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Director of Finance and
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AGENDA
NELSON COUNTY BOARD OF SUPERVISORS
AND THE AMHERST COUNTY BOARD OF SUPERVISORS
FEBRUARY 21, 2023
THE JOINT MEETING CONVENES AT 4:00 P.M. IN THE AMHERST COUNTY ADMINISTRATION BUILDING IN AMHERST, VA

I. CALL TO ORDER

II. APPROVAL OF AGENDA

III. DISCUSSION OF THE FOLLOWING TOPICS:

A. Amherst Nelson Ag Complex (ANAC) Presentation – Architectural Partners
B. Chris Bryant – ANAC Advocate

IV. ADJOURNMENT

AMHERST COUNTY
BOARD OF SUPERVISORS
NELSON COUNTY
BOARD OF SUPERVISORS

Board of Supervisors

Tom Martin, Chair
District 1
L.J. Ayers III, Vice-Chair
District 3
Claudia Tucker, Supervisor
District 2
Drew Wade, Supervisor
District 5
David W. Pugh, Jr., Supervisor
District 4

AGENDA

February 21, 2023

Meeting Convened - 4:00 PM

County Administrator
Jeremy S. Bryant, Interim

County Attorney
Mark Popovich

I. Call to Order

II. Approval of Agenda

III. Discussion of the following topics:

A. Amherst Nelson Ag Complex (ANAC) Presentation - Architectural Partners

B. Chris Bryant - ANAC Advocate

IV. Adjournment

Agenda Item III.A.

Meeting Date: February 21, 2023

Department: Administration

Topic: **Amherst Nelson Ag Complex (ANAC) Presentation - Architectural Partners**

Board Action: The Boards are receiving a presentation from Mark Smith of Architectural Partners.

Attachment:
1. ANAC Site Feasibility Study
2. IV E (1) Ag Complex Report Presentation
3. IV E (2) Ag Executive Summary

Summary: The Amherst County Board of Supervisors and the Nelson County Board of Supervisors are being presented with information from Mark Smith of Architectural Partners regarding a proposed shared Agriculture Complex between the two counties.

Recommended Motion: None - For Information Only.

Comprehensive Plan Impact: This topic is not addressed in the Comprehensive Plan.

August 1, 2022

PRELIMINARY ARCHITECTURAL FEASBILITY REPORT

AMHERST-NELSON AGRICULTURAL COMPLEX (ANAC)

HURT & PROFFITT
Inspired | Responsive | Trusted

ARCHITECTURAL PARTNERS
be creative ▶ work together

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ANAC Site Comparison to Olde Dominion Programming Site

Programming Block Diagram

Rendering of Proposed Agricultural Center

ANAC Conceptual Site Plan

Figure A.1: Agricultural Center Concept Plan

Figure A.2: Agricultural Center Elevations

Figure B.1: Cattle Working Building Floor Plan

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Land Cost & Availability

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Site Plan Layouts

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Stormwater Management pg. 71

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Water Infrastructure

Wastewater Infrastructure

Natural Gas Infrastructure

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General Traffic Conditions

Existing Roadway Network

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1

Introduction

Amherst Nelson Agricultural Complex (ANAC)

INTRODUCTION & PLANNING APPROACH

To the Amherst County and Nelson County stakeholders:

In October of 2021, Architectural Partners (AP) with their consultant, Hurt & Proffitt (H&P), were commissioned to prepare a Preliminary Architectural Feasibility Report (PAFR), which will assist Amherst & Nelson Counties (the Counties) in determining the feasibility of developing the proposed Amherst/Nelson Agricultural Complex (ANAC). AP's contract is with Nelson County.

The site as proposed by the Counties, used in this Report, is Parcel ID: 68 A 1, 41 (~300 acres) on US Route 29 (North Amherst Highway).

Aerial image showing site boundary

Looking North at former farmhouse site from entrance

Amherst and Nelson Counties have a rich agricultural heritage that dates to the earliest days of Virginia's history. Even today, within these counties, you will find family-owned farms nestled between the rolling hills, livestock feeding in open pastures, and picturesque views from the Blue Ridge Mountains.

An agricultural center is a staple for many counties with agricultural histories, such as Amherst & Nelson. An agricultural center may provide many valuable services to the community it serves, including serving as a comprehensive location for patrons to gather for agricultural related events or business. The center may also provide outreach programs for educating those within the community about the agricultural practices of today, training services in various agricultural related fields, administrative space for livestock shows, agricultural related entities, and promote agrotourism within the community in the form of entertainment or other recreational activities. Activities could include equestrian sports, weddings, corporate events, hiking, camping, and other outdoor activities.

Looking south toward pond from farmhouse site.

Cattle barn (N-E of farmhouse site)

Farmhouse site (house has been demolished). Looking North from entrance.

Silo foundation

Barn. (Looking N-W from farmhouse site)

AP / H&P prepared a first task preliminary feasibility assessment of the site and analyzed the variables affecting the development of this site for the proposed agricultural complex. All programming of buildings and structures was obtained from data provided by Amherst County and supplied to AP in the form of PowerPoint digital files with some references to the Olde Dominion Agricultural Complex https://www.oldedominionagriculturecomplex.com/ on Rt 29 in Pittsylvania County (Danville, VA area). See Tab 4 & 5.

Olde Dominion Agricultural Complex

This information was used to develop programming diagrams, civil plans, building plans, utility study, and construction estimates for an 80% design submission (dated 5-5-2022) for the Counties' review and comment. The Counties' 80% review comments and A&E's responses are included in this report under TAB 6.

Presented in this submittal was an interpretation of the data provided. AP proceeded to create programming documents comparing the Olde Dominion AG Complex to the proposed ANAC. Comparisons included site/land size, building sizes, building and structure uses.

The following are the major spaces identified in the program:

Interior Spaces

- Arena
- Conference Rooms
- Classrooms
- Offices
- Farmers Market
- Kitchen
- Cannery
- Meat Processing
- Training Areas
- Warehouses
- Greenhouse
- Horse Stalls
- Cattle Working building
- Cabins

Exterior Spaces

- Environmental Education
  - Solar
  - Compost
  - Viticulture
  - Oenology
- Cabin sites
- RV sites
- Primitive Camping sites
- Trails
  - Hiking
  - ATV
  - Equestrian
- Fairgrounds/RV/sites
- Equipment Training
- Livestock Paddocks

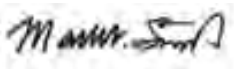
The following variables have been considered by the A&E:

- Land availability and cost
- Overall site development plan for the main buildings desired in the program and other associated structures
- Maintain natural land features and landform in placement of buildings and roadways.
- Building and structure locations related to use and operations
- Attempting to conserve any existing structures such as barns, cabin, silo base, etc.
- Off-site infrastructure costs, including utilities, access management, and roadway improvements
- On-site infrastructure costs, including utilities, access drives, parking areas, site grading, and stormwater management
- Environmental impacts
- Costs associated with construction

AP / H&P has prepared this report to allow Amherst and Nelson County officials, stakeholders, and citizens to make informed decisions regarding the feasibility and future development of the proposed agricultural complex project. The results are presented within the following Executive Summary and supporting sections of this report.

AP/H&P are submitting the PAFR under good faith, as a completed document meeting the contract requirements as we have presented and been commission to provide to the Counties of Amherst and Nelson.

Submitted by,



Mark W. Smith, Senior Architect

EXECUTIVE SUMMARY

Based on the program data from Counties, data, site observations, and resulting planning layout, the Architect can recommend that the site provided is "physically" suitable in size and topography for the use as an agricultural complex.

The Architect also realizes, as with any development, there are other variables that determine if a project is feasible. Some variables relate to financial, public acceptance, management/operations, government/agency approvals, and mutual collaboration of parties involved. AP is limited to the feasibility of the physical aspects and has assigned construction costs to these tangible parts. Other soft costs, financial, operational costs and future maintenance costs should be determined by the Counties.

AP also recommends that if the Counties make a purchase offer on the land, that purchase is contingent upon further domestic water quantity/quality confirmation and soils testing for sanitary use. AP and H&P have provided the Counties with a fee proposal for the soil exploration/testing/investigation and engineering design (currently has not been accepted).

Various components were analyzed and discussed in this report. While some factors such as total cost may be important, other factors such as environmental impacts and feasibility of utility services should also be considered. The findings of this PAFR are summarized below.

LAND

It is understood, at the time of this report, that the property is available for purchase & the current owner is receptive to the idea of selling the property to Amherst/Nelson Counties for construction of the agricultural complex. The property has an assessed value of $953,300, but the actual purchase price will need to be negotiated if the Counties decide to move forward.

SITE LAYOUT

Design considerations for this site include:

- 100,000 SF Paddocks, Arena, Conference Room, Kitchen, and Office
- 24,000 SF Equestrian Center & Cattle Barn
- 6,000 SF Farmers Market & Warehouse
- 15 Acre Fairgrounds
- 10 Acre CDL with 20,000 SF Equipment Training Area
- 6 Acre Environmental and Greenhouse Area
- 1.5 Acre Pond
- 16 Cabin Campground Area
- Riding / ATV Trail Traversing the Property
- Approximately 2,100 total parking spaces
- Alternative Item #1 (Camper Area – Fairgrounds)

The majority of the previously listed entities and required access roads were located within the existing agricultural fields. This planning located the features along the natural high points of the property and reduced the need for mass clearing/grubbing within the site.

EARTHWORK

The site earthwork quantities were analyzed at each site with the aforementioned design elements, and it was calculated that the preliminary earthworks volumes can be balanced onsite. The preliminary earthwork analysis completed in SITEOPS (Version 10.9.1.3) resulted in approximately 633,000 cubic yards of onsite cut & onsite fill required to grade the development.

ENVIRONMENTAL IMPACTS

Based on site observations and conceptual design plans, some stream and wetland impacts may be unavoidable from the proposed project. If impacts can be minimized though, CWA permitting through the USACE NWP process should be feasible. The highest-quality habitat is present in the stream valley in the northern portion of the study area (near the proposed pond, and in the forested area southwest of this pond location). It is recommended that efforts be made to conserve/preserve this area, if possible.

AVAILABILITY OF WATER AND SANITARY SEWER

The site currently does not have public water or sanitary sewer service. The nearest public water and sanitary infrastructure is over five (5) miles away, resulting in the site being required to utilize private wells and drainfields for service. Due to the size of the site and the soils found onsite, it is assumed that wells capable of meeting the required demand would be found on site and that there would be adequate space for the installation of drainfields. If the project moves forward, the next steps would be to verify flows with VDH and perform well testing and infiltration testing onsite.

AVAILABILITY OF OTHER UTILITIES

Natural gas is not available at the site.

Single phase power is available at the site through AEP. Lines will have to be relocated/installed to serve all proposed features of the site.

Telecommunications services are commercially available through a private ISP provider.

TRANSPORTATION ANALYSIS

A commercial entrance satisfying all sight distance requirements can be placed at the western full median crossover in front of the site. Storage lanes and tapers will be required to accommodate the traffic turning into the site. If Amherst and Nelson Counties decide to move forward with this project, the next steps would be to verify the proposed requirements with the Virginia Department of Transportation and perform an in-depth traffic study to confirm the existing and proposed conditions.

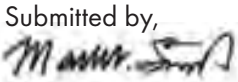
Site and Utility Summary	
Parcel ID	68 A 1, 41
Total Acreage	300.4 Acres
Assessed Land Value	$953,300
Existing Zoning	A-1 (Agricultural Residential)
Existing Use	Undeveloped/Agricultural
Existing Elevation Range	600ft – 850ft
Average Grades Within Portion of Site That is Optimum for Development	1% – 20%
Onsite Cut for Development	~ 633,000 CY
Onsite Fill for Development	~ 633,000 CY
Potential for Stream Impacts	Moderate-High
Potential for Wetlands Impacts	Moderate
Potential for Protected Species Impacts	Low-Moderate
Potential for Cultural Resources Impacts	Moderate
Potential for Floodplain Impacts	None
Existing Water Service	Existing Onsite Wells (Testing Required)
Proposed Water Service	Multiple Onsite Wells
Existing Sanitary Service	None (Possible Abandoned/Demolished Drainfield)
Proposed Sanitary Service	Multiple Onsite Drainfields
Natural Gas Infrastructure Availability	None
Electrical Infrastructure Availability	Single Phase Power Available
Telecommunications Infrastructure Availability	Telecommunications Available Through Private ISP
Entrance to Site	Upgrade to VDOT Commercial Entrance
Sight Distance Requirements	Requirements Can be Met
Turn Lane Requirements	Storage Lanes & Tapers Required

The following are summary costs of the expanded estimate included in TAB 2.

LAND		$1,200,000	
SITE			
• On-Site Preparation	$12,145,240		
• On-Site Improvements	$ 4,508,700		
• Utility Infrastructure	$10,770,313		
• Fire Protection	$ 694,950		
• Landscaping	$ 169,500		
• Site sub-total	$28,288,703		
NEW BUILDINGS AND STRUCTURES		$23,681,720	
TOTAL CONSTRUCTION ESTIMATE		$53,170,423	**$53,200,000**
ALTERNATE PLAN ADDITION-			
Cowboy/ RV Camping at Fairgrounds		$636,986	**$637,000**
TOTAL CONSTRUCTION ESTIMATE W/ALTERNATIVE		$53,807,409	**$53,800,000**

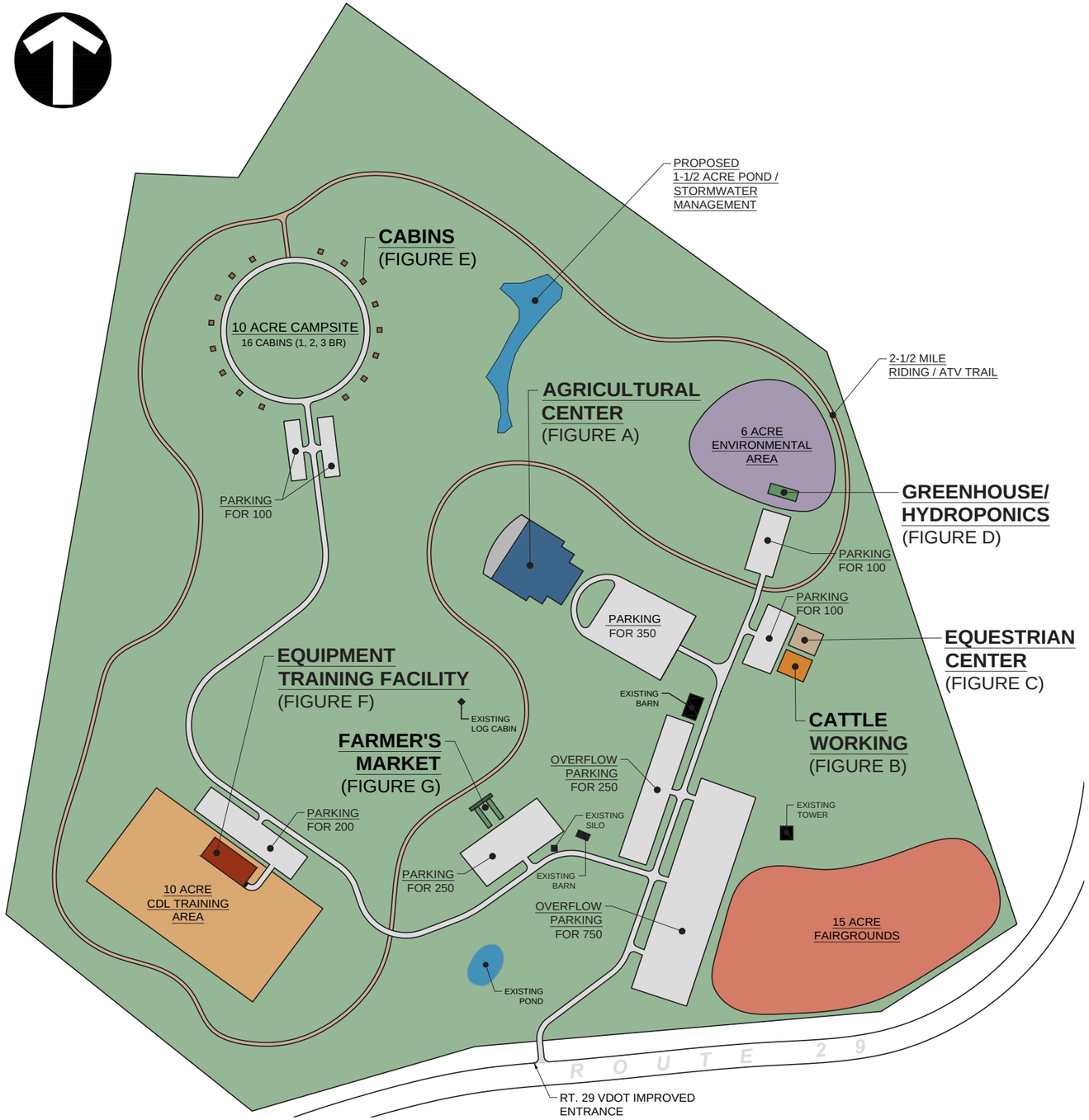
AP and H&P have appreciated the opportunity to work with Amherst County and Nelson County in providing this Preliminary Architectural Feasibility Report. We look forward to serving in continuation of this project.

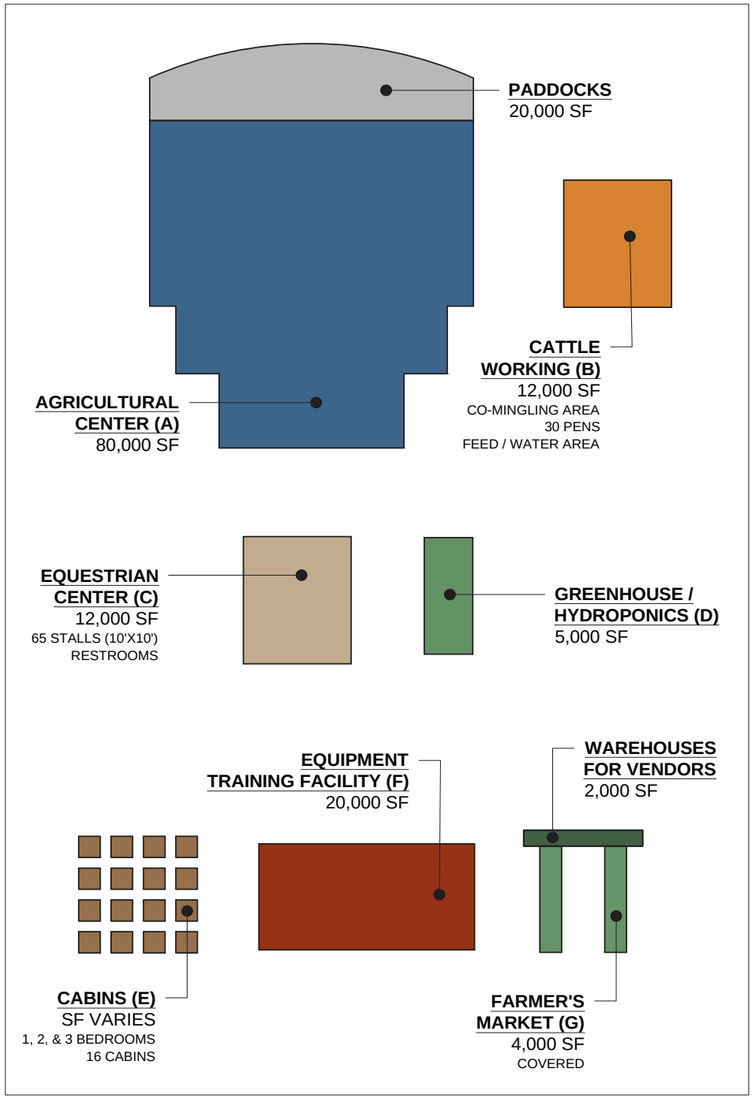
Submitted by,



Mark W. Smith, Senior Architect

2 Preliminary Planning Data & Drawings





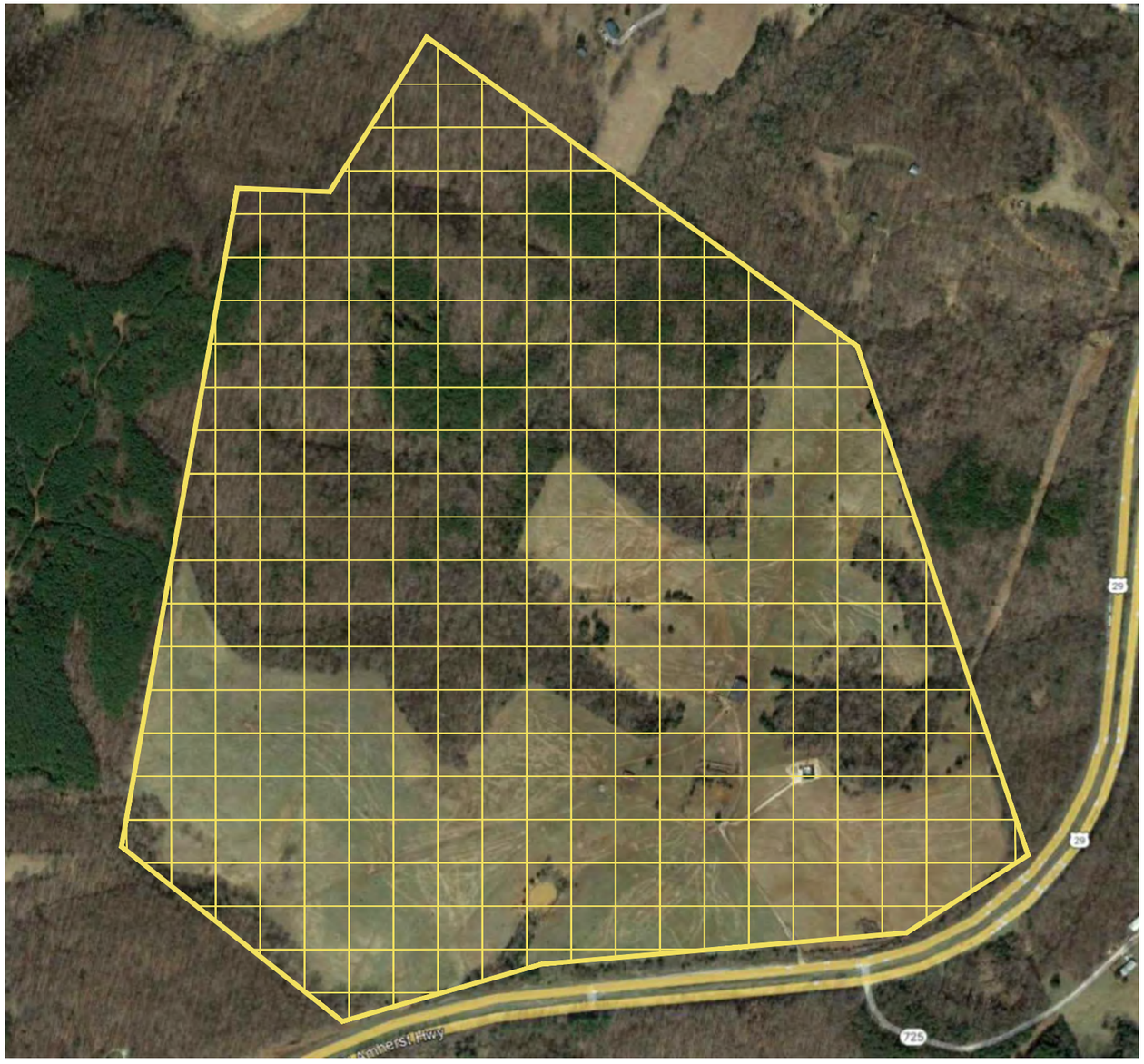
BUILDING PROGRAM DIAGRAM

BUILDING PROGRAM DIAGRAM

SEE FOLLOWING PAGES OF REPORT FOR ADDITIONAL INFORMATION ON BUILDINGS LISTED AS "FIGURE X".

