINA  
**INSET B EROSION AND SEDIMENT CONTROL PLAN**  
FOR  
**ISSUED FOR REVIEW**

SCALE:	AS SHOWN	DES:	DS
DWG TYPE:	DWG	DFTR:	VD
JOB NO:	6468188078	CHKD:	DS
DATE:	09/05/2018	ENGR:	BCL

FILENAME: HFL\_005 - ESC PLAN INSET B.DWG  
DWG SIZE: 22"x34"  
DRAWING NO.: HFL\_005  
REVISION: A

A	09/05/2018	6468188078	ESC PLAN	DS	VD	DS	BCL	BCL	ISSUED FOR REVIEW
REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION





POWERLINE CROSSING PLANVIEW

SCALE: 1"=50'



LEGEND

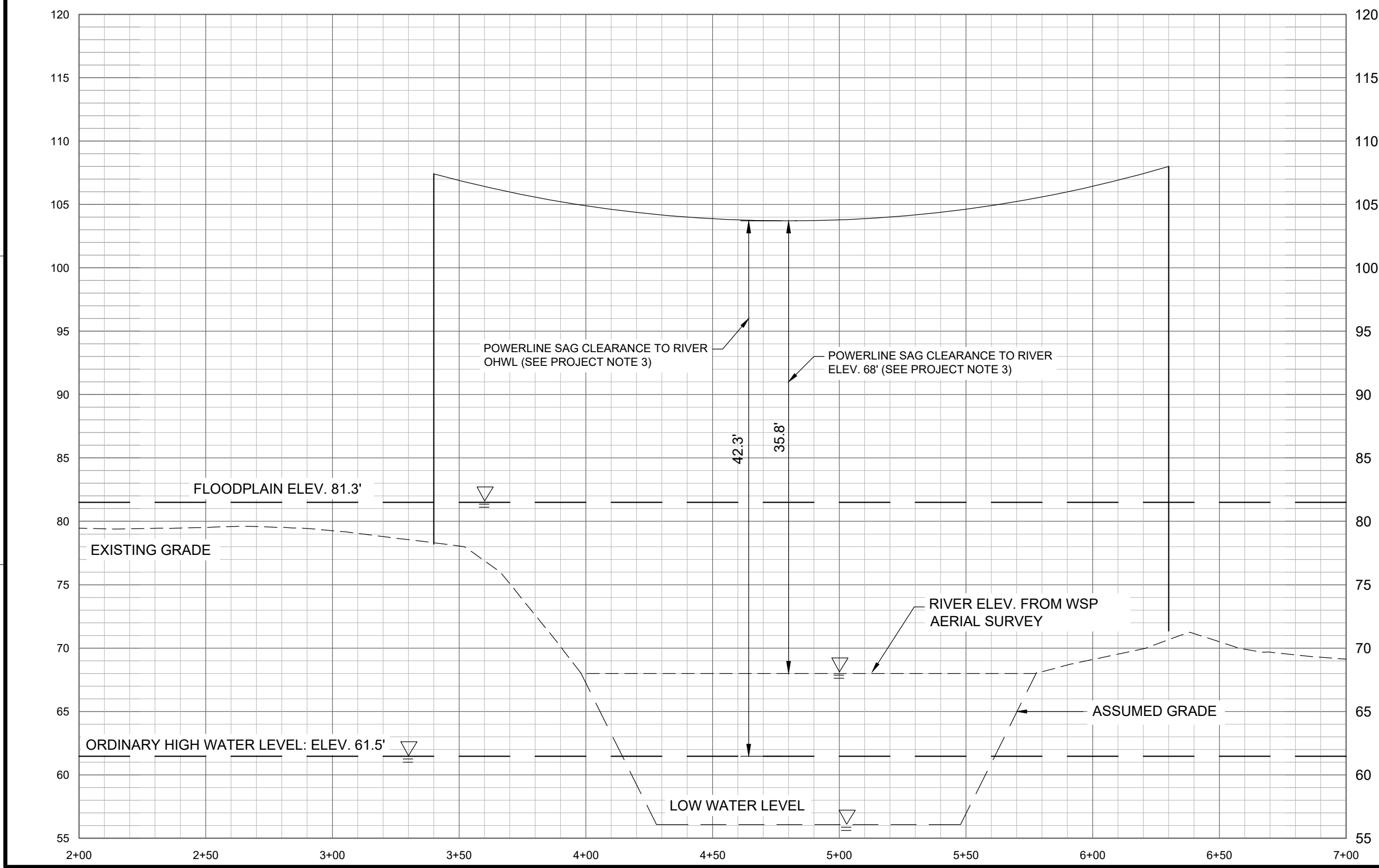
- 100 --- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING GRAVEL ROAD
- EXISTING ROAD
- EXISTING TREE LINE
- EXISTING SITE FENCE
- EXISTING OVERHEAD ELECTRIC LINES
- EXISTING WATER
- EXISTING WETLANDS
- EXISTING UTILITY LIGHT
- EXISTING FIRE HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING ELECTRIC UTILITY POLE
- EXISTING ELECTRIC UTILITY TOWER
- EXISTING MONITORING WELL
- EXISTING WATER UTILITY
- EXISTING UTILITY TELEPHONE
- FLOOD HAZARD LINE
- EXISTING JURISDICTIONAL STREAM
- APPROXIMATE ASH BASIN LIMIT
- APPROXIMATE JURISDICTIONAL DAM LIMIT
- PROPERTY LINE
- LIMIT OF DISTURBANCE (LOD)
- PROPOSED POWERLINE CORRIDOR
- IMPACTED WETLANDS
- IMPACTED BUFFER ZONES

PROJECT NOTES:

1. LIMIT OF DISTURBANCE FROM DRAWING PLAN: 1982 HAUL ROAD IMPROVEMENTS, PIPE REMOVAL, AND POWERLINE CORRIDOR E&S PLAN (DRAWING NUMBERS: HFL\_C901.023.010 - C901.C23.018).
2. NEUSE RIVER BUFFER ZONE 1 EXTENDING 30' FROM RIVER BANK AND NEUSE RIVER BUFFER ZONE 2 EXTENDS 20' FROM BUFFER ZONE 1.
3. POWERLINE CORRIDOR, POLES, AND SAG LINE DESIGNED AND PROVIDED BY DUKE ENERGY DISTRIBUTION (OCTOBER 22, 2018) AND SHOWN FOR ILLUSTRATION PURPOSES ONLY.
4. WETLAND CLEARING IMPACTS INCLUDE THE PERMANENT CONVERSION OF 0.039 ACRE OF FORESTED WETLAND TO EMERGENT WETLAND.
5. IMPACTED BUFFER ZONES IS 0.277 AC.

REFERENCES:

1. EXISTING TOPOGRAPHY AND SURVEY PROVIDED BY WSP DATED JULY 2015.
2. EDGE OF WATER PROVIDED IN SURVEY BY WSP FOR DUKE ENERGY PROGRESS, LLC. TITLED 'AERIAL TOPOGRAPHIC SURVEY HF LEE ENERGY COMPLEX,' REVISION 1, DATED 24 JULY 2015, FILE NAME: 'HF LEE FINAL - REV 07-27-2015.DWG'.
3. EXISTING STREAMS AND WETLANDS PROVIDED BY MCKIM & CREED DATED OCTOBER 9, 2017.
4. LOCATION OF ANY AND ALL UTILITIES SHOWN IS BASED ON PHOTOGRAMMETRIC MAPPING AND IS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. ORDINARY HIGH WATER LEVEL OBSERVED BY WOOD E&S SEPTEMBER 10, 2018.
6. FLOODPLAIN ELEVATION FROM FEMA FLOOD MAP SERVICE CENTER, MAP # 37020256800K EFFECTIVE ON JUNE 20, 2018.