NOTES:

COMPARISON OF OLDE DOMINION COMPLEX TO THE PROPOSED AMHERST-NELSON AGRICULTURAL COMPLEX SITE LOCATED IN AMHERST COUNTY

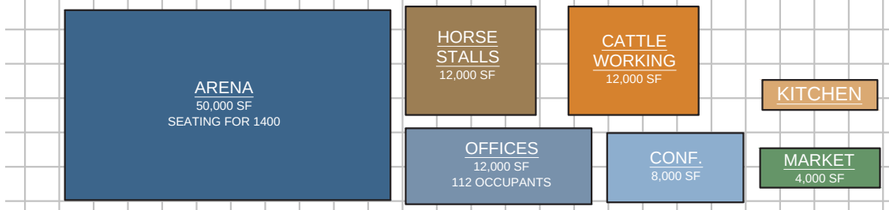


AMHERST-NELSON AGRICULTURAL COMPLEX SITE
303 ACRES

OLDE DOMINION COMPLEX SITE
18 ACRES

EACH GRID
REPRESENTS 1 ACRE

NOTES:

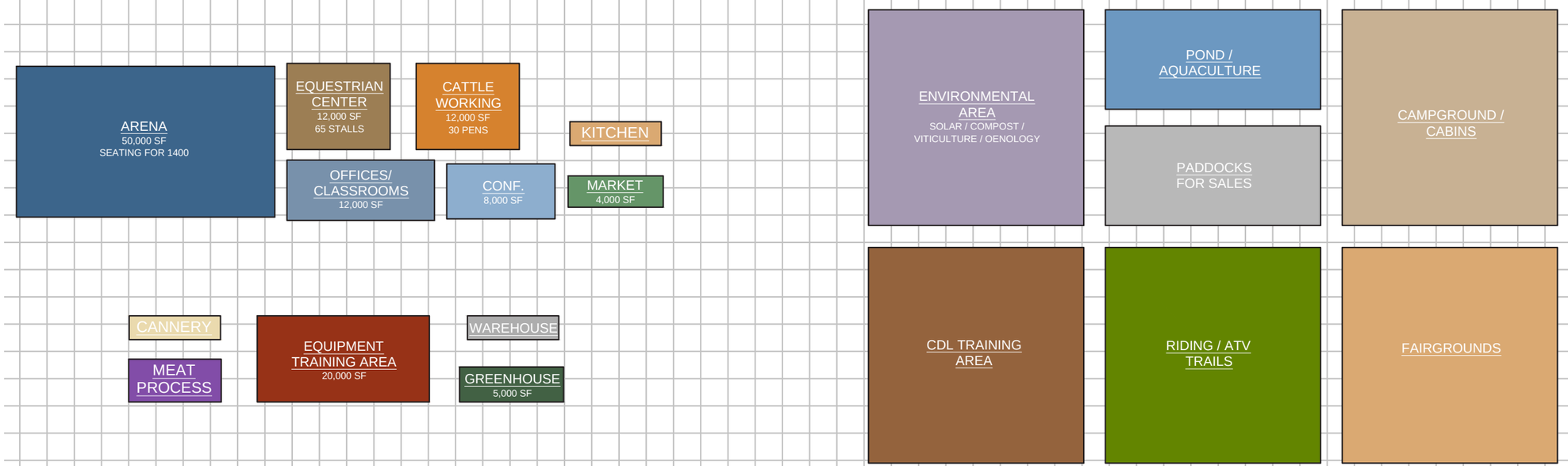


NONE

INDOOR / CONSTRUCTED SPACES

OUTDOOR / SITE DEVELOPMENT SPACES

OLDE DOMINION AGRICULTURAL COMPLEX



INDOOR / CONSTRUCTED SPACES

OUTDOOR / SITE DEVELOPMENT SPACES

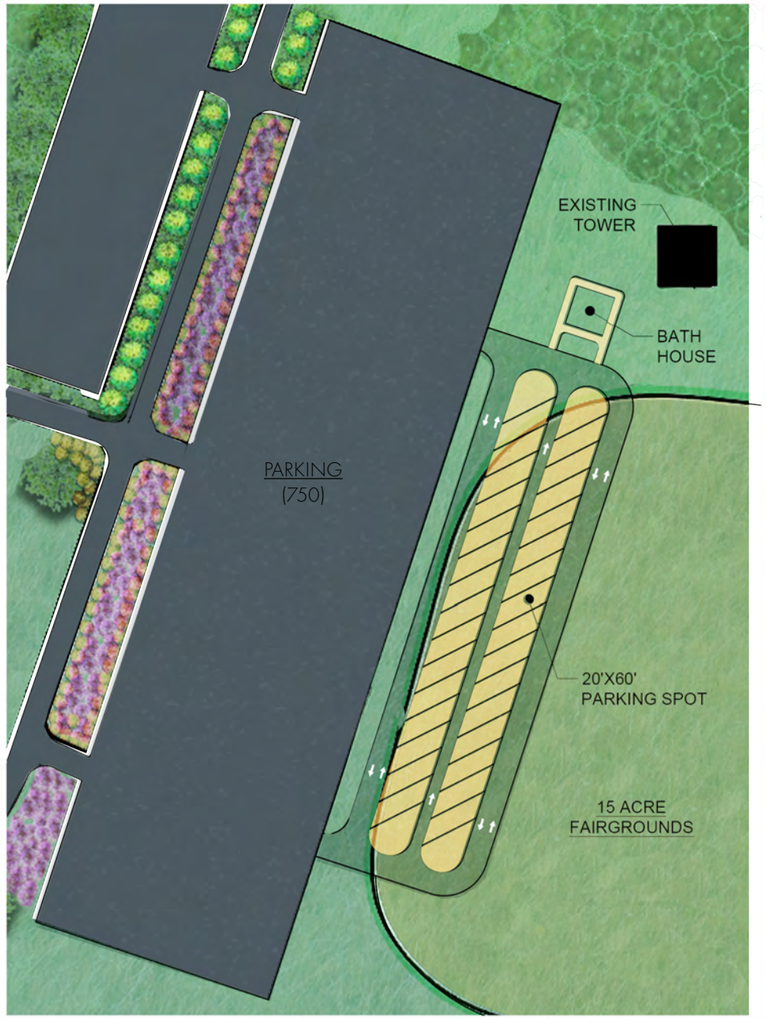
EACH GRID REPRESENTS 1,000 SF

AMHERST-NELSON AGRICULTURAL COMPLEX

NOTES:

RENDERING OF PROPOSED AGRICULTURAL CENTER

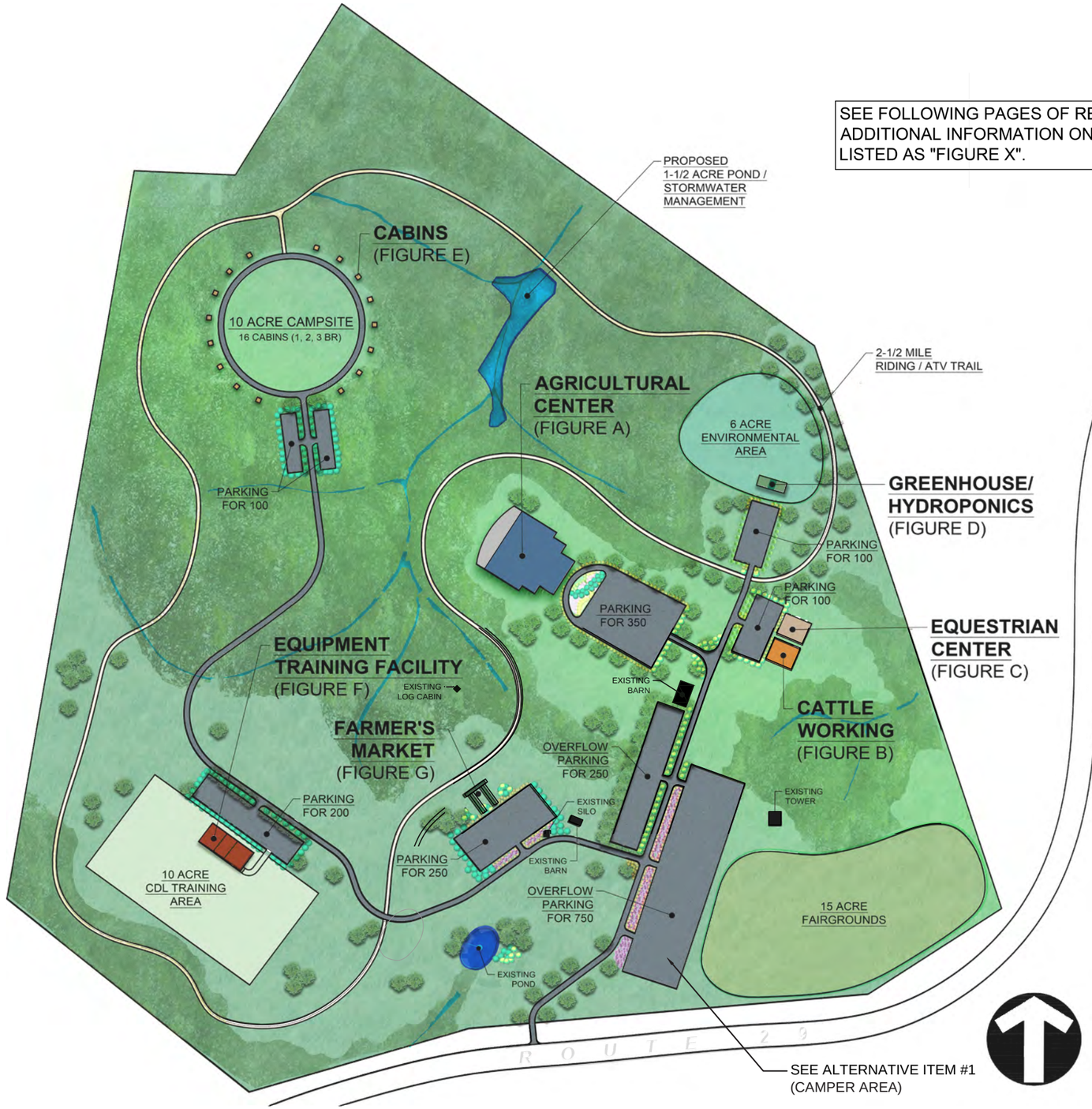
NOTES:



RV / COWBOY CAMPER PARKING LOT

ALTERNATIVE ITEM #1 (CAMPER AREA)

SEE FOLLOWING PAGES OF REPORT FOR ADDITIONAL INFORMATION ON BUILDINGS LISTED AS "FIGURE X".



ANAC CONCEPTUAL SITE PLAN

NOTES:

ARENA
50,000 SF (SEATING FOR 1,400)

MEAT PROCESSING
4,000 SF

CANNERY
2,000 SF

KITCHEN
2,000 SF

CLASSROOMS
6,000 SF

OFFICES
6,000 SF

CONFERENCE/BALLROOM
8,000 SF

RESTROOMS
1,000 SF

PORTE-COCHERE (OUTDOOR SPACE)

PADDOCKS (OUTDOOR SPACE)
20,000 SF

CIRCULATION
3,500 SF

TOTAL SF INTERIOR:
82,500 SF

TOTAL SF EXTERIOR:
20,000 SF

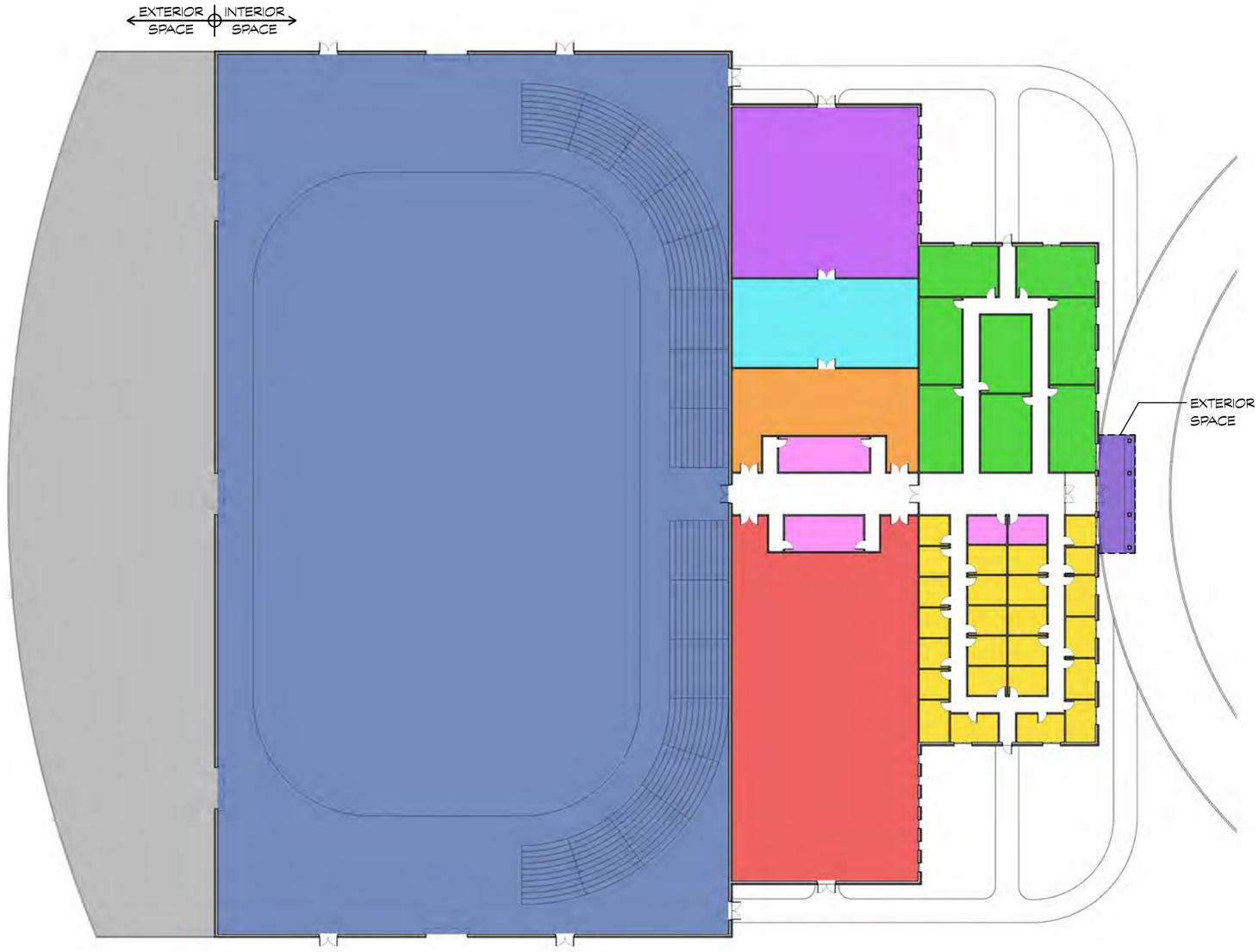
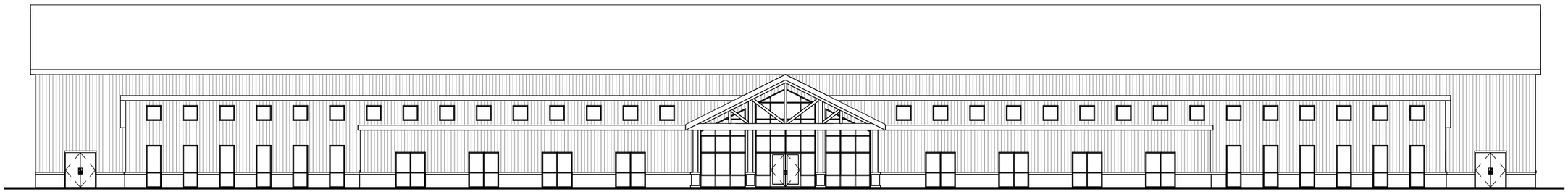


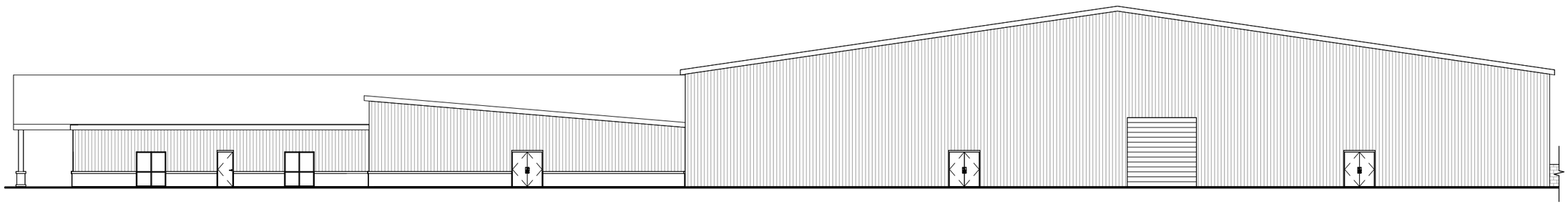
FIGURE A.1: AGRICULTURAL CENTER CONCEPT PLAN

FIGURE A.1: AGRICULTURAL CENTER CONCEPT PLAN

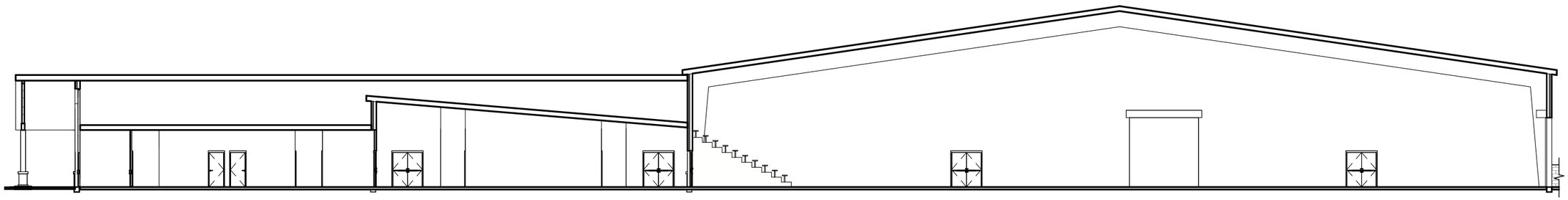
NOTES:



FRONT ELEVATION



RIGHT ELEVATION

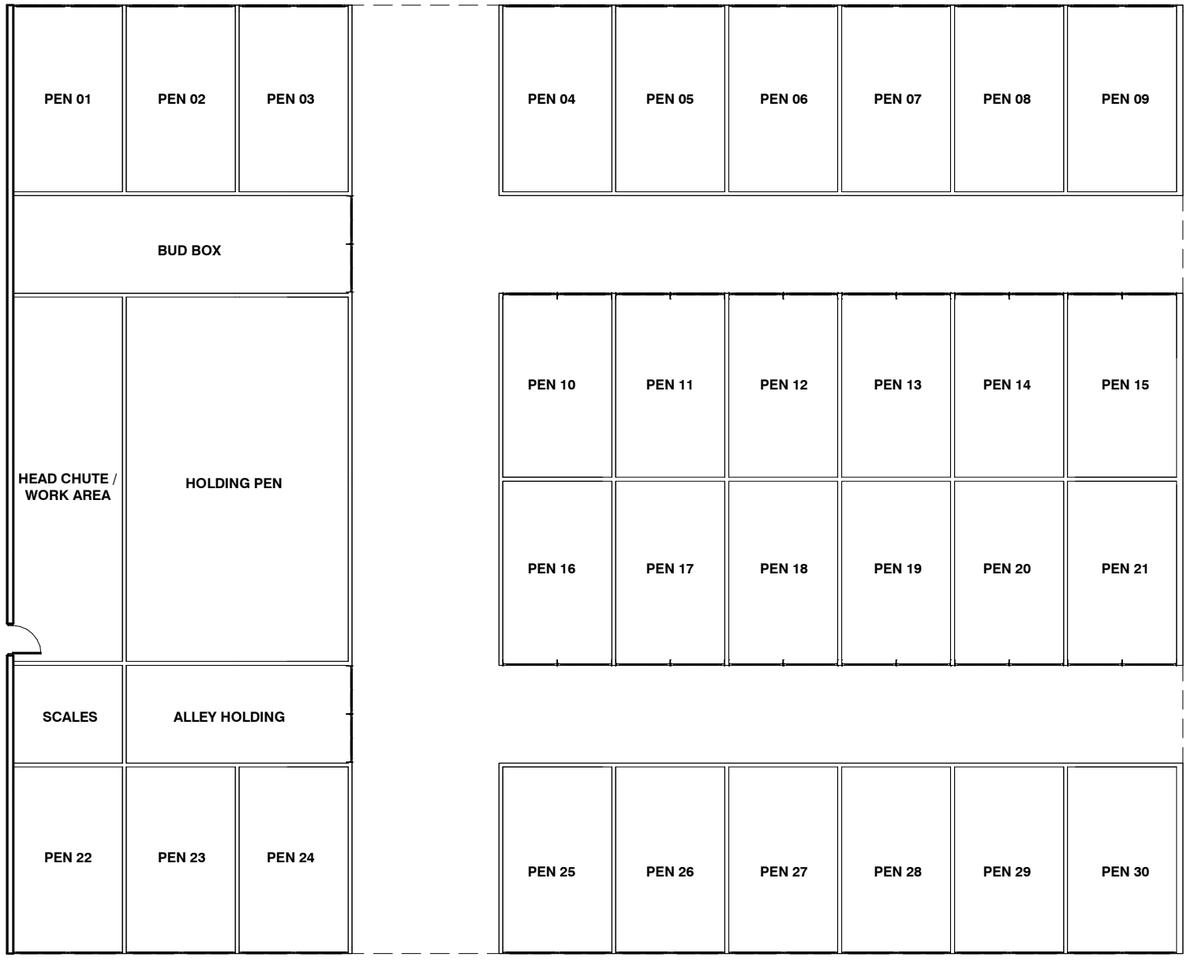


BUILDING SECTION

FIGURE A.2: AGRICULTURAL CENTER - ELEVATIONS

FIGURE A.2: AGRICULTURAL CENTER - ELEVATIONS

NOTES:

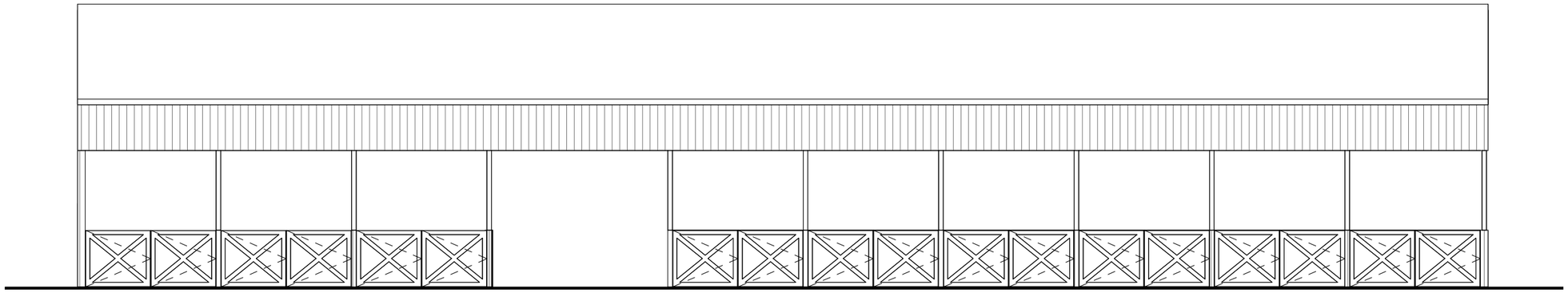


CATTLE WORKING BUILDING - FLOOR PLAN

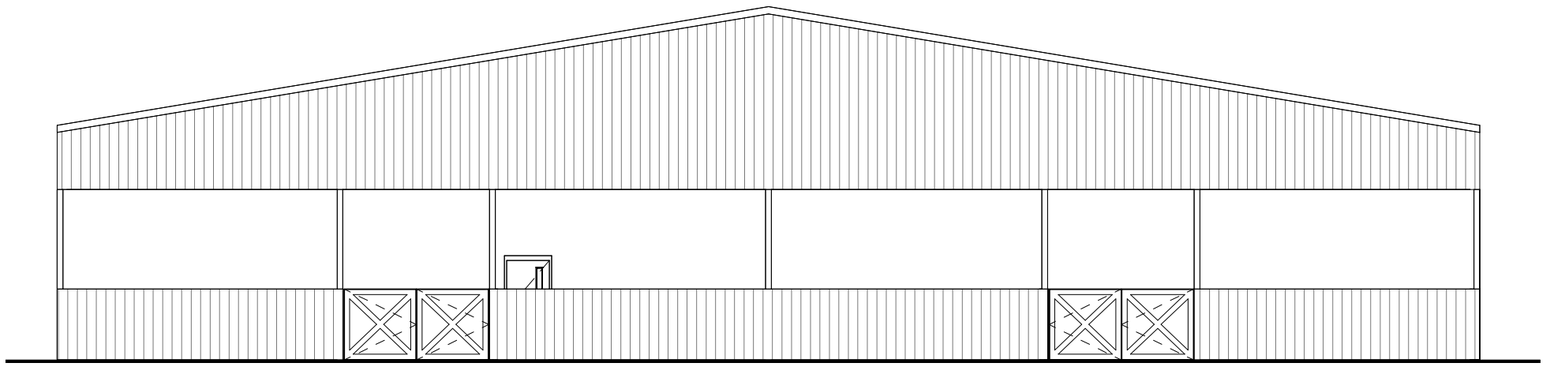
FIGURE B.1: CATTLE WORKING BUILDING - FLOOR PLAN

FIGURE B.1: CATTLE WORKING BUILDING - FLOOR PLAN

NOTES:



FRONT ELEVATION

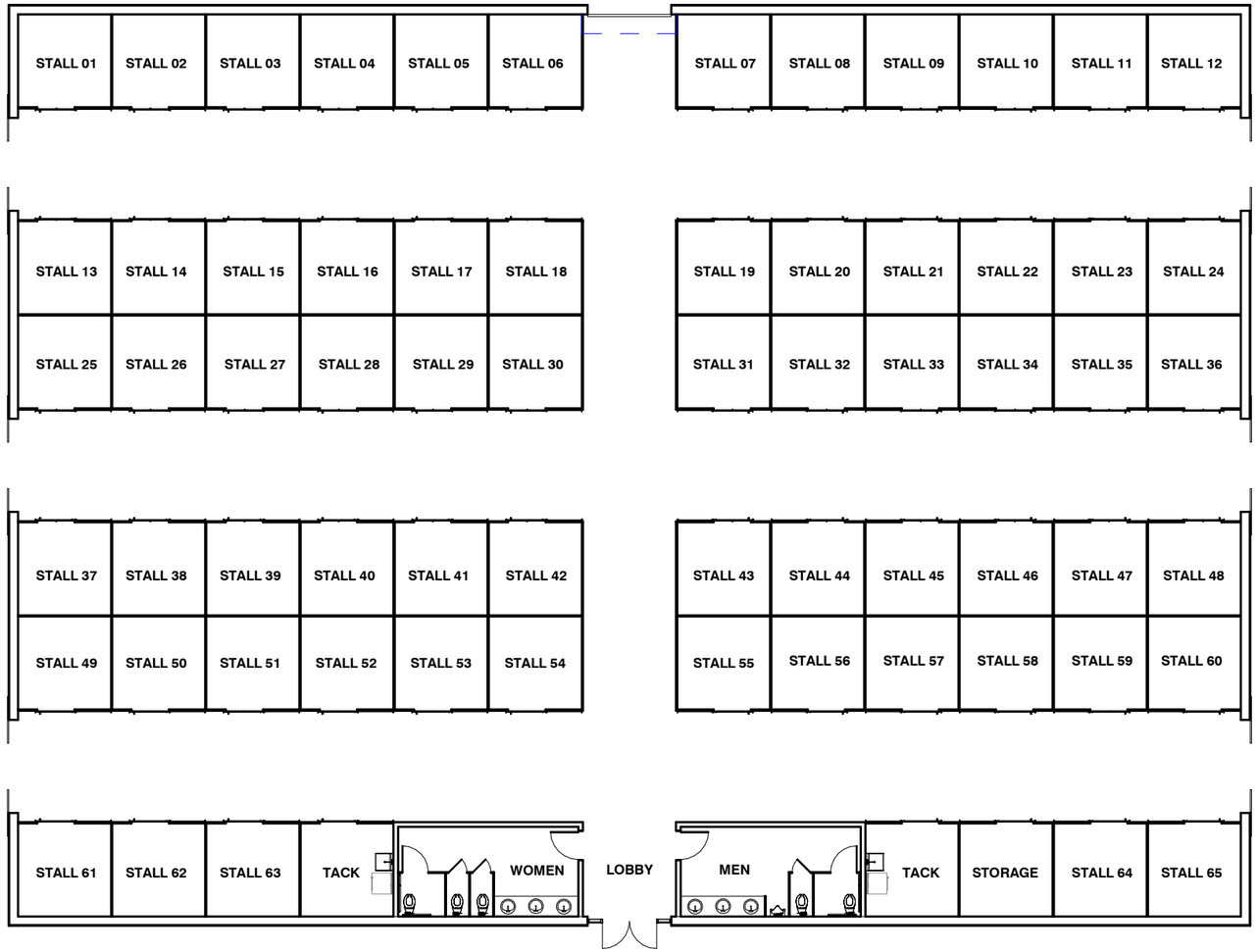


RIGHT ELEVATION

FIGURE B.2: CATTLE WORKING BULIDING - ELEVATIONS

FIGURE B.2: CATTLE WORKING BULIDING - ELEVATIONS

NOTES:

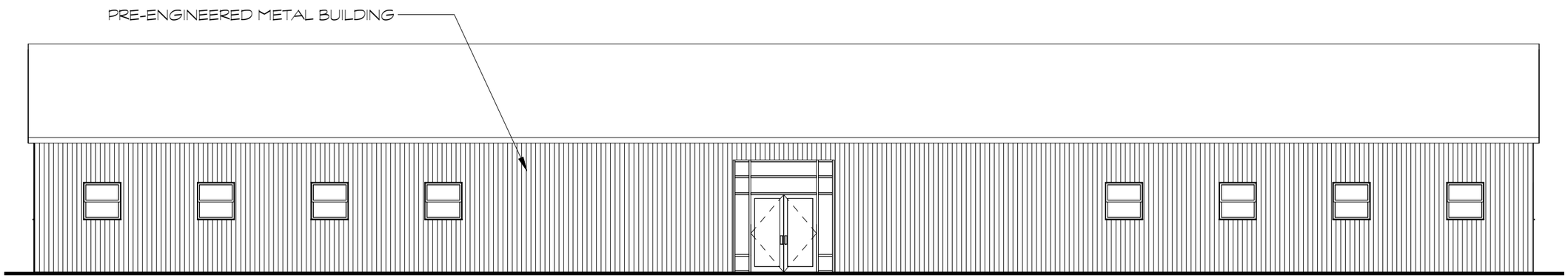


FLOOR PLAN

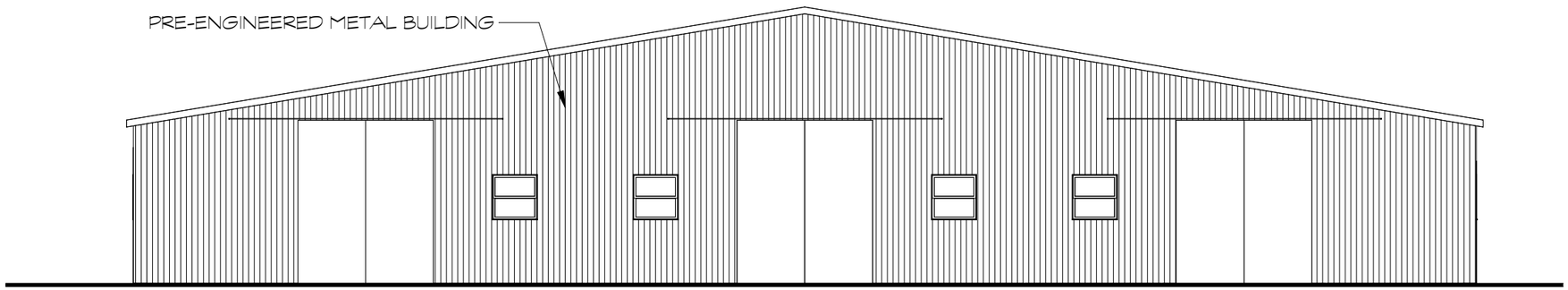
FIGURE C.1: EQUESTRIAN CENTER FLOOR PLAN

FIGURE C.1: EQUESTRIAN CENTER FLOOR PLAN

NOTES:



FRONT ELEVATION



RIGHT ELEVATION

FIGURE C.2: EQUESTRIAN CENTER ELEVATIONS

FIGURE C.2: EQUESTRIAN CENTER ELEVATIONS

NOTES:

FIGURE D: GREENHOUSE CONCEPT

FIGURE D: GREENHOUSE CONCEPT

NOTES:

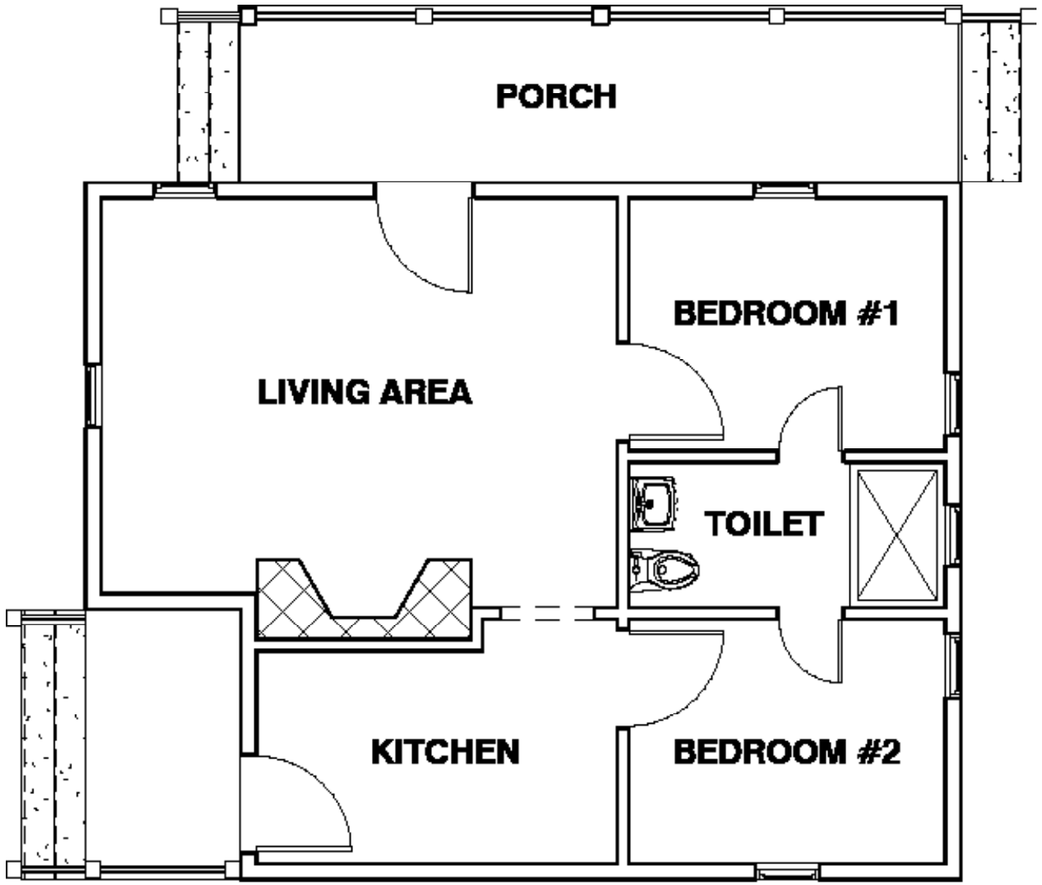


FIGURE E.1: CABIN FLOOR PLAN CONCEPT
2 BEDROOM UNIT SHOWN - 1 & 3 BEDROOM SIMILAR

FIGURE E.1: CABIN FLOOR PLAN CONCEPT

NOTES:

FIGURE E.2: CABIN FRONT ELEVATION CONCEPT

FIGURE E.2: CABIN FRONT ELEVATION CONCEPT

NOTES:

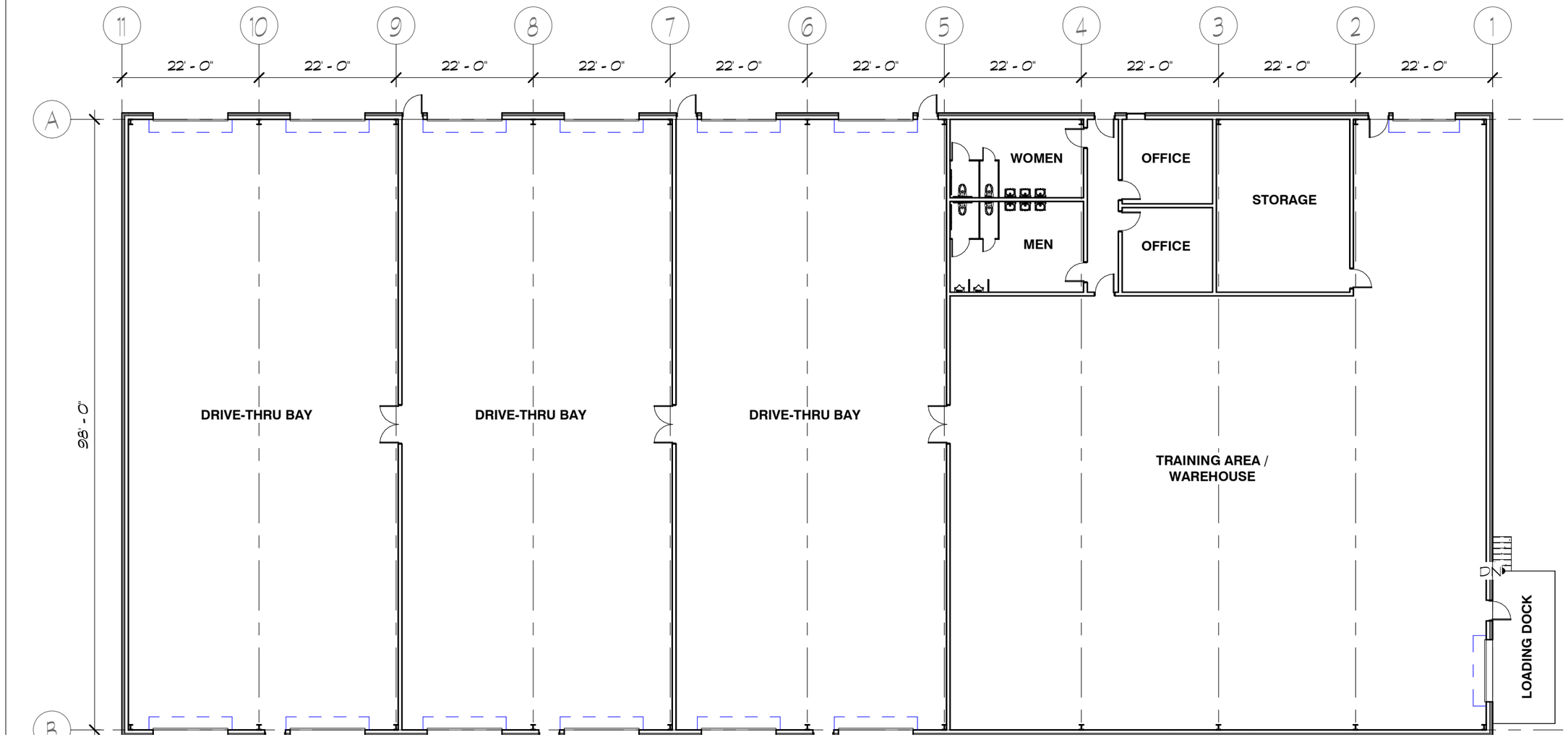
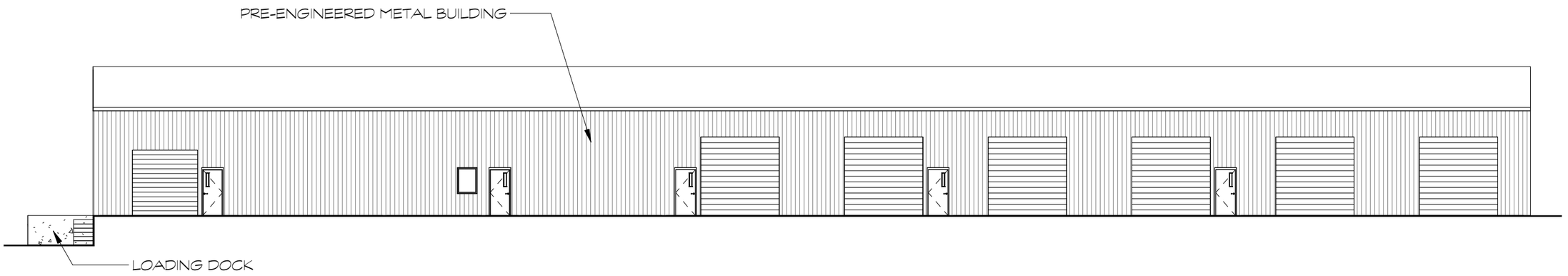


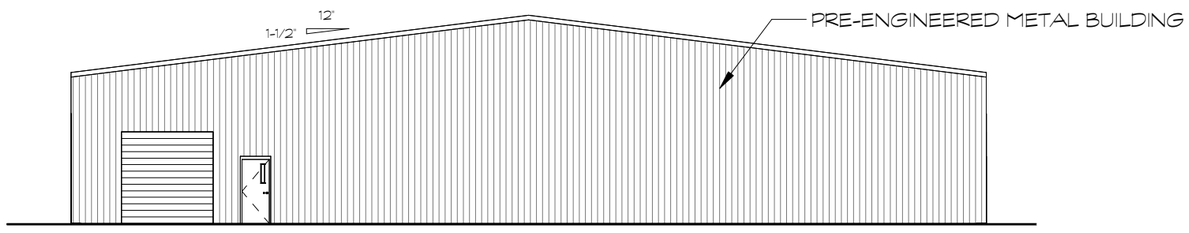
FIGURE F.1: EQUIPMENT TRAINING FACILITY CONCEPT - FLOOR PLAN

FIGURE F1: EQUIPMENT TRAINING FACILITY CONCEPT - FLOOR PLAN

NOTES:



SOUTH ELEVATION



WEST ELEVATION

FIGURE F.2: EQUIPMENT TRAINING FACILITY CONCEPT - FRONT ELEVATION

FIGURE F.2: EQUIPMENT TRAINING FACILITY CONCEPT - FRONT ELEVATION

NOTES:

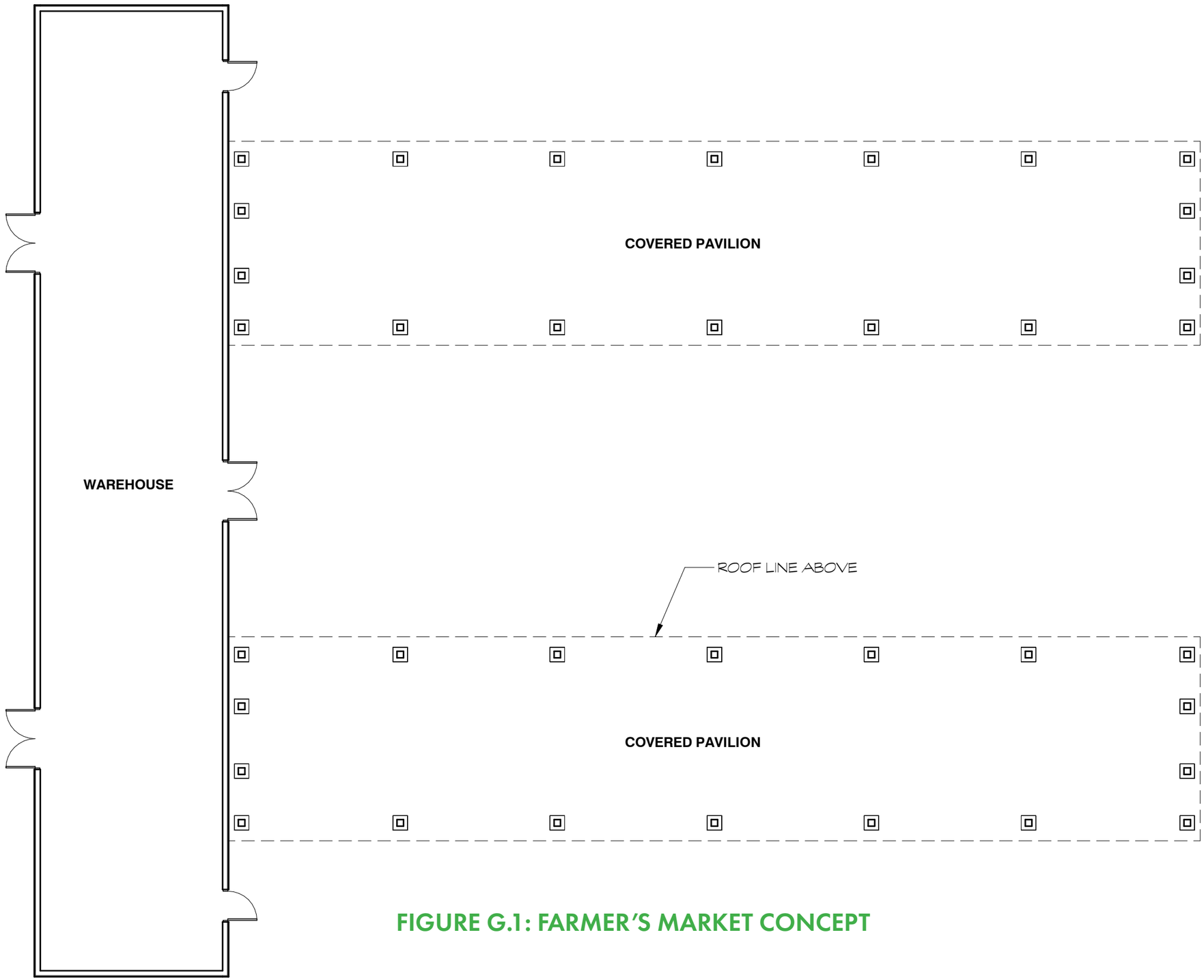
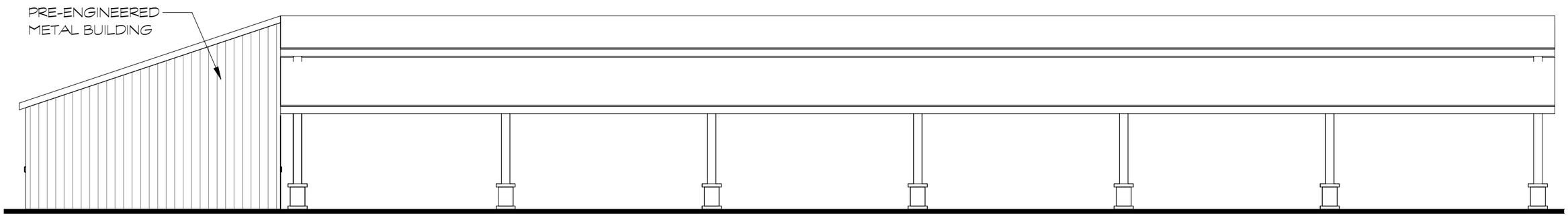