POWERLINE CROSSING PROFILE

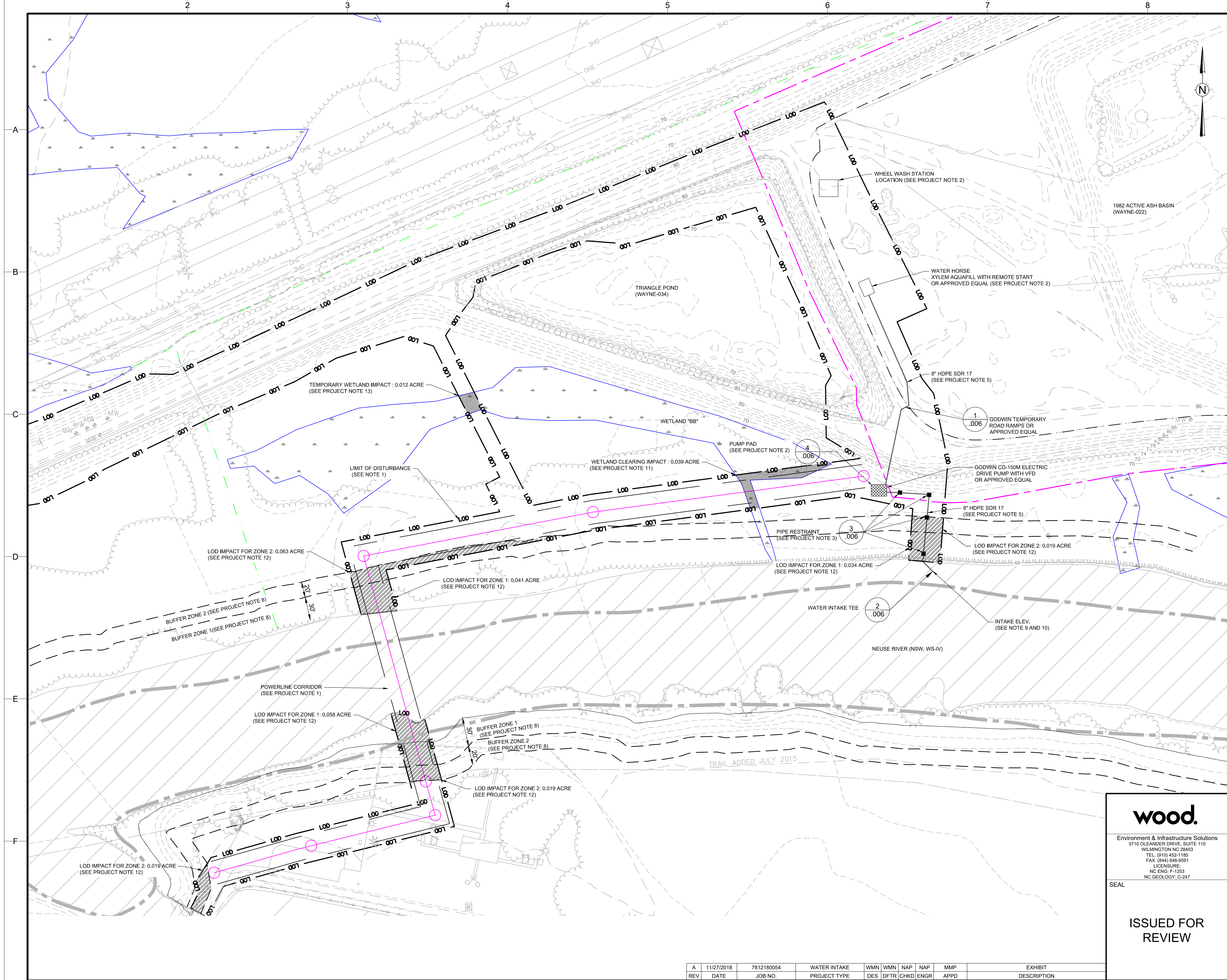
HORIZONTAL SCALE: 1"=40'

VERTICAL SCALE: 1"=8'

A	11/27/2018	7812180054	WATER INTAKE	WMN	WMN	NAP	NAP	MMP	EXHIBIT
REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION

 Environment & Infrastructure Solutions 5710 OLEANDER DRIVE, SUITE 110 WILMINGTON NC 28403 TEL: (910) 452-1185 FAX: (844) 648-9591 LICENSURE: NC ENG: F-1253 NC GEOLOGY: C-247	TITLE NEUSE RIVER WATER INTAKE AND POWERLINE CROSSING FOR DUST CONTROL FACILITIES HF LEE ENERGY COMPLEX		
	FOR POWERLINE CROSSING PLAN - EXHIBIT		
	EXHIBIT		
	SEAL	ISSUED FOR REVIEW	ANSI D 22"x34"
FILENAME:		SCALE: AS SHOWN	DES: WMN
DWG SIZE		DWG TYPE: DWG	DFTR: WMN
DRAWING NO.		JOB NO: 7812180054	CHKD: NAP
REVISION		DATE: 11/27/2018	ENGR: NAP
APPD: MMP			





- LEGEND**
- 100--- EXISTING MAJOR CONTOURS
  - EXISTING MINOR CONTOURS
  - == EXISTING GRAVEL ROAD
  - == EXISTING ROAD
  - - - - - EXISTING TREE LINE
  - x - x - x - EXISTING SITE FENCE
  - - - - - EXISTING OVERHEAD ELECTRIC LINES
  - EXISTING WATER
  - EXISTING WETLANDS
  - EXISTING UTILITY LIGHT
  - EXISTING FIRE HYDRANT
  - EXISTING SEWER MANHOLE
  - EXISTING ELECTRIC UTILITY POLE
  - EXISTING ELECTRIC UTILITY TOWER
  - EXISTING MONITORING WELL
  - EXISTING WATER UTILITY
  - EXISTING UTILITY TELEPHONE
  - FLOOD HAZARD LINE
  - EXISTING JURISDICTIONAL STREAM
  - APPROXIMATE ASH BASIN LIMIT
  - APPROXIMATE JURISDICTIONAL DAM LIMIT
  - PROPERTY LINE
  - LIMIT OF DISTURBANCE (LOD)
  - PROPOSED POWERLINE CORRIDOR
  - IMPACTED WETLANDS
  - IMPACTED BUFFER ZONES

- PROJECT NOTES:**
- LIMIT OF DISTURBANCE AND POWERLINE CORRIDOR FROM DRAWING PLAN: 1982 HAUL ROAD IMPROVEMENTS, PIPE REMOVAL, AND POWERLINE CORRIDOR E&S PLAN (DRAWING NUMBERS: HFL\_C901.023.010 - C901.023.018).
  - LOCATION OF PUMP PAD, WHEEL WASH STATION AND WATER HORSE LOCATIONS ARE SUBJECT TO CHANGE AT OWNER'S DISCRETION.
  - PIPE RESTRAINT OPTIONS A OR B SHALL BE INSTALLED TO RESTRAIN PIPE MOVEMENT DUE TO FLOODING AND IS SUBJECT TO CHANGE AT OWNER'S DISCRETION.
  - INTAKE SCREEN TO BE DETERMINED.
  - PUMP LINE SHALL HAVE DRAIN VALVE AT BOTTOM FLANGE TO DRAIN IN FREEZING WEATHER.
  - PUMP LINE SHALL HAVE 8" TO 8" REDUCER TO CONNECT WITH PUMP.
  - PUMP TRAILER SHALL BE STAGED ON THE PUMP LOCATION PAD WITH THE PUMP MOUNTED TO TRAILER FOR EMERGENCY MOBILITY.
  - NEUSE RIVER BUFFER ZONE 1 EXTENDS 30' FROM RIVER BANK AND NEUSE RIVER BUFFER ZONE 2 EXTENDS 20' FROM BUFFER ZONE 1.
  - WARNING BUOYS OR SIGNALS SHALL BE PLACED AT INTAKE LOCATION.
  - FLOATING INTAKE WILL FLUCTUATE WITH NEUSE RIVER LEVELS.
  - WETLAND CLEARING IMPACTS INCLUDE THE PERMANENT CONVERSION OF 0.039 ACRE OF FORESTED WETLAND TO EMERGENT WETLAND.
  - IMPACTED BUFFER ZONES IS 0.277 AC.
  - TEMPORARY WETLAND IMPACTS OF 0.012 ACRE WILL INCLUDE THE PLACEMENT OF TEMPORARY TIMBER MATTING TO PROVIDE ACCESS FOR TREE REMOVAL.

- REFERENCES:**
- EXISTING TOPOGRAPHY AND SURVEY PROVIDED BY WSP DATED JULY 2015.
  - EDGE OF WATER PROVIDED IN SURVEY BY WSP FOR DUKE ENERGY PROGRESS, LLC, TITLED "AERIAL TOPOGRAPHIC SURVEY HF LEE ENERGY COMPLEX," REVISION 1, DATED 24 JULY 2015, FILE NAME: "HF LEE FINAL - REV 07-27-2015.DWG".
  - EXISTING STREAMS AND WETLANDS PROVIDED BY MCKIM & CREED DATED OCTOBER 9, 2017.
  - LOCATION OF ANY AND ALL UTILITIES SHOWN IS BASED ON PHOTOGRAMMETRIC MAPPING AND IS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

**PROPOSED WATER INTAKE**  
SCALE: 1" = 60'



Environment & Infrastructure Solutions  
5710 OLEANDER DRIVE, SUITE 110  
WILMINGTON NC 28403  
TEL: (910) 452-1185  
FAX: (844) 648-9591  
LICENSURE:  
NC ENG: F-1253  
NC GEOLOGY: C-247

**ISSUED FOR REVIEW**

TITLE <b>NEUSE RIVER WATER INTAKE AND POWERLINE CROSSING FOR DUST CONTROL FACILITIES HF LEE ENERGY COMPLEX</b>			
EXHIBIT			
FOR EXHIBIT			
SCALE: AS SHOWN	DES: WMN		
DWG TYPE: DWG	DFTR: WMN		
JOB NO: 7812180054	CHKD: NAP		
DATE: 11/27/2018	ENGR: NAP		
FILENAME:	APPD: MMP		
DWG SIZE ANSI D 22"x34"	DRAWING NO.		REVISION
<b>EXHIBIT</b>			