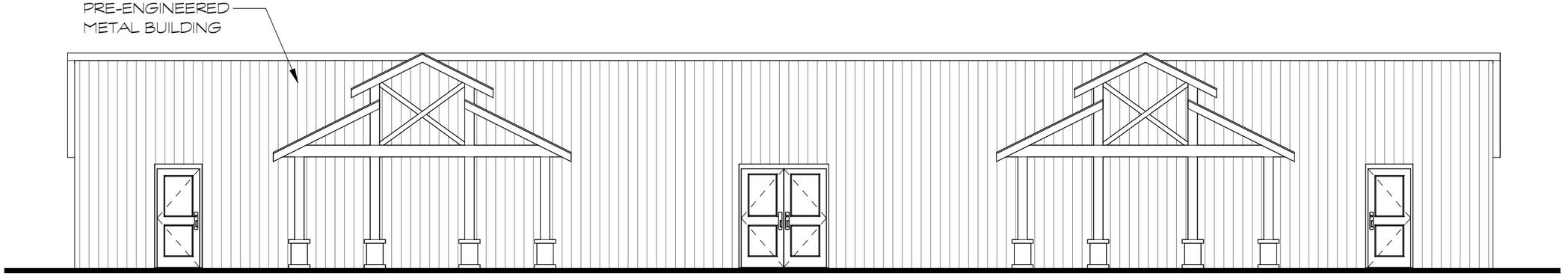
FIGURE G.1: FARMER'S MARKET CONCEPT

FIGURE G.1: FARMER'S MARKET CONCEPT

NOTES:



LEFT ELEVATION



FRONT ELEVATION

FIGURE G.2: FARMER'S MARKET CONCEPT ELEVATIONS

FIGURE G.2: FARMER'S MARKET CONCEPT ELEVATIONS

NOTES:

ANAC PROJECT COST ESTIMATE

Construction Costs- 7-29-2022							Project Cost		
Buildings	**Details**	**Utilities**	**SF/Each**	**COST/SF**	**Cost**	**Modifier**	**Cost**	**see below**	**Subtotals**
• **LAND ACQUISITION**	Purchase Costs				$1,200,000	$0	$1,200,000	No Modifier for land purchase	**$1,200,000**
• **SITE**	Roads/Trails/Utilities/ Stormwater/Grading								
On-Site Preparation	Clearing and Grading				$10,748,000	$1,397,240	$12,145,240	5	
On-Site Improvements	Paving, Roads, Trails				$3,990,000	$518,700	$4,508,700	5	
Utility Infrastructure	Water, Storm Water, Sanitary, Telecom, Elec.				$9,531,250	$1,239,063	$10,770,313	5	
Fire Protection	Fire Pump, Storage Tank, Hydrants, Misc. Equip.	S	1	LS	$615,000	$79,950	$694,950	5	
Landscaping	Planting, Minor Hardscaping		1	LS	$150,000	$19,500	$169,500	5	**$28,288,703**
• **NEW BUILDINGS & STRUCTURES**									
Arena/Multi-Use Events Center	PEMB with dirt floor	H, V, S	50,000	75	$3,750,000	$862,500	$4,612,500	2	
Toilet Room (10 W, 10 M)	CMU walls/tile floor/ GWB ceiling	H, V, S	1,000	180	$180,000	$54,000	$234,000	1	
Bleachers			1	LS	$309,000	$40,170	$349,170	5	
Offices/Classrooms (100 occupants)	PEMB with 4" concrete floor	H, C, V, S	12,000	140	$1,680,000	$504,000	$2,184,000	1	
Multi-purpose Conference/Event Room	PEMB with 4" concrete floor	H, C, V, S	8,000	130	$1,040,000	$312,000	$1,352,000	1	
Kitchen Area	QT floor/FRP wall and ceiling panels	H, C, V, S	2,000	150	$300,000	$90,000	$390,000	1	
Food Service Equipment		Systems	1	LS	$500,000	$115,000	$615,000	3	
Meat Processing Facility		H, V	4,000	350	$1,400,000	$322,000	$1,722,000	3	
Equipment			1	LS	$200,000	$26,000	$226,000	5	
Cannery		H, V, S	2,000	125	$250,000	$75,000	$325,000	2	
Equestrian Center									
65 Stalls	PEMB with dirt floor	V, S	65	25,000	$1,625,000	$341,250	$1,966,250	4	
Lobby/Restrooms	PEMB with 4" concrete floor	H, C, V, S	2,000	140	$280,000	$84,000	$364,000	1	
Cattle Working Facility (30 pens)	PEMB with dirt floor	Unconditioned	30	10,000	$300,000	$63,000	$363,000	4	
Large Bay Workshop (Equip. Training)	PEMB with 6" concrete floor	V, S	20,000	75	$1,500,000	$345,000	$1,845,000	2	
Open Pavilion (Farmer's Market)	PEMB without exterior wall, concrete floor, metal ceiling panels with lights	Unconditioned	4,000	65	$260,000	$54,600	$314,600	4	
Warehouse (for Farmer's Market)	PEMB with 4" concrete floor	H, V, S	2,000	110	$220,000	$46,200	$266,200	4	
Campsite									
16 Cabins (1, 2, 3 Bedrooms)		H, C	16	250,000	$4,000,000	$1,200,000	$5,200,000	1	
Restroom / Shower Facility	CMU walls/tile floor/ GWB ceiling	H, V	1,000	150	$150,000	$34,500	$184,500	3	
Greenhouse/Hydroponics/Oenology		Systems	5,000	190	$950,000	$218,500	$1,168,500	3	**$23,681,720**
• **ALTERNATE (CAMPER AREA)**									
Sitework					$367,875	$84,611	$452,486	3	
Bath House @ Fairgrounds	CMU walls/tile floor/ GWB ceiling	H, V	1,000	150	$150,000	$34,500	$184,500	3	**$636,986**
TOTAL CONSTRUCTION COST									**$53,170,423**
TOTAL CONSTRUCTION COST + ALTERNATE									**$53,807,409**

Modifier description

[1] Project costs included A/E Fees (10%), Legal Fees (1%), Data/Tech/ Low Voltage (3%)Fixtures/Furnishings/ Equipment 6 % and Contingency (10%) — 30% Business/assembly type buildings

[2] Project costs included A/E Fees (8%), Legal Fees (1%), Data/Tech/ Low Voltage (3%)Fixtures/Furnishings/ Equipment 1 % and Contingency (10%) — 23% large open event spaces

[3] Project costs included A/E Fees (10%), Legal Fees (1%), Data/Tech/ Low Voltage (1%)Fixtures/Furnishings/ Equipment (1 %) and Contingency (10%) — 23% Space or building that is limited to FFE and Tech

[4] Project costs included A/E Fees (8%), Legal Fees (1%), Data/Tech/ Low Voltage (1%)Fixtures/Furnishings/ Equipment 1 % and Contingency (10%) — 21% Outside structures -stalls/pins/market

[5] Project costs included A/E Fees (2%), Legal Fees (0%), Data/Tech/ Low Voltage (0%)Fixtures/Furnishings/ Equipment 1 % and Contingency (10%) — 13% Special Equipment or fabrication items

C = Cooling, H = Heating, V = Ventilation, System = packaged equipment for special requirements

Engineer's Opinion of Probable Site Construction Cost - Amherst/Nelson County Agricultural Center

Created: July 29, 2022
Data Assumptions: On-Site Preperation & On-Site Improvements were estimated using SITEOPS (Version 10.9.1.3), See Attachments for water and santiary estimates

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE PREPARATION					
Site Clearing					
Clearing	45	AC	$5,000.00	$225,000.00	
Demolition	1	LS	$150,000.00	$150,000.00	
Topsoil Strip/Cut	120,000	CY	$2.00	$240,000.00	
Topsoil Fill	90,000	CY	$2.00	$180,000.00	
Topsoil Export (onsite disposal)	30,000	CY	$8.00	$240,000.00	
Total Site Clearing				$1,035,000.00	$1,035,000.00
Grading Cut					
Earth Cut	633,000	CY	$6.00	$3,798,000.00	
Rock Cut	1,000	CY	$100.00	$100,000.00	
Unsuitable Cut	5,000	CY	$20.00	$100,000.00	
Total Grading Cut				$3,998,000.00	$3,998,000.00
Grading Fill					
Earth Fill	633,000	CY	$6.00	$3,798,000.00	
Total Grading Fill				$3,798,000.00	$3,798,000.00
Other Preparation					
Fine Grading (Building)	66,000	SY	$2.00	$132,000.00	
Fine Grading (Non-Building)	105,000	SY	$1.00	$105,000.00	
Erosion Control	145	AC	$10,000.00	$1,450,000.00	
Seeding	115	AC	$2,000.00	$230,000.00	
Total Other Preparation				$1,917,000.00	$1,917,000.00
				TOTAL	**$10,748,000.00**

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE IMPROVEMENTS					
Paving - Asphalt					
Asphalt Paving - Drives (Light Duty)	95,000	SY	$35.00	$3,325,000.00	
Asphalt Paving - Road Improvements	1,000	SY	$65.00	$65,000.00	
Total Paving - Asphalt				$3,390,000.00	$3,390,000.00
Paving - Other					
Paving - Gravel (Riding / ATV Trail)	12,000	SY	$15.00	$180,000.00	
Total Paving - Other				$180,000.00	$180,000.00
Curb & Gutter					
Drive Curb & Gutter	17,000	LF	$30.00	$510,000.00	
Parking Curb & Gutter	14,000	LF	$30.00	$420,000.00	
Total Curb & Gutter				$420,000.00	$420,000.00
				TOTAL	**$3,990,000.00**
UTILITY INFRASTRUCTURE (See separate attachments for water and sanitary estimates)					
Storm Water	1	LS	$1,225,000.00	$1,225,000.00	
Water	1	LS	$5,075,000.00	$5,075,000.00	
Sanitary	1	LS	$3,000,000.00	$3,000,000.00	
Telecom	1	LS	$100,000.00	$100,000.00	
Electric (Install/Relocate Lines)	8,750	LF	$15.00	$131,250.00	
				$9,531,250.00	$9,531,250.00
				TOTAL	**$9,531,250.00**
ALTERNATIVE ITEM #1 (CAMPER AREA)					
Asphalt Paving - Drives (Light Duty)	4,275	SY	$35.00	$149,625.00	
Paving - Gravel	4,750	SY	$15.00	$71,250.00	
Fine Grading (Building)	1,000	SY	$2.00	$2,000.00	
Fine Grading (Non-Building)	10,000	SY	$1.00	$10,000.00	
Water Hookup for Site	30	EA	$2,000.00	$60,000.00	
Electric Hookup for Site	30	EA	$2,500.00	$75,000.00	
				$367,875.00	$367,875.00
				TOTAL	**$367,875.00**
				Total Cost Estimate	**$24,269,250.00**
				Total Cost Estimate Including Alternative Item #1	**$24,637,125.00**

WATER

Demand

	Units	Quantity	Demand (gpd)	Total
Campground*	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
Livestock	Animals***	215	10	2,150
Greenhouse	SF of Growing Area	5,000	0.5	2,500
			Total Demand =	26,650 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
***Based upon number of horse stalls & cattle pens (Assuming 1 horse per stall & 5 cows per pen).
Note: Alternative Item #1 (Camper Area) is included in the calculations.

Cost

	Units	Quantity	Cost	Total
Well System*	LS	1	$4,250,000	$4,250,000
Distribution Piping	LF	11,000	$75	$825,000
			Total Cost =	$5,075,000.00

*Cost based upon similar projects utilizing well, treatment, and storage systems per 1,000 gpd demand.

SANITARY

Flow

	Units	Quantity	Demand (gpd)	Total
Campground	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
			Total Demand =	22,000 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
Note: Alternative Item #1 (Camper Area) is included in the calculations

Cost

	Units	Quantity	Cost	Total
Drainfield System*	LS	1	$3,000,000	$3,000,000
			Total Cost =	$3,000,000.00

*Cost based upon similar projects utilizing multiple drainfields with pretreatment systems per 1,000 gpd demand.

FIRE PROTECTION

Cost

	SF	Cost/SF	Cost	Total Costs
Arena, Conference, Classrooms, Offices	80,000			
Livestock, etc.	34,000			
	114,000	3	$342,000	
NFPA Ordinary Hazard Use				
Water Storage Tank (180,000 gallon)			$150,000	
Tank for freeze protection			$70,000	
Foundation			$35,000	
Electric Fire Pump (1500 gpm)			$40,000	
Fire Pump House			$20,000	
Dry System Front Equipment			$15,000	
Piping, Valves, etc.			$35,000	
Total Materials & Equipment				$365,000
Labor				$250,000
Total				$615,000

(Note: Hydrants and piping included in the Civil site estimate)

(No generator or diesel pump if electric power is reliable)

3

Hurt & Proffitt Site Evaluation Report

AMHERST NELSON AGRICULTURAL COMPLEX

AGRICULTURAL COMPLEX SITE MASTER PLANNING

LAND COST & AVAILABILITY

- The proposed agricultural complex site is an ~300 acre tract (Parcel ID: 68 A 1, 41) currently owned by Tri-County Properties LLC & Others. At the time of this report, it is understood that the property is available for purchase & the owner is receptive to the idea of selling the property to Amherst/Nelson Counties for construction of the agricultural center. The property currently has an assessed value of $953,300 per the Amherst County GIS website, however, it should be noted that the actual negotiated purchase price may differ

EXISTING CONDITIONS

- The site is located on the west side of US Route 29 (North Amherst Highway) approximately 0.8 miles southwest of the intersection of US Route 29 and the Amherst – Nelson County border, also known as the Tye River (see Vicinity Map). The site is adjacent to US Route 29, and is currently being used for agricultural purposes.

- Existing improvements on the site include an existing gravel entrance to the property, two barns used for agricultural purposes, and a small pond. Other site features include the site of a demolished house, the base of a demolished silo, a decaying log cabin, and an existing telecommunications tower located in the southeastern section of the property. There is one on-site well near the demolished house site and a second existing well in the southwestern corner of the property. Existing electric lines are present on the site and run to the barns, telecommunications tower, and demolished house site.

- The site is largely undeveloped and approximately 51% wooded. The majority of the wooded area is located in the northern corner of the property along with two small wooded areas located in the southwestern corner and along the eastern boundary. The southern area of the property is largely agricultural fields. Available aerial photographs suggest that existing land uses have been fairly consistent for the past 62 years (since at least 1959).

- The property is comprised of 300.41 acres currently zoned A-1 (Agricultural Residential District) and has approximately 3,430 feet of road frontage along US Route 29. The property is bounded by US Route 29 to the south and residential land zoned A-1 to the north, east, and west. The adjoining properties to the east and west are primarily wooded, while the adjoining properties to the north are a mix of wooded areas and agricultural fields (see Site Map).

- The site has diverse topography with multiple small drainage channels. The majority of these channels converge to form a well-defined channel that flows from the center of the property to the northern edge of the site. This channel is a tributary to the Tye River and is most likely an environmentally sensitive area, which may limit development near the central and northern sections of the property.

The remaining portions of the site drain to small stream channel in the southeast and southwest areas of the property. The existing agricultural fields are located along the gently sloping sections of the site and contain local high points. These fields are the areas within the property that are optimum for development.

- Elevations on the site range from approximately 850 to 600 feet. The highest areas of the property are located in wooded area in the northwestern corner of the property and the lowest areas of the property are located along the main drainage channel at the northeastern boundary of the property. Average grades within the area of the property that is optimum for development range from 1% to 20%.

NOTES:

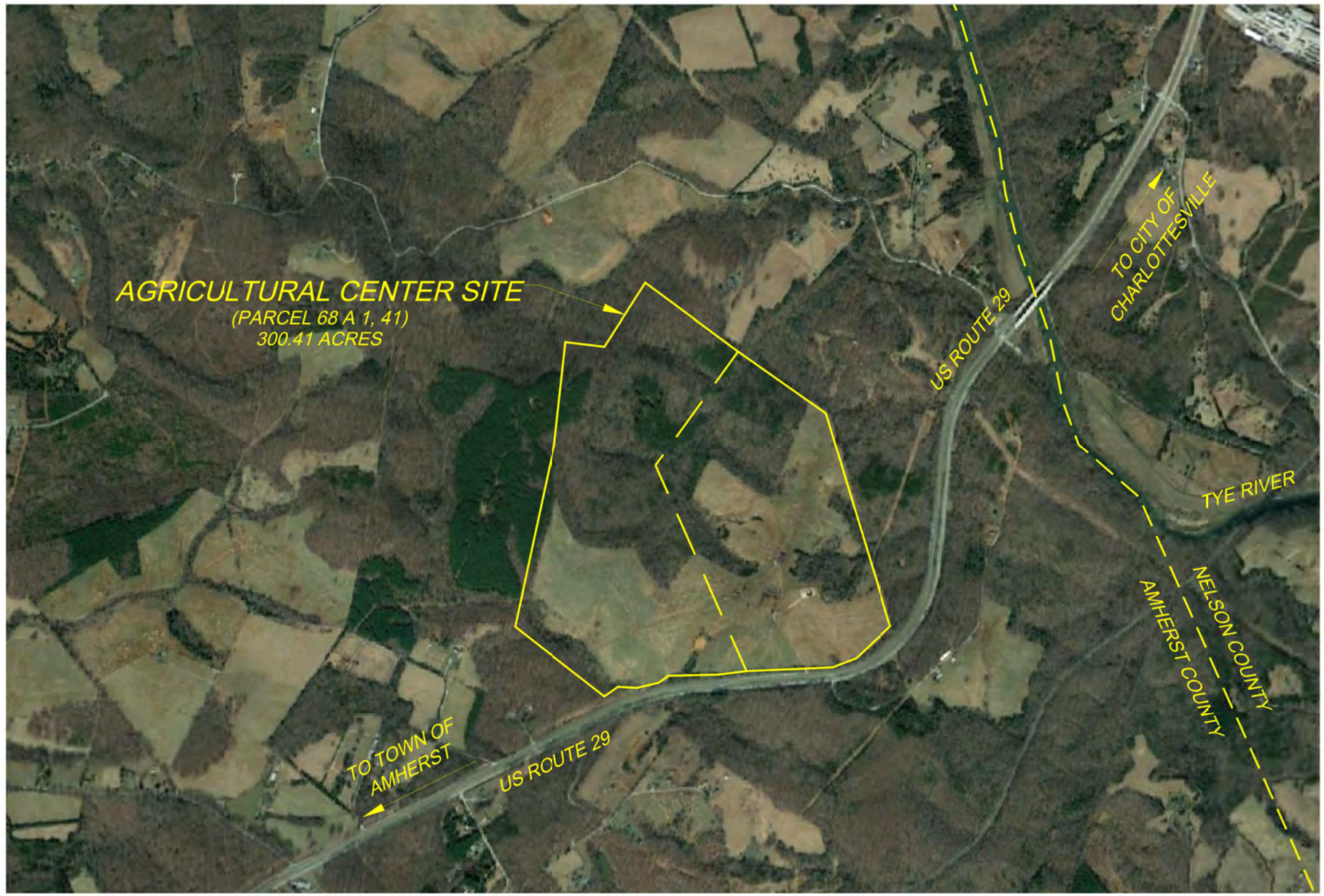
NOTES:

1. AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)
2. PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE
3. COUNTY BOUNDARY DATA TAKEN FROM THE UNITED STATES CENSUS BUREAU

0 1500 3000 6000
SCALE 1" = 3000'

FIGURE 1: VICINITY MAP

NOTES:



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1. AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)
2. PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE
3. COUNTY BOUNDARY DATA TAKEN FROM THE UNITED STATES CENSUS BUREAU

FIGURE 2: SITE LOCATION MAP

NOTES:

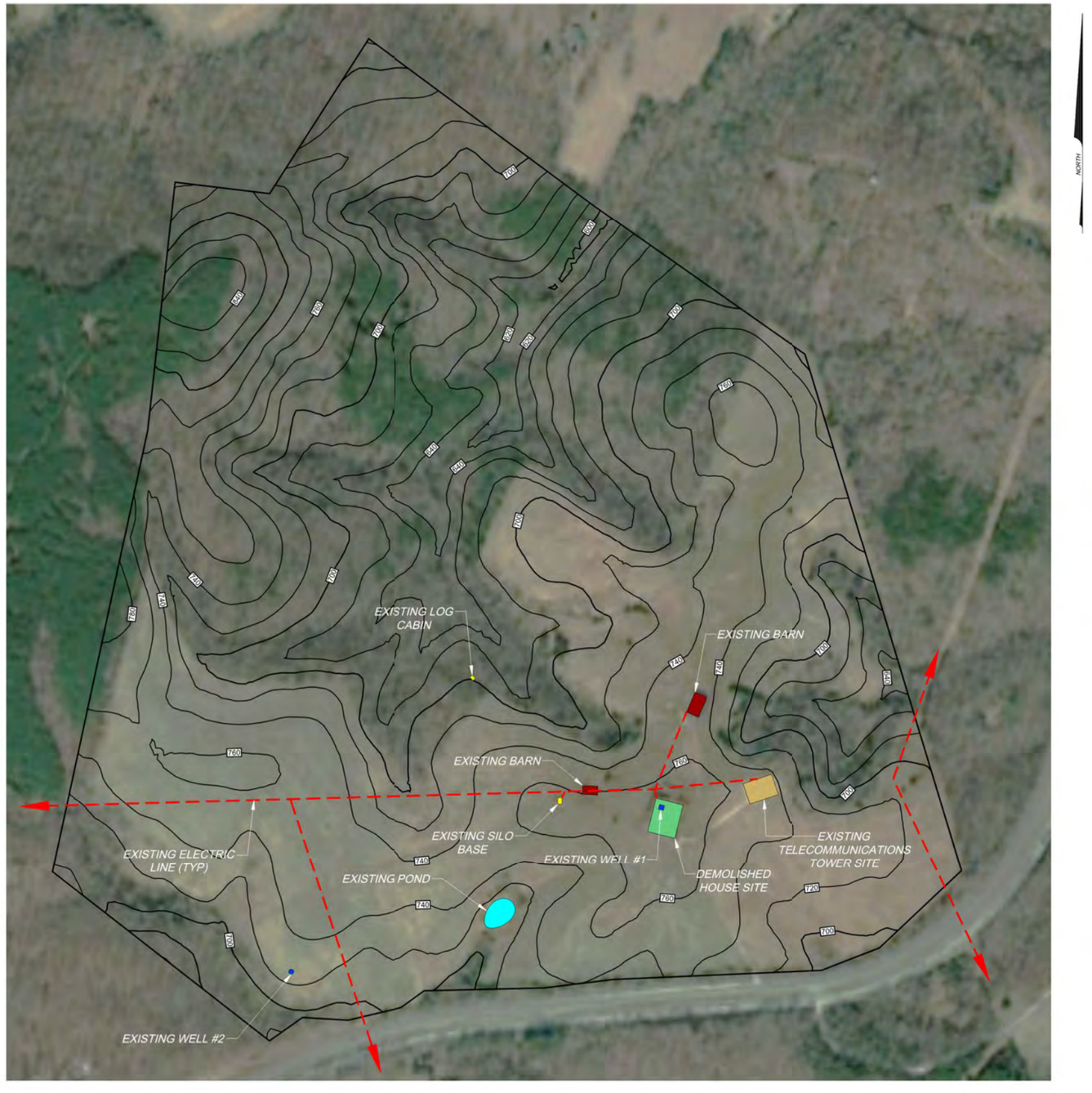


FIGURE 3: EXISTING SITE CONDITIONS

NOTES:

1. *AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)*
2. *PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE*

NOTES:

SITE DEVELOPMENT

There are numerous design considerations for the development of this site. There are various proposed structures & designated use areas within the proposed agricultural center, each with a unique purpose. The proposed entities are as follows:

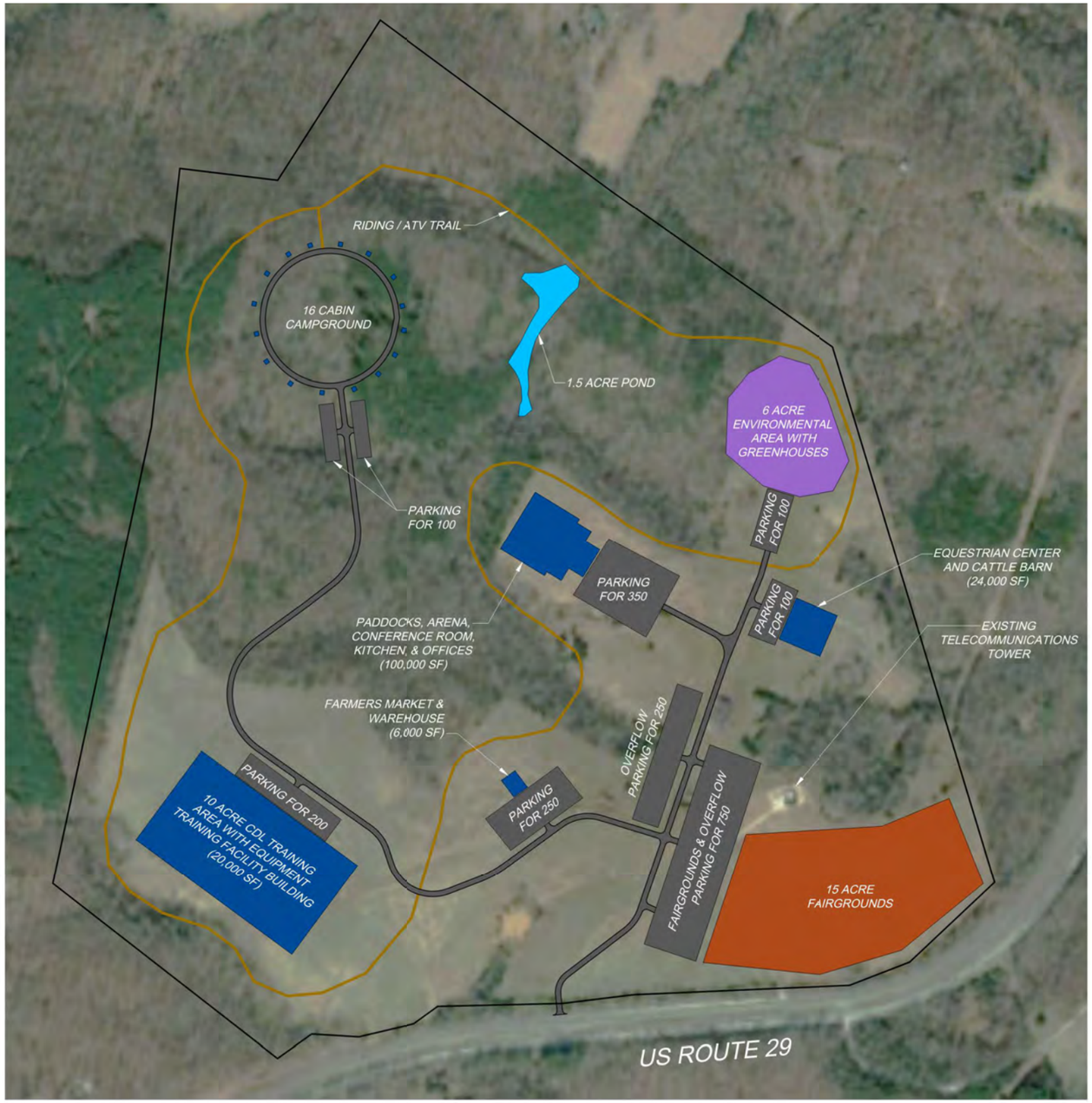
- 100,000 SF Paddocks, Arena, Conference Room, Kitchen, and Office
- 24,000 SF Equestrian Center & Cattle Barn
- 6,000 SF Farmers Market & Warehouse
- 15 Acre Fairgrounds
- 10 Acre CDL with 20,000 SF Equipment Training Area
- 6 Acre Environmental and Greenhouse Area
- 1.5 Acre Pond
- 16 Cabin Campground Area
- Riding / ATV Trail Traversing the Property
- Approximately 2,100 total parking spaces
- Alternative Item #1 (Camper Area)

The existing site topography was analyzed, and it was determined that the existing stream running though the central and northern section of the site would limit development of this portion of the property. The approach of the site layout is to locate the majority of the buildings and designated use areas within the existing agricultural fields. This will locate the features along the natural high points of the property and eliminate the need for mass clearing/grubbing of the site. One exception to this is the proposed 16 cabin campground, which is located in the northwestern corner of the site. This area is primarily wooded and will allow guests to become engrossed with the natural forests of the area during their stay. Access drives throughout the site are primarily located along the existing ridges of the property and will allow patrons to access the buildings and designated use areas by motor vehicle. The riding/ATV trail layout is shown to travel adjacent to the majority of the areas of interest on the site, including the equestrian center and equipment training facility. This will allow the trail to be easily accessed for patrons utilizing a horse and/or ATV and provide them a safe route to the other locations within the agricultural center.

SITE PLAN LAYOUT

The following exhibits display the preliminary layout of the site and the associated preliminary grading plan.

NOTES:



ALTERNATE ITEM #1
CAMPER AREA

0 125 250 500
SCALE 1" = 250'

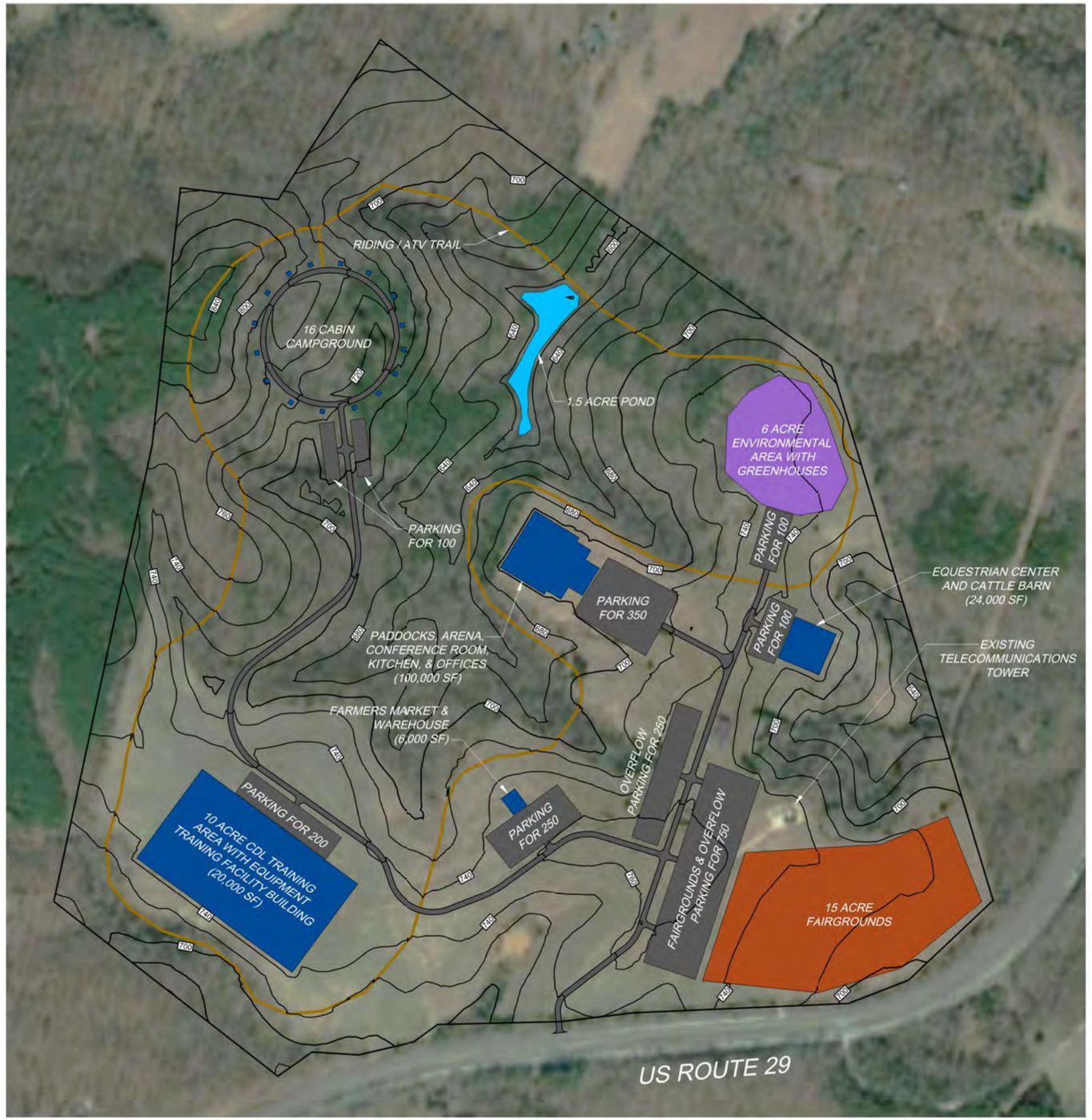
FIGURE 4: PRELIMINARY SITE LAYOUT

NOTES:

1. *2,100 TOTAL PARKING SPACES PROVIDED*
2. *AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)*
3. *PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE*

NOTES:

FIGURE 5: PRELIMINARY GRADING PLAN



ALTERNATE ITEM #1
CAMPER AREA

0 125 250 500
SCALE 1" = 250'

PRELIMINARY EARTHWORK ANALYSIS:

1. TOTAL CUT: 633,000 CY
2. TOTAL FILL: 633,000 CY
3. PRELIMINARY LAYOUT AND EARTHWORK ANALYSIS PERFORMED IN SITEOPS (VERSION 10.9.1.3)

NOTES:

1. 2,100 TOTAL PARKING SPACES PROVIDED
2. AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)
3. PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE

NOTES:

EARTHWORK

The site earthwork quantities were analyzed using the preliminary layout, and it was determined the earthwork volumes can be relatively balanced onsite without the need for excessive import or export of earth material. Estimated earthwork volumes for the site are as follows:

- Cut: ~633,000 Cubic Yards
- Fill: ~633,000 Cubic Yards

Due to the shape of the site it should be noted that the proposed buildings will be north of US Route 29 and visibility from the road will be diminished by the existing topography and vegetation adjacent to the roadway.

STORMWATER MANAGEMENT

The proposed agricultural complex site will require onsite stormwater treatment for new impervious and managed turf areas per Virginia Stormwater Management Program (VSMP) Regulations. The VSMP Regulations have two primary components: water quantity control and water quality treatment.

WATER QUALITY CONTROL

The greatest challenge in meeting the VSMP Quantity requirements is often compliance with the Energy Balance calculation for the 1-year storm. This applies a ratio of the pre-developed volume to the post-developed volume, in addition to an improvement factor, when computing the allowable flow. Extended-detention basins and/or Wet Ponds can be sized to provide the volume needed to meet the water quantity flow requirements for the 1 and 10-year storm events.

WATER QUALITY TREATMENT

The site is largely undeveloped and will need to comply with the 0.41 lb/ac/yr target per the Virginia Runoff Reduction Method (VRRM). The following BMPs could potentially be used to meet the site's water quality requirement:

- Extended-detention Basin
- Wet Pond
- Bioretention
- Grass Channel
- Permeable Pavement
- Sheet Flow to Conserved Open Space

Additionally, undevelopable areas onsite could be placed in conservation to reduce the pollutant removal requirement. This option could also be used in conjunction with the Sheet Flow to Conserved Open Space BMP. Finally, Offsite Nutrient Credits may be purchased to meet the balance of the water quality requirement if one of the three following criteria are met:

- Less than five acres of land will be disturbed
- The post-construction phosphorus control requirement is less than 10 pounds per year
- At least 75% of the required phosphorus nutrient reductions are achieved on-site. If at least 75% of the required phosphorus nutrient reductions cannot be met on-site, and the operator can demonstrate to the satisfaction of the VSMP authority that (i) alternative site designs have been considered that may accommodate on-site best management practices, (ii) on-site best management practices have been considered in alternative site designs to the maximum extent practicable, (iii) appropriate on-site best management practices will be implemented, and (iv) full compliance with post development nonpoint nutrient runoff compliance requirements cannot practicably be met on-site, then the required phosphorus nutrient reductions may be achieved, in whole or in part, through the use of off-site compliance options.

SITE-SPECIFIC STORMWATER MANAGEMENT CONSIDERATIONS

Due to site drainage patterns, this property could potentially utilize extended detention ponds/wet ponds in the low areas adjacent to the proposed impervious areas. There are multiple streams and wetlands within the site that the Army Corps of Engineers will likely consider to be jurisdictional features and any proposed BMP's will need to be strategically located, if trying to limit impacts to these features. Site grades are generally mild, and there is ample space available for a variety of stormwater management measures. Specific stormwater management practices (such as extended detention basins and/or wet ponds) cannot be determined until it is determined what will be constructed during any particular phase of the project. The proposed stormwater measures would be dependent upon how much of the property is developed at any given time and how much land is disturbed for any phase of the project.

ENVIRONMENTAL REVIEW

LOCATION/WATERSHED

The subject property is located in Amherst County adjacent to US Route 29 approximately 0.8 miles southwest of the intersection of US Route 29 and the Tye River. The site is located in the Tye River-Brown Creek Watershed (HUC 020802030701, JM27), which is part of the larger Middle James-Buffalo River Basin (HUC 02080203).

WATER QUALITY

On-site topography is dominated by a broad ridge that extends from the southwestern to northeastern pastures. As a result, runoff is to the south, east, and northeast through multiple small first-order and second-order streams. The un-named tributary streams on the subject property have not been assessed by VDEQ and have not had Use Support ratings assigned. These streams are categorized as Class III surface waters.

WETLANDS

Five (5) potentially jurisdictional wetland areas were observed on-site, generally within 50' of other surface water features. We recommend delineating the boundaries of these potential wetlands. Wetlands near North Amherst Highway are generally vegetated with emergent and scrub-shrub vegetation, while wetlands further to the north and northwest are predominately forested. Potential wetlands generally require the presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators in order

to be considered jurisdictional, and therefore subject to regulation under the Clean Water Act (CWA). US Department of Agriculture (USDA) soils data suggest that none of the soils underlying the subject property are mapped as hydric (wetland) series.

STREAMS

Eleven (11) potentially jurisdictional streams are present on the subject site. Most of these streams originate at small springs/seeps, generally below 700' MSL in elevation. Flow was observed in each channel during the site visit. Recognizing that late autumn / early winter is typically one of the driest periods of most years in Virginia, and there had been no rain within the 10-12 days prior to the site visit, the presence of baseflow in each channel suggests that these streams will likely be considered perennial (jurisdictional). Most of these streams are 1-3' wide and 1-2" deep near their origins, and many flow through previously eroded channels which have gradually naturalized (stabilized) over time. Fencing between pastures and forested areas has helped protect stream channel stability and habitat diversity throughout the property. Most the observed streams are dominated by sand/gravel substrate, with scattered cobbles. Since the site is located near a watershed boundary, channels are generally small (and provide only limited aquatic habitat value). Notably, Stream 6 has an unusual 30' long bedrock cascade. USGS mapping, VDEQ EDM records, USFWS Wetlands Mapper system information, and Amherst County GIS records were reviewed prior to the site visit, to help identify potential stream channels on the subject property.

OPEN WATER

One existing farm pond is located in the southwestern portion of the study area and is approximately 0.4 ac in extent. Available aerial photographs indicate that the pond was constructed prior to 1959. Discharge from this pond is to the southwest, into an un-named Tye River first-order tributary stream (Stream 10). A small up-gradient lacustrine fringe wetland is present northeast of the pond.

PROTECTED SPECIES

If a federal permit is required for a proposed land development project, then the lead federal permitting agency is typically required to ensure compliance with Section 7 of the Endangered Species Act (ESA). To help document the potential presence of protected species nearby, records from three databases were reviewed for this report. These included the U.S. Fish and Wildlife Service (USFWS) IPaC online system, the Virginia Department of Wildlife Resources (VDWR) VAFWIS online system, and the Virginia Department of Conservation and Recreation (VDCR) Natural Heritage (NH) online system. These databases indicated the potential presence of the following species in the surrounding area:

Table 1: Protected Species

USFWS IPAC (common name)	***Scientific name***	***Organism***	***Classification***
Northern long-eared bat	*Myotis septentrionalis*	Mammal	FTST
VDWR VAFWIS (common name)	***Scientific name***	***Organism***	***Classification***
James spinymussel	Parvaspina collina	Mussel	FESE
Northern long-eared bat	Myotis septentrionalis	Mammal	FTST
Yellow lance	Elliptio lanceolata	Mussel	FTST
Little brown bat	Myotis lucifugus lucifugus	Mammal	SE
Tri-colored bat	Perimyotis subflavus	Mammal	SE
Eastern tiger salamander	Ambystoma tigrinum	Amphibian	SE
Peregrine falcon	Falco peregrinus	Bird	ST
Loggerhead shrike	Lanius ludovicianus	Bird	ST
Atlantic pigtoe	Fusconaia masoni	Mussel	ST
Green floater	Lasmigona subviridis	Mussel	ST
Migrant loggerhead shrike	Lanius ludovicianus migrans	Bird	ST
VDCR NHDE (common name)	***Scientific name***	***Organism***	***Classification***
Green floater	Lasmigona subviridis	Mussel	ST

FE – Federal Endangered, FT – Federal Threatened, SE – State Endangered, ST – State Threatened

A total of four aquatic species (freshwater mussels), one semi-aquatic species (amphibian), and six terrestrial species (three bats and three birds) are noted above. No suitable on-site habitat is present for the aquatic or semi-aquatic species (streams are too small). The noted bird and bat species could potentially forage and roost on the property, though. An old log cabin, two barns, and numerous mature trees with loose bark are present in the study area, all of which could be utilized by bats for temporary roosting during spring, summer, and autumn. No caves or other hibernacula were noted. Terrestrial habitat resources present on-site are similar to other properties nearby and throughout the surrounding County / region.

HABITAT

The subject property appears to have been in agricultural use for over 60 years (since at least 1959), primarily for livestock. Woven wire fence and/or high-tensile / barbed wire fence is present between most forested areas and adjacent pastures. This fencing has helped to protect the forested areas, which have well-developed canopy, sub-canopy (understory), and herbaceous strata vegetation. Some scrub-shrub vegetation is located along the North Amherst Highway property line. No unique terrestrial habitat was observed, though one unusual 30' solid bedrock cascade is present in a portion of Stream 6.

CULTURAL RESOURCES

Available records from the Virginia Department of Historic Resources (VDHR) V-CRIS system were evaluated as part of this environmental review effort. The following mapped resources are located within 5,000' (one mile) of the subject property:

Table 2: Cultural Resources

VDHR ID	Resource	Distance from Site	Classification
005-0143	Boxley Farm / George Mays Farm	On-site	Not Evaluated
005-0011	Mtn View Farm / Spencer Plantation	1,600' to SW	Listed (NRHP, VLR)
005-0157	Pine Top School	700' to SE	Not Evaluated
44NE0051	Native American open-air site	3,100' to NE	Not Evaluated
005-5049	Bridge 1939	3,400' to NE	Not Eligible

If a project is proposed by a federal agency, receives federal funding, or requires a federal permit, then consultation with VDHR staff is usually required to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA). Some state-funded projects also require this review. The NHPA is primarily concerned with cultural resources that are Listed, Eligible for Listing, or Potentially Eligible for Listing on the National Register of Historic Places (NRHP) or the Virginia Landmarks Register (VLR). The proposed project here will alter the local landscape significantly and permitting agencies may require consultation with VDHR staff regarding previous Boxley Farm / George Mays Farm (on-site) resources during the project permitting process. It is possible that a Phase I archaeological survey (with shovel testing) will be necessary. During the site visit, one log cabin and two barns were observed on the subject property. The log cabin is noteworthy, as it is still relatively intact. The other noted off-site cultural resources are unlikely to be impacted by the proposed project, though VDHR will make the final determination regarding potential effects.

SOILS

According to the U.S. Department of Agriculture (USDA) Web Soil Survey (WSS), the subject property is underlain by approximately 12 soil series. None of the mapped soils are listed as hydric (wetland) soils. All are Hydrologic Group B soils, and approximately 55% are listed as either Prime Farmland Soils or Farmland Soils of Statewide Importance by the USDA. During the site visit, a potential sinkhole was observed in the southeastern portion of the property, near North Amherst Highway (and up-gradient of Wetland A). A subsurface investigation would be required to determine the extents of the potential sinkhole, and that potential impacts it could pose to development. On-site soil series include the following:

Table 3: Soil Series

Soil Series	Soil Series Name	Farmland Soil?	Percent of Study Area
4D	Clifford clay loam, 15-25% slopes, severely eroded, well- drained	No	1%
4E	Clifford clay loam, 25-50% slopes, severely eroded, well- drained	No	3%
5B	Clifford loam, 2-7% slopes, well-drained	Yes	14%
5C	Clifford loam, 7-15% slopes, well-drained	Yes	23%
5D	Clifford loam, 15-25 slopes, well-drained	Yes	12%
5E	Clifford loam, 25-50% slopes, well-drained	No	7%
6D	Clifford loam, 15-25% slopes, very stony, well-drained	Yes	4%
6E	Clifford loam, 25-50% slopes, very stony, well-drained	No	31%
15B	Delanco-Elsinboro complex, 2-7% slopes, rarely flooded, well-drained	Yes	2%
36D	Stott Knob-Rhodhiss complex, 15-25% slopes, well-drained	No	1%
36E	Stott Knob-Rhodhiss complex, 15-25% slopes, well-drained	No	2%
46B	Wintergreen loam, 2-7% slopes, well-drained	Yes	<1%

FLOODPLAINS

The Federal Emergency Management Agency (FEMA) online Flood Insurance Rate Map (FIRM) FIRMette mapping system indicates that the subject property is mapped as being in an Area of Minimal Flood Risk (Zone X). No regulated flood zones are mapped on the subject property (according to FEMA Map Panel 51009C0190B, dated 9/19/2007).

NOISE

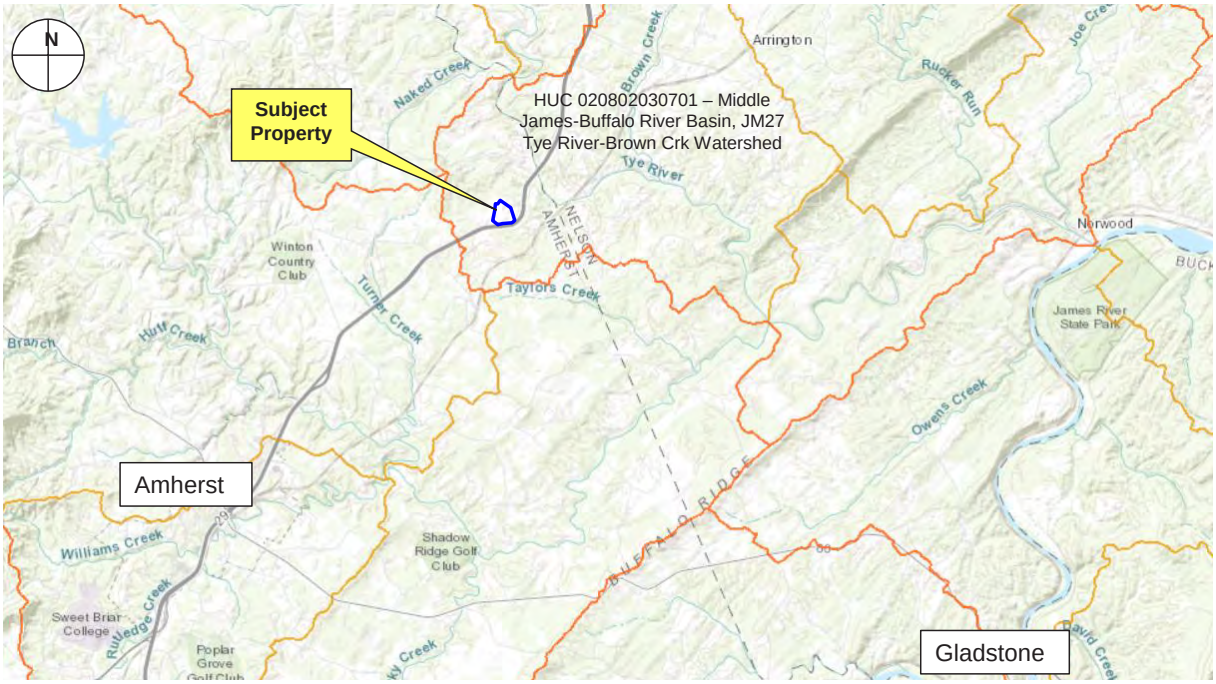
There may be a temporary increase in ambient noise levels during construction (grading) activities. During normal future operations, the proposed site uses are expected to produce similar noise levels to other nearby rural, agricultural properties.

AIR QUALITY

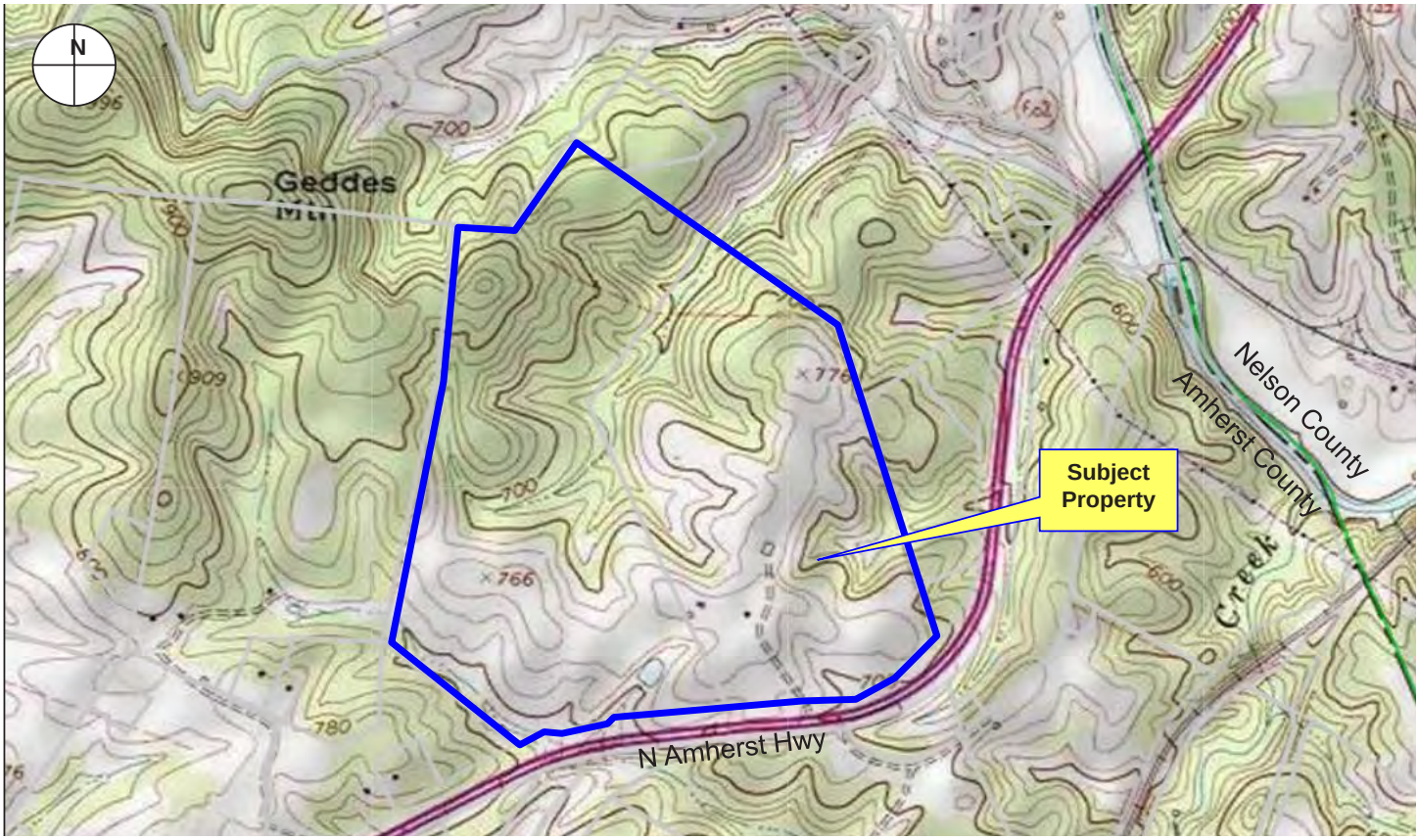
The subject property is not located in an Air Quality Non-Attainment Area, and the proposed project is unlikely to significantly impact long-term local air quality. Some minor temporary air quality effects may occur during grading and construction efforts.

PERMITTING

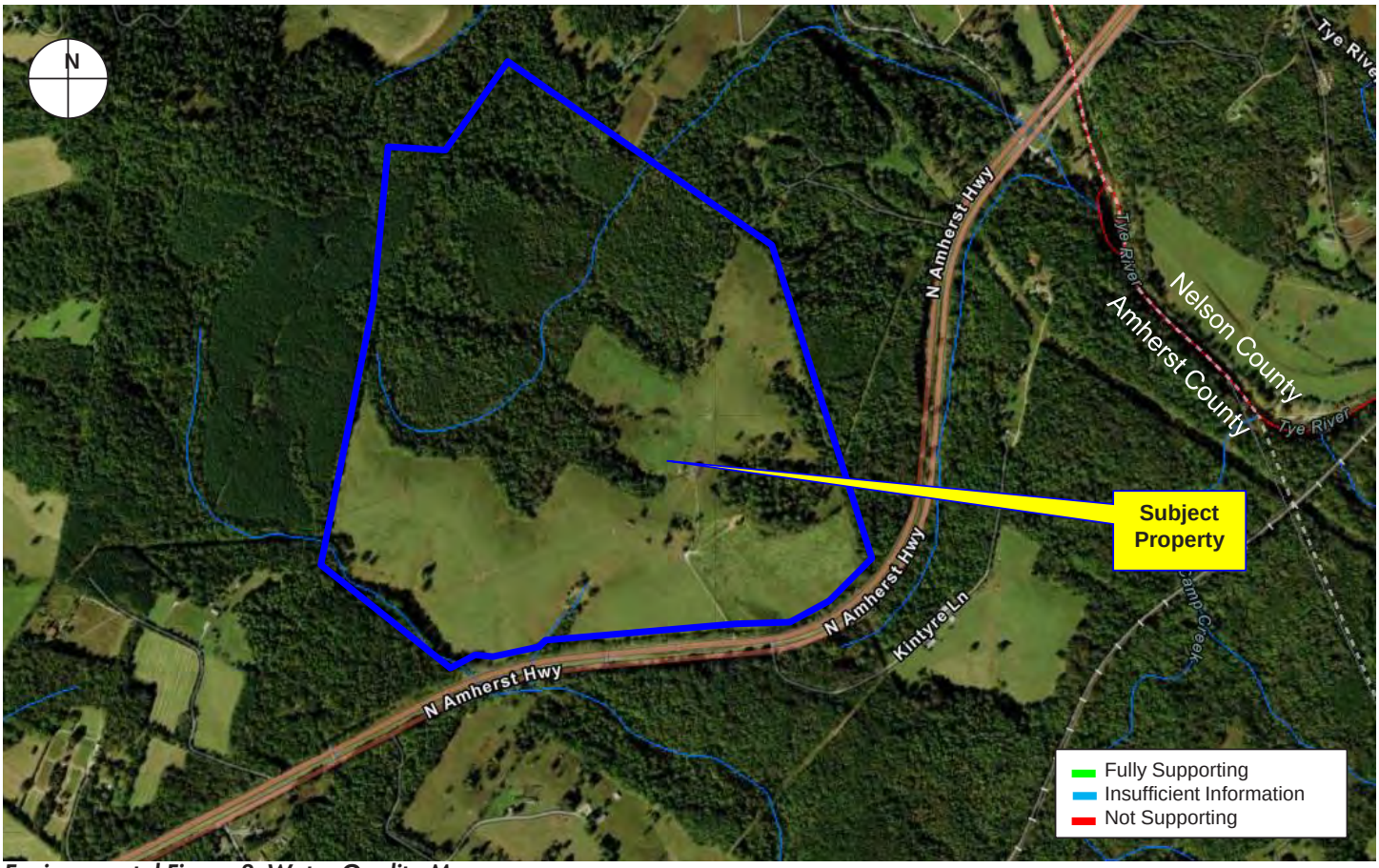
Based on field observations and review of conceptual site plan drawings, some proposed site elements could result in stream and/or wetland impacts. Specifically, the "1.5-acre Pond" would likely affect Streams 3 and 4, while the "ATV/Riding Trails" and "16-Cabin Campground" access road would require crossings of multiple streams. If the cumulative extent of impacts can be minimized, then the project may qualify for a US Army Corps of Engineers (USACE) Nationwide Permit (NWP). If these three project elements could be designated as a future Phase II, then other Phase I development (in upland areas) could likely proceed without a Clean Water Act (CWA) permit requirement from the USACE or Virginia Department of Environmental Quality (VDEQ). Since none of the on-site stream channels have a watershed area larger than five (5) square miles, no permit from the Virginia Marine Resources Commission (VMRC) should be required for site development. A VDEQ Virginia Stormwater Management Program (VSMP) stormwater permit and local Land Disturbance (LD) permit will likely be required, depending on the extent of soil disturbance.



Environmental Figure 1: Location/Watershed Map



Environmental Figure 2: Topographic Map



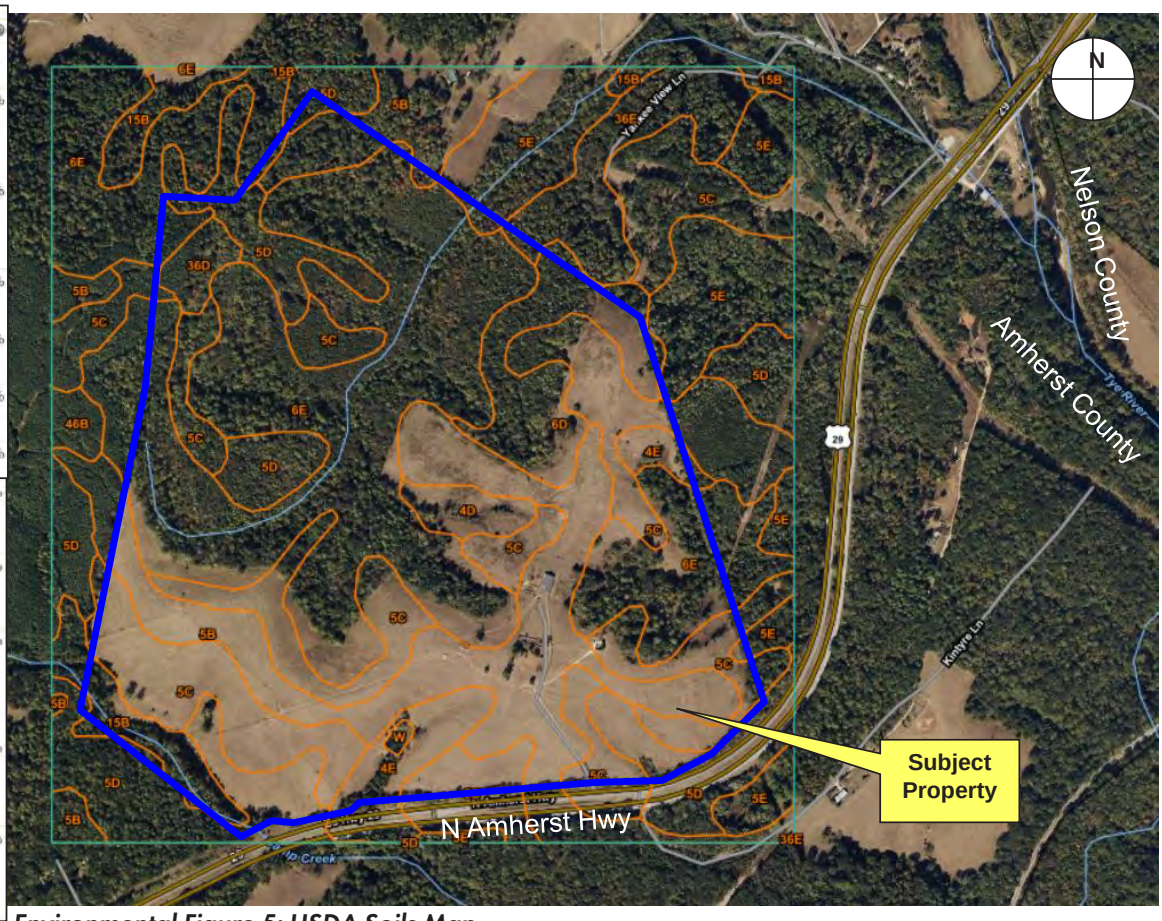
Environmental Figure 3: Water Quality Map

Environmental Figure 4: FEMA Floodplain Map

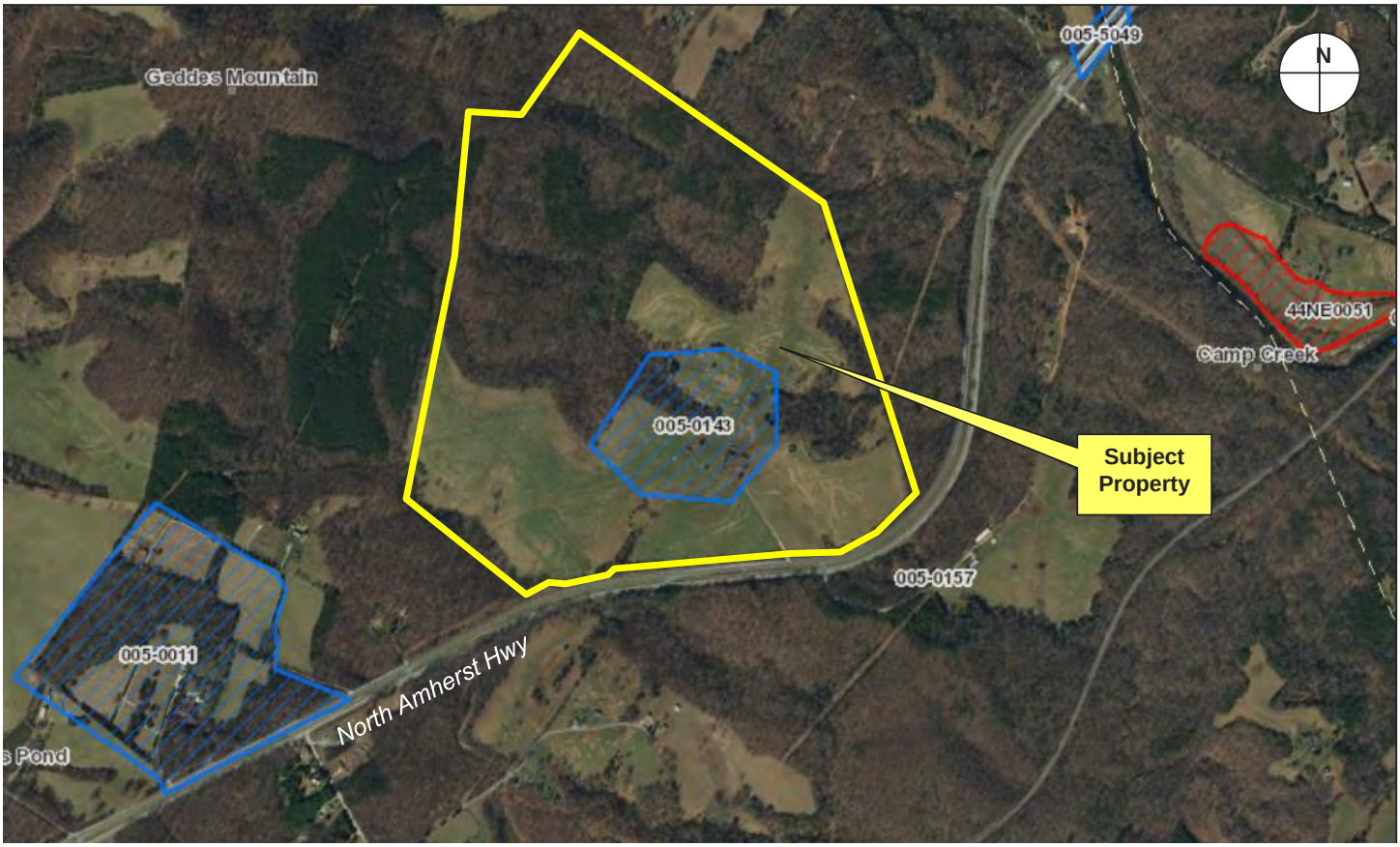
Amherst County, Virginia (VA009)

Amherst County, Virginia (VA009)

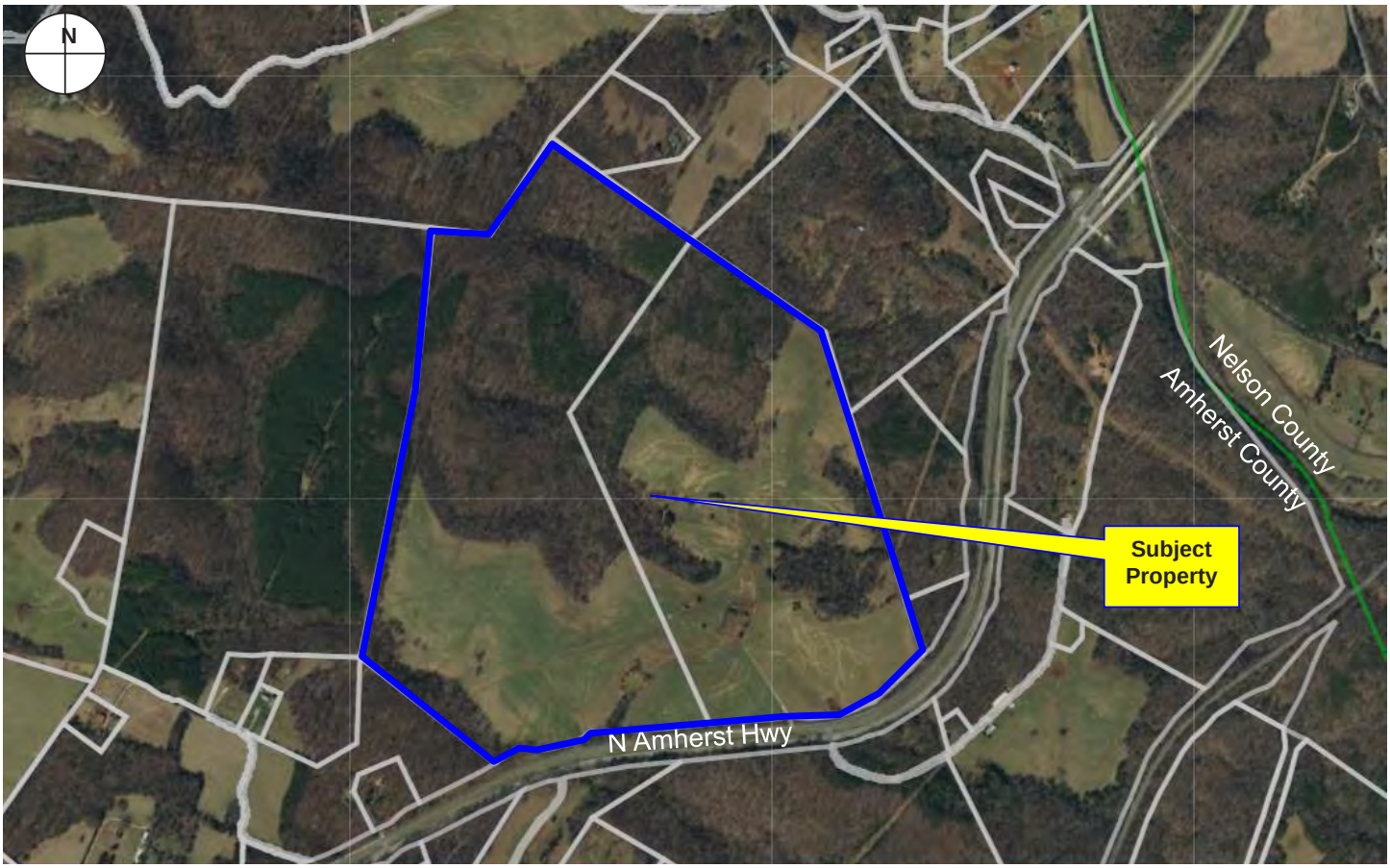
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4D	Clifford clay loam, 15 to 25 percent slopes, severely eroded	4.6	0.9%
4E	Clifford clay loam, 25 to 50 percent slopes, severely eroded	12.4	2.5%
5B	Clifford loam, 2 to 7 percent slopes	71.4	14.4%
5C	Clifford loam, 7 to 15 percent slopes	102.0	20.5%
5D	Clifford loam, 15 to 25 percent slopes	62.2	12.5%
5E	Clifford loam, 25 to 50	41.9	8.4%
6D	Clifford loam, 15 to 25 percent slopes, very stony	17.9	3.6%
6E	Clifford loam, 25 to 50 percent slopes, very stony	145.5	29.3%
15B	Delanco-Elsinboro complex, 2 to 7 percent slopes, rarely flooded	15.6	3.1%
36D	Stott Knob-Rhodhiss complex, 15 to 25 percent slopes	3.7	0.7%
36E	Stott Knob-Rhodhiss complex, 25 to 50 percent slopes	16.8	3.4%



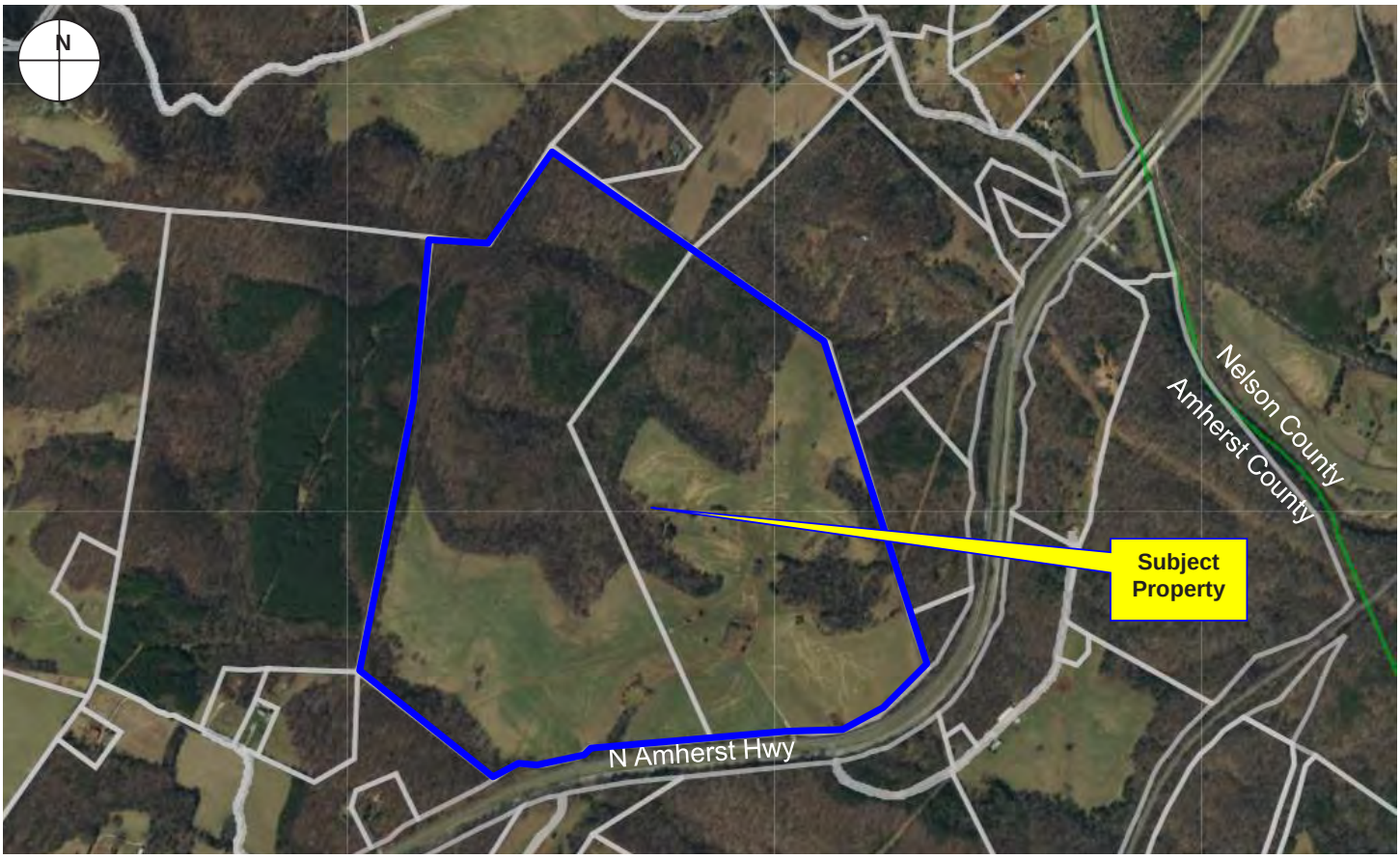
Environmental Figure 5: USDA Soils Map



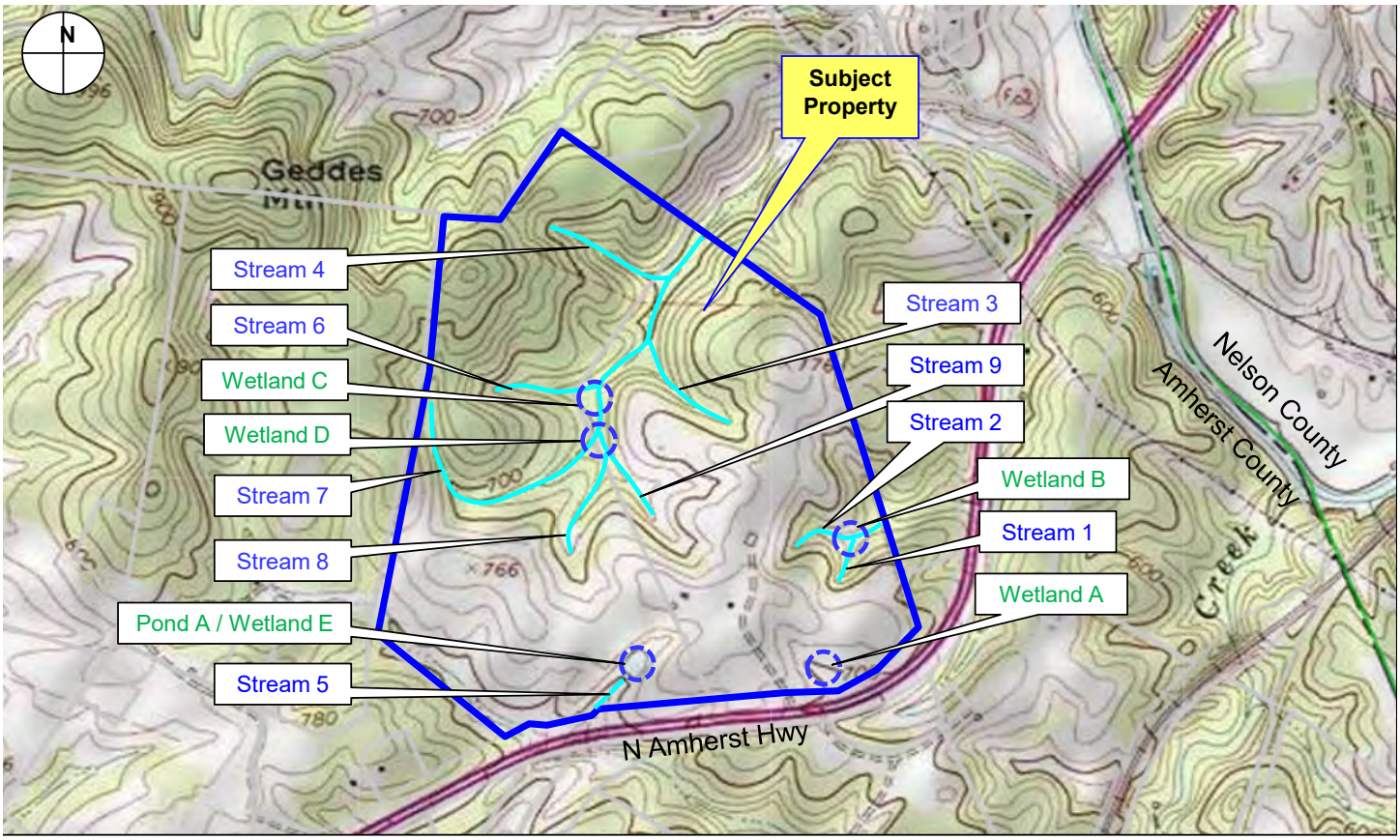
Environmental Figure 6: Cultural Resources APE Map



Environmental Figure 7: Aerial Photograph/Parcel Map



Environmental Figure 8: Prime Farmland Soils Map



Note: Approximate locations only. Streams and wetlands have not been delineated.

Environmental Figure 9: Streams and Wetlands Map

Photo 1: Typical small first-order stream in forested area

Photo 2: Typical medium second-order stream in forested area

Photo 3: Typical pasture (Wetland A and N Amherst Hwy in background)

Photo 4: Agricultural remnants (trough/spring box and cattle skeleton)

Photo 5: Large barn (south central portion of site)

Photo 6: Small barn (south central portion of site)

Photo 7: Old log cabin with stone/brick chimney (central portion of site)

Photo 8: On-site pond (southwestern portion of site)

Photo 9: On-site cell tower (southeastern portion of site)

Photo 10: Remnants of demolished house (southeastern portion of site)

Photo 11: Possible sinkhole (photo 1 of 2) (southeastern portion of site)

Photo 12: Possible sinkhole (photo 2 of 2) (southeastern portion of site)

UTILITY INFRASTRUCTURE REVIEW

The proposed agricultural complex site within Amherst County requires the evaluation of existing and potential infrastructure necessary to provide potable water, sanitary, natural gas, electrical power, and telecommunication/fiber services to the site. The following content provides information regarding the existing utility services, as well as the proposed utility expansion and improvements that would be required for the site.

Overall, the information contained in the content below is for discussion and planning purposes only.

WATER INFRASTRUCTURE

The site currently has no public water service, and the closest existing public water infrastructure in Amherst County is over 5 miles away. It was determined that it is not economically feasible to extend this system to serve the site, therefore the site will have to be served by a private system. The property has an existing well on-site that served the demolished house, seen in photographs 13 & 14, but the depth, capacity, and water quality of this existing well is unknown.

Photo 13: On-site well #1 (southwestern portion of site)

Photo 14: Inside of on-site well #1 structure (southeastern portion of site)

There a second well on-site, located in the pasture of the southwestern corner of the property (see photograph 15). Amherst County Department of Health Records indicate that this well is a Class IIIC well, cased and grouted to a depth of 20 ft, and was installed in 2002. The depth of the well is unknown, but due to the well's classification as a Class IIIC well and being cased and grouted to a depth of 20 ft it can be implied that the depth of the well is less than 100 feet. VDH well classifications are as follows:

Class III - Private wells constructed to be used as a source of drinking water. There are three subclasses:

a. Class IIIA - Drilled wells in which the annular space around the casing is grouted to a minimum depth of 20 feet.

(1) The well shall be drilled and cased to a depth of at least 100 feet.

(2) The cased drill hole shall pass through at least 50 feet of collapsing material such as caving sand, gravel or other material that will collapse against the casing.

b. Class IIIB - Drilled wells in which the casing is installed to a minimum depth of 50 feet and the annular space around the casing is grouted to at least 50 feet.

c. Class IIIC - Drilled, bored, driven or jetted wells other than Class IIIA and Class IIIB.

Class IV - Private wells constructed for any purpose other than use as a source of drinking water.

The capacity and the water quality of the well are still unknown and pump/water quality testing would be required to determine if the well would be able to produce enough water to serve the proposed development.

Photo 15: On-site well #2 (southwestern portion of site)

Wells, either new or existing, will be utilized to meet the water demand of the site. The estimated daily water demand for the agricultural center can be seen in table 4.

Table 4: Estimated Daily Water Demand

	Units	Quantity	Demand (gpd)	Total
Campground	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
Livestock	Animals***	215	10	2,150
Greenhouse	SF of Growing Area	5,000	0.5	2,500
			Total Demand =	**26,650 gpd**

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
***Based upon number of horse stalls & cattle pens (Assuming 1 horse per stall & 5 cows per pen).
Note: Alternative Item #1 (Camper Area) is included in the calculations

Pump testing and water quality testing may be performed on the existing wells to determine if they are able to meet the estimated ~27,000 gallons/day demand. However, for the purposes of this report, it will be assumed that the existing wells are inadequate and new wells will be drilled to meet this demand. Based upon the size of the property, it is assumed that multiple wells capable of producing ~10,000 gallons/day will be found on the site. Three of these wells may be utilized to meet the ~27,000 gallons/day demand and will also provide excess capacity. Any excess capacity in the system will help eliminate over pumping of the wells and allow for redundancy in the system if one of the wells fails or is under maintenance.

If Amherst and Nelson Counties decide to move forward with this project, the next steps would be to verify the proposed flows with the Virginia Department of Health, perform pump/water quality testing on any existing wells on the property, and to install test wells on the site. Any new wells will have to be strategically located onsite to ensure they meet the desired capacity and the VDH separation requirements for class III wells (private wells to be used for drinking water) from other features, such as building foundations or sewage systems. Once the well locations are determined and it is verified that they will be able to meet the demand, the wells will be put into production.

WASTEWATER INFRASTRUCTURE

Per Amherst County Department of Health records, a private drainfield was once utilized to serve the now demolished house (see photograph 16). It is unknown if the drainfield was removed during the demolition of the house, or if it was simply abandoned in place. A subsurface investigation would be required to determine if the drainfield still exists, the potential extents of the drainfield, and if the drainfield would pose any problems to the proposed development.

Photo 16: Sketch from Amherst County Department of Health records depicting a drainfield serving the now demolished house

The site currently has no public sanitary service, and the closest existing public sanitary infrastructure in Amherst County is over 5 miles away. It was determined that it is not economically feasible to extend this system to serve the site, therefore the site will have to be served by a private system. Drainfields will be utilized to handle the sanitary flows of the site. The estimated daily sanitary sewer flow for the agricultural center can be seen in table 5.

Table 5: Estimated Sanitary Sewer Flows

	Units	Quantity	Demand (gpd)	Total
Campground	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
			Total Demand =	**22,000 gpd**

* Based upon parking spaces provided. Assuming 1 person per vehicle.

**Based upon available arena seating.

Note: Alternative Item #1 (Camper Area) is included in the calculations

According to the U.S. Department of Agriculture (USDA) Web Soil Survey (WSS), the majority of the soils onsite have a high (10-100 micrometers per second) saturated hydraulic conductivity. This means the soils have a higher infiltration rate and results in a smaller required drainfield footprint. Pretreatment of the wastewater effluent may also be utilized to further decrease the required footprint of the drainfields. However, pretreatment would increase the overall cost of the sanitary system.

Based upon the size of the property, it is estimated that there will be adequate space to install drainfields on the site. It should be noted that separate drainfields may be utilized on the site to treat each individual site component (1 drainfield for the campground, 1 drainfield for the equestrian center, etc.).

If Amherst and Nelson Counties decide to move forward with this project, the next steps would be to verify proposed sanitary flows with the Virginia Department of Health and perform a soils evaluation report to confirm the infiltration rates. The footprints of the proposed drainfields may then be determined and located on the proposed development.

NATURAL GAS INFRASTRUCTURE

According to the State Corporation Commission of Virginia, Columbia Gas of Virginia is the regulated natural gas provider for Amherst County. Hurt & Proffitt contacted Columbia Gas of Virginia to determine if the site is within the company's service area and was eligible for natural gas service. It was determined that the site is outside of the service area and will not be able to utilize natural gas. Propane, electric, or combinations of the two are available alternatives that will need to be examined during the final design phase to determine the most cost effective and efficient source to use in place of natural gas.

ELECTRICAL INFRASTRUCTURE

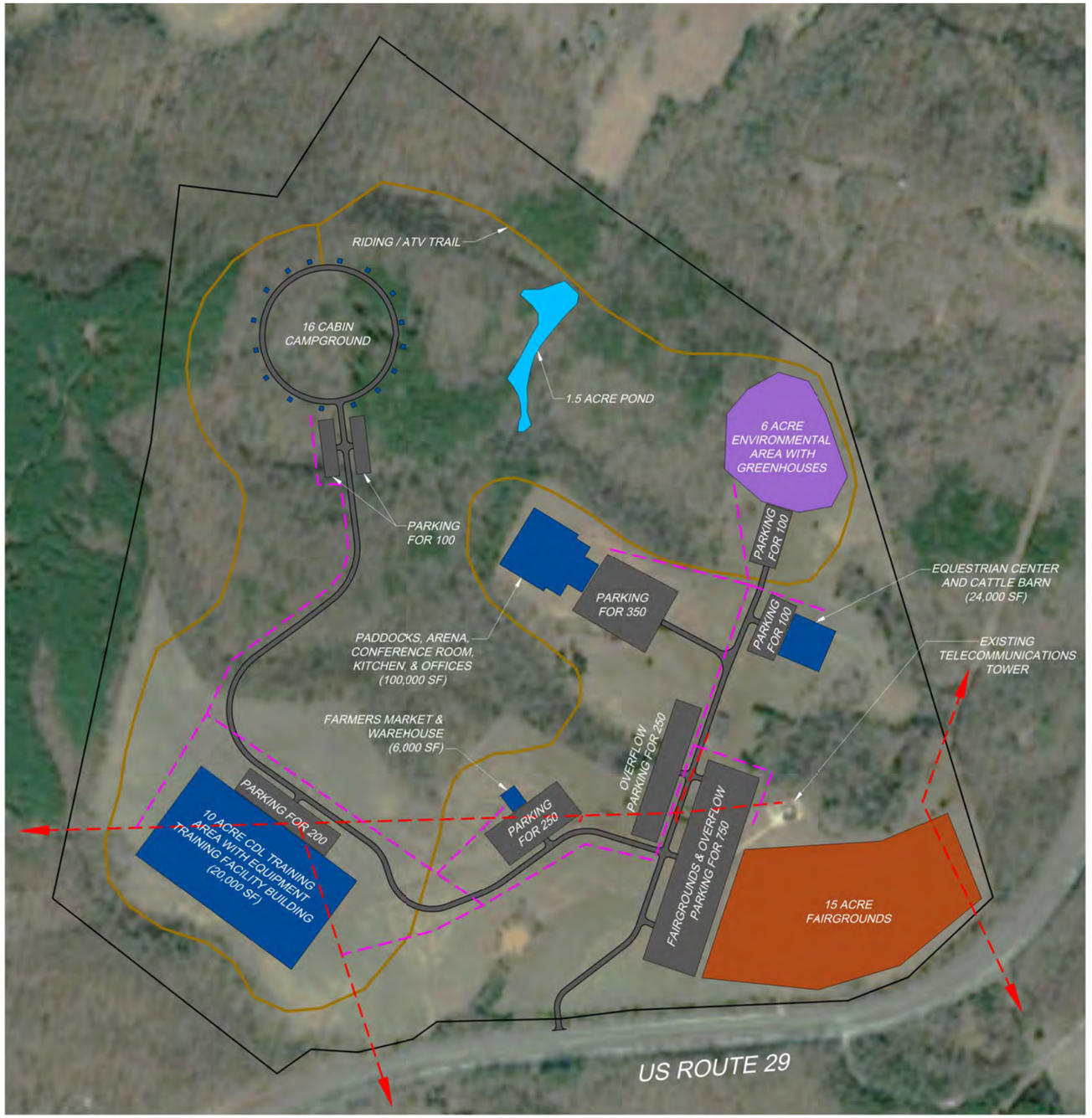
The site is served by American Electric Power (AEP). There are existing single phase overhead lines running through the site. One line currently runs to the existing barns, cell tower, and demolished house site and there is another line that passes through the southeast corner of the site and does not run to

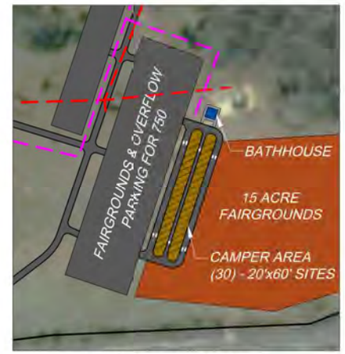
any of the site's existing features (see existing site conditions map). The site will be able to be served from the existing lines entering the property, however, the alignment of the lines will need to be adjusted and existing poles will need to be relocated. Since the existing lines are limited to the southern portion of the site, new lines will also need to be installed to serve all improvements on the northern section of the property such as the campground and arena (see figure 6). A total length of ~9,200 lf of electric lines will need to be relocated/ installed to serve all proposed improvements on the site.

Figure 6: Electrical Infrastructure Map

KEY

- EXISTING ELECTRIC LINE
- PROPOSED ELECTRIC LINE





ALTERNATE ITEM #1
CAMPER AREA

0 125 250 500
SCALE 1" = 250'

NOTES:

1. AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)
2. PARCEL DATA TAKEN FROM MADISON COUNTY, VIRGINIA GIS WEBSITE

FIGURE 6: ELECTRICAL INFRASTRUCTURE MAP

NOTES:

FIBER OPTIC/TELECOMMUNICATIONS INFRASTRUCTURE

There is no existing fiber optic infrastructure available for the site. However, telecommunications services are commercially available through a private ISP provider.

UTILITY PLAN SUMMARY

Table 6: Summary of Proposed Utility Infrastructure

Utility	Proposed Infrastructure
Water	Multiple Onsite Wells
Wastewater	Multiple Onsite Drainfields
Natural Gas	Not Available
Electrical	Single Phase Power Available from AEP New Lines Will Need to be Relocated/Installed
Fiberoptic/ Telecommunications	No Fiberoptic Infrastructure Available Telecommunications Services Available Through a Private ISP Provider

TRANSPORTATION ANALYSIS

GENERAL TRAFFIC CONSIDERATIONS

Due to Covid-19, the 2020 VDOT published AADT values vary from normal traffic patterns in previous years. VDOT has estimated that the 2020 DVMT (Daily Vehicle Miles Travelled) for the entire state of Virginia has decreased 11% from 2019. These values may return to the normal levels in the future, and therefore, for the purposes of this site comparison, we have used 2019 VDOT published AADT values.

EXISTING ROADWAY NETWORK

US Route 29 (North Amherst Highway) is a four lane divided highway with a posted speed limit of 60 MPH. The 2019 average daily traffic volumes are estimated to be 14,000 VPD. There are two full median crossovers along the frontage of the site, and there is an existing gravel entrance to the site.

INTERSECTION SPACING/SITE DISTANCE REQUIREMENTS

When the site is developed, the existing gravel entrance to the property will have to be upgraded to a VDOT commercial entrance. The VDOT Road Design Manual (Appendix F, Table 2.2) gives guidance on minimum spacing for commercial entrances, intersections, and median crossovers for a Principal Arterial road with a posted speed limit over 50 MPH. The minimum spacing requirement for commercial accesses from full median crossovers is 1,320 feet. This requirement restricts the location of the new entrance to either of the two existing full median crossovers.

The intersection and stopping sight distance requirements for a four lane major divided roadway with posted speed limit of 60 MPH may be found in the following table.

Table 7: Site Distance Requirements

Sight Distance Requirements	
Sight Distance Left	710 Feet
Sight Distance Right	820 Feet
Stopping Sight Distance	570 Feet

If the new entrance to the site were to be placed at the eastern full median crossover, the existing curve in the road along with the existing topography would limit the intersection sight distance and cause the entrance to not meet the VDOT requirement. It should be noted that even though the intersection sight distance requirement cannot be met, a VDOT design waiver, waiving that requirement, may be granted if the stopping sight distance requirement can be satisfied.

However, both the intersection sight distance requirement and the stopping sight distance requirement will be satisfied if the new entrance to the site were to be placed at the western full median crossover. Therefore, the proposed entrance shall be placed at the western full median crossover along the frontage of the property (See Entrance Location & Roadway Improvements Map).

ANTICIPATED TRIP GENERATION

The proposed agricultural center does not fall under any of the existing Institute of Transportation Engineers (ITE) Trip Generation Manual (10th edition) codes. However, since the site has several entities open for public use, such as the riding/atv trail and the fairgrounds, the site was analyzed under the ITE trip generation code for a public park. Individual entities on the site, such as the campground, farmers market, office, and arena, were also analyzed individually to determine the total trips generated by all proposed entities within the development.

According to VDOT's published 2019 traffic data, the existing AADT on the segment of US Route 29 (North Amherst Highway) on which the site lies is 14,000 vpd. The peaking factor, K, is 0.079, so approximately 1106 vehicles travel during the peak hour of an average weekday. With a directional factor of 0.614, approximately 679 vehicles travel in the peak direction. Thus, in the AM peak, 679 vehicles travel southbound and 427 travel northbound. Similarly, in the PM peak, 427 vehicles travel southbound and 679 travel northbound.

Using the directional factor of 0.614 as a guide, it was assumed that 61.4% of the trips to the site travel in the same direction as the peak traffic (61.4% southbound in the AM peak and 61.4% northbound in the PM peak). Thus, in the AM peak, 42 of the 117 anticipated entering trips make a NB left turn into the site and the remaining 75 trips make a SB right turn into the site. In the PM peak, 78 of the 122 anticipated entering trips makes a NB left turn into the site and the remaining 44 trips make a SB right turn into the site. The trip generation data for the AM and PM peak hours of an average weekday may be seen in table 8.

The ITE Trip Generation Manual 10th Edition does not provide a daily trip factor for all applicable land uses of the site. Based upon average total trip ends during the peak hours (281 vehicles per day) and assuming 10% of daily traffic occurs during the peak hour, we estimate the development will generate 2,810 trips per day on an average weekday.

Table 8: Trip Generation Data for AM & PM Peak Hours of an Average Weekday

AM Peak Hour	ITE Code	Rate	Total Trip Ends	Total Trips Entering	Total Trips Existing
Ag Center Development	411 (Public Park)	0.02 Trips/Acre	6	4	2
Offices/ Classrooms	710 (General Office Building)	1.16 Trips/100 SF Gross Floor Area	33	23	4
Arena	460 (Arena)	0.13 Trips/Seat	182	66	116
Campground	416 (Campground/RV Park)	0.21 Trips/Site	4	2	2
Farmers Market	858 (Farmers Market)	174.9 Trips/Acre	18	9	9
Greenhouse	817 (Nursery/Garden Center)	2.43 Trips/100 SF Gross Floor Area	13	7	6
AM Peak Hour Total	N/A	N/A	256	117	139
PM Peak Hour	**ITE Code**	**Rate**	**Total Trip Ends**	**Total Trips Entering**	**Total Trips Existing**
Ag Center Development	411 (Public Park)	0.11 Trips/Acre	33	19	14
Offices/ Classrooms	710 (General Office Building)	1.15 Trips/100 SF Gross Floor Area	33	6	27
Arena	460 (Arena)	0.13 Trips/Seat	182	66	116
Campground	416 (Campground/RV Park)	0.27 Trips/Site	5	4	1
Farmers Market	858 (Farmers Market)	179.84 Trips/Acre	18	9	9
Greenhouse	817 (Nursery/Garden Center)	6.94 Trips/100 SF Gross Floor Area	35	18	17
PM Peak Hour Total	N/A	N/A	306	122	184

TURN LANE ANALYSIS

Using the roadway & trip generation data above, a turn lane analysis was performed per Appendix F – Section 3, of the VDOT Roadway Design Manual (RDM AP-F). Per VDOT (RDM AP-F) Figure 3-3 (Warrants for left turn storage lanes on four lane highways), seen below, a left turn storage lane must be provided to accommodate the traffic turning left into the site during the AM & PM peak hours.

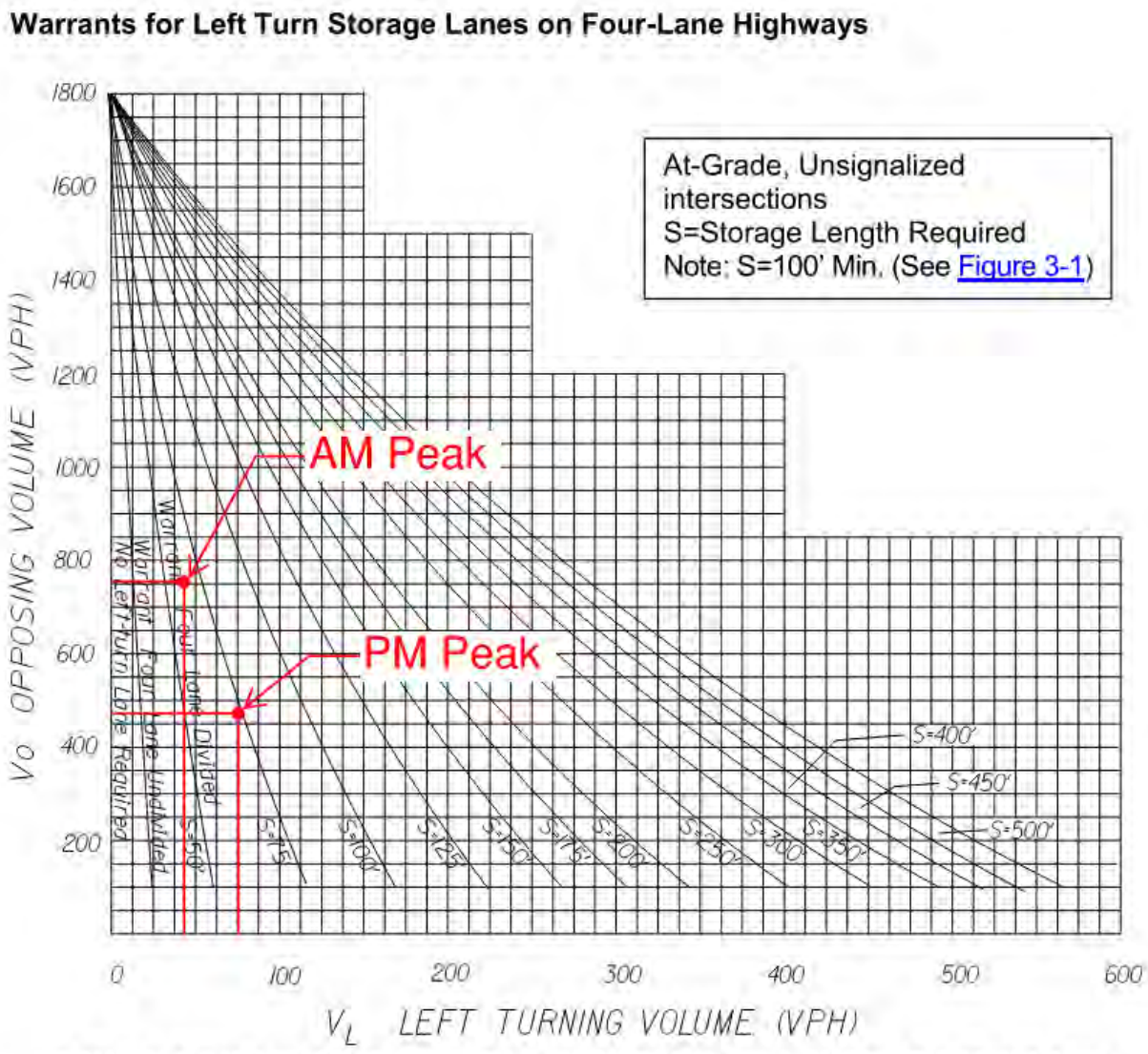


FIGURE 3-3 WARRANTS FOR LEFT TURN STORAGE LANES ON FOUR LANE HIGHWAYS

Per VDOT (RDM AP-F) figure 3-27 (Warrants for Right Turn Treatment for a Four Lane Highway), seen below, a full-width right turn lane and taper is required to accommodate the AM

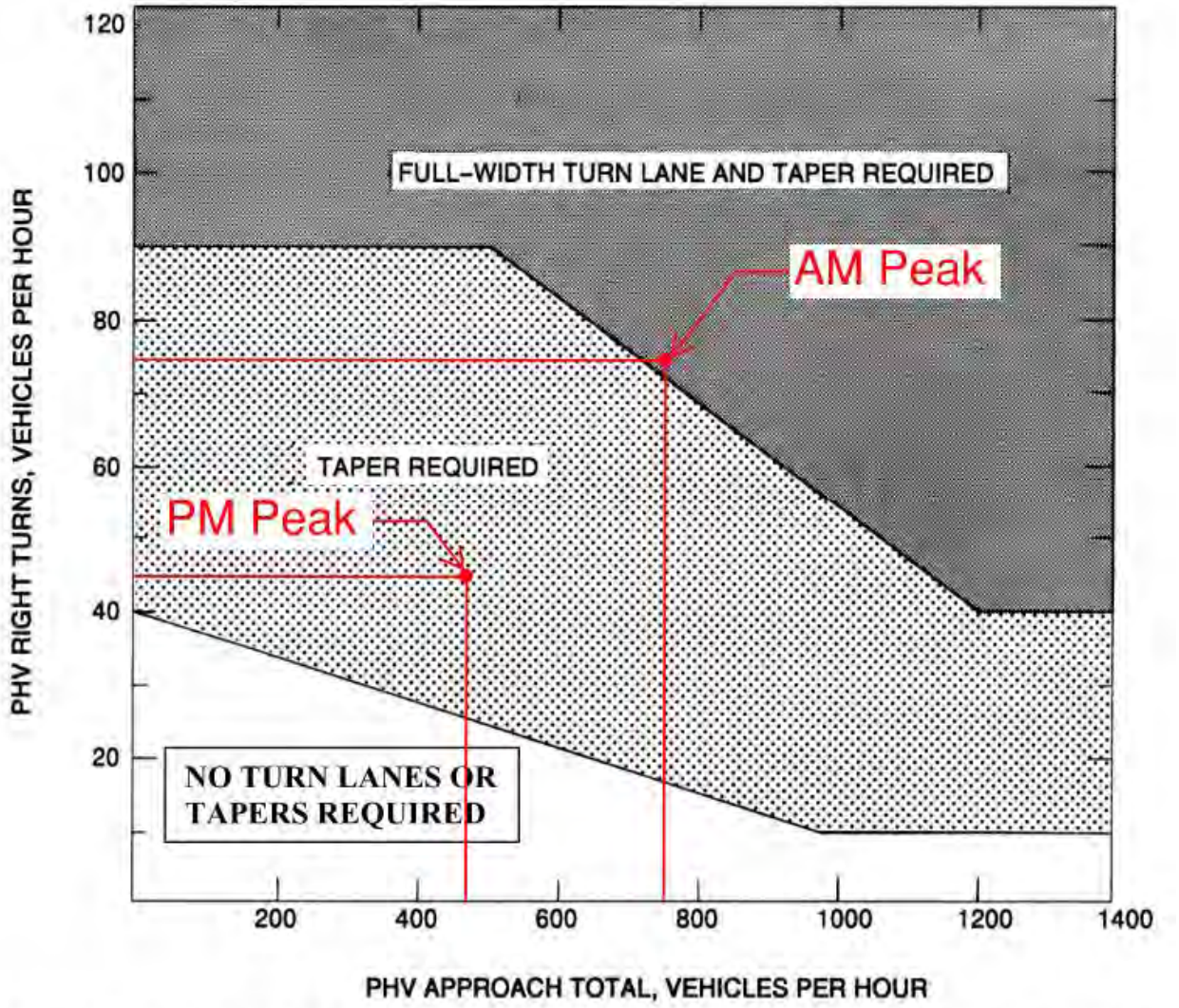
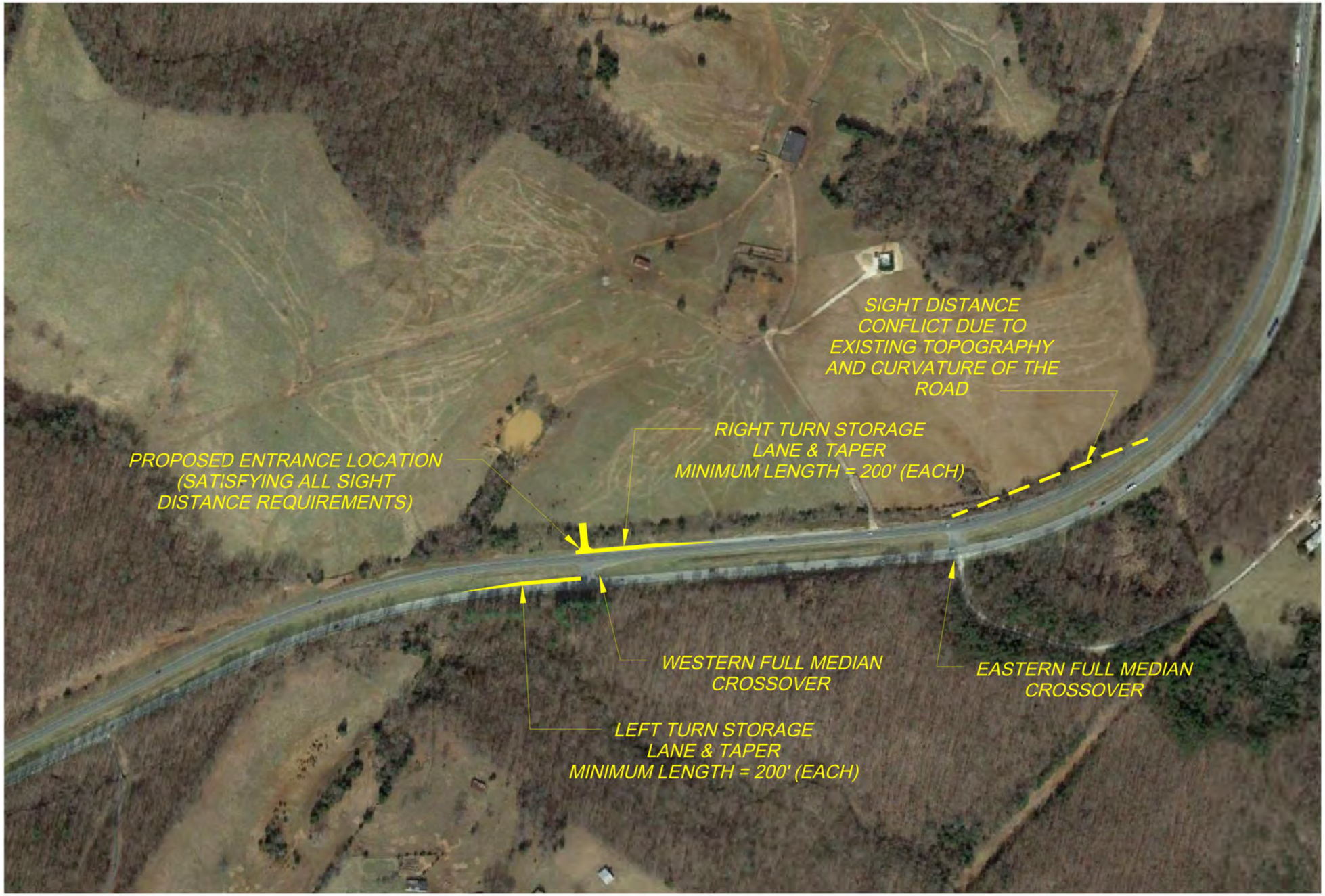


FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)

Per VDOT (RDM AP-F) figure 3-1 (Right and Left Turn Lane Criteria for Single and Dual Lanes), storage lanes are required to be a minimum length of 200 ft for rural highways with design speeds of 50 miles per hour or greater, and the associated tapers are also required to have a minimum length of 200 ft. The required roadway improvements can be seen in the Entrance Location & Roadway Improvements Map (Figure 7).

If Amherst and Nelson Counties decide to move forward with this project, the next steps would be to verify the proposed requirements with the Virginia Department of Transportation and perform an in-depth traffic study to confirm the existing and proposed conditions. Note that Alternative Item #1 (Camper Area) is not included in the trip generation and turn lane warrant calculations. However, inclusion of the item yields the same turn lane requirements.

NOTES:



NOTES:

1. AERIAL IMAGERY TAKEN FROM GOOGLE EARTH (DATED 2/25/2019)

0 75 150 300
SCALE 1" = 150'

FIGURE 7: ENTRANCE LOCATION AND ROADWAY IMPROVEMENTS

ADDITIONAL CONSIDERATIONS

ENGINEERING AND PERMITTING

The site would have to go through the engineering design phase and undergo reviews by Amherst County, the Virginia Department of Transportation, the Virginia Department of Health, and the Department of Environmental Quality. The property would also have to be rezoned from A-1 (Agricultural Residential District) to B-2 (General Commercial District). There would also be additional engineering, review, and permitting fees incurred by the County if the site was to undergo the full site design process.

DEVELOPMENT COSTS

The following estimate reflects the probable cost to develop the site.

Disclaimers:

1. This cost estimate only accounts for improvements to the site. It does not incorporate the cost of the proposed buildings onsite.
2. This cost estimate reflects the estimated costs at the time of this report. Costs are subject to change due to inflation, supply & demand, etc.

Engineer's Opinion of Probable Site Construction Cost - Amherst/Nelson County Agricultural Center

Created: July 29, 2022
Data Assumptions: On-Site Preperation & On-Site Improvements were estimated using SITEOPS (Version 10.9.1.3), See Attachments for water and santiary estimates

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE PREPARATION					
Site Clearing					
Clearing	45	AC	$5,000.00	$225,000.00	
Demolition	1	LS	$150,000.00	$150,000.00	
Topsoil Strip/Cut	120,000	CY	$2.00	$240,000.00	
Topsoil Fill	90,000	CY	$2.00	$180,000.00	
Topsoil Export (onsite disposal)	30,000	CY	$8.00	$240,000.00	
Total Site Clearing				$1,035,000.00	$1,035,000.00
Grading Cut					
Earth Cut	633,000	CY	$6.00	$3,798,000.00	
Rock Cut	1,000	CY	$100.00	$100,000.00	
Unsuitable Cut	5,000	CY	$20.00	$100,000.00	
Total Grading Cut				$3,998,000.00	$3,998,000.00
Grading Fill					
Earth Fill	633,000	CY	$6.00	$3,798,000.00	
Total Grading Fill				$3,798,000.00	$3,798,000.00
Other Preparation					
Fine Grading (Building)	66,000	SY	$2.00	$132,000.00	
Fine Grading (Non-Building)	105,000	SY	$1.00	$105,000.00	
Erosion Control	145	AC	$10,000.00	$1,450,000.00	
Seeding	115	AC	$2,000.00	$230,000.00	
Total Other Preparation				$1,917,000.00	$1,917,000.00
				TOTAL	**$10,748,000.00**

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE IMPROVEMENTS					
Paving - Asphalt					
Asphalt Paving - Drives (Light Duty)	95,000	SY	$35.00	$3,325,000.00	
Asphalt Paving - Road Improvements	1,000	SY	$65.00	$65,000.00	
Total Paving - Asphalt				$3,390,000.00	$3,390,000.00
Paving - Other					
Paving - Gravel (Riding / ATV Trail)	12,000	SY	$15.00	$180,000.00	
Total Paving - Other				$180,000.00	$180,000.00
Curb & Gutter					
Drive Curb & Gutter	17,000	LF	$30.00	$510,000.00	
Parking Curb & Gutter	14,000	LF	$30.00	$420,000.00	
Total Curb & Gutter				$420,000.00	$420,000.00
				TOTAL	**$3,990,000.00**
UTILITY INFRASTRUCTURE (See separate attachments for water and sanitary estimates)					
Storm Water	1	LS	$1,225,000.00	$1,225,000.00	
Water	1	LS	$5,075,000.00	$5,075,000.00	
Sanitary	1	LS	$3,000,000.00	$3,000,000.00	
Telecom	1	LS	$100,000.00	$100,000.00	
Electric (Install/Relocate Lines)	8,750	LF	$15.00	$131,250.00	
				$9,531,250.00	$9,531,250.00
				TOTAL	**$9,531,250.00**
ALTERNATIVE ITEM #1 (CAMPER AREA)					
Asphalt Paving - Drives (Light Duty)	4,275	SY	$35.00	$149,625.00	
Paving - Gravel	4,750	SY	$15.00	$71,250.00	
Fine Grading (Building)	1,000	SY	$2.00	$2,000.00	
Fine Grading (Non-Building)	10,000	SY	$1.00	$10,000.00	
Water Hookup for Site	30	EA	$2,000.00	$60,000.00	
Electric Hookup for Site	30	EA	$2,500.00	$75,000.00	
				$367,875.00	$367,875.00
				TOTAL	**$367,875.00**
				Total Cost Estimate	**$24,269,250.00**
				Total Cost Estimate Including Alternative Item #1	**$24,637,125.00**

COST ESTIMATE

NOTES:

WATER

Demand

	Units	Quantity	Demand (gpd)	Total
Campground*	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
Livestock	Animals***	215	10	2,150
Greenhouse	SF of Growing Area	5,000	0.5	2,500
			Total Demand =	26,650 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
***Based upon number of horse stalls & cattle pens (Assuming 1 horse per stall & 5 cows per pen).
Note: Alternative Item #1 (Camper Area) is included in the calculations.

Cost

	Units	Quantity	Cost	Total
Well System*	LS	1	$4,250,000	$4,250,000
Distribution Piping	LF	11,000	$75	$825,000
			Total Cost =	$5,075,000.00

*Cost based upon similar projects utilizing well, treatment, and storage systems per 1,000 gpd demand.

SANITARY

Flow

	Units	Quantity	Demand (gpd)	Total
Campground	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
			Total Demand =	22,000 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
Note: Alternative Item #1 (Camper Area) is included in the calculations

Cost

	Units	Quantity	Cost	Total
Drainfield System*	LS	1	$3,000,000	$3,000,000
			Total Cost =	$3,000,000.00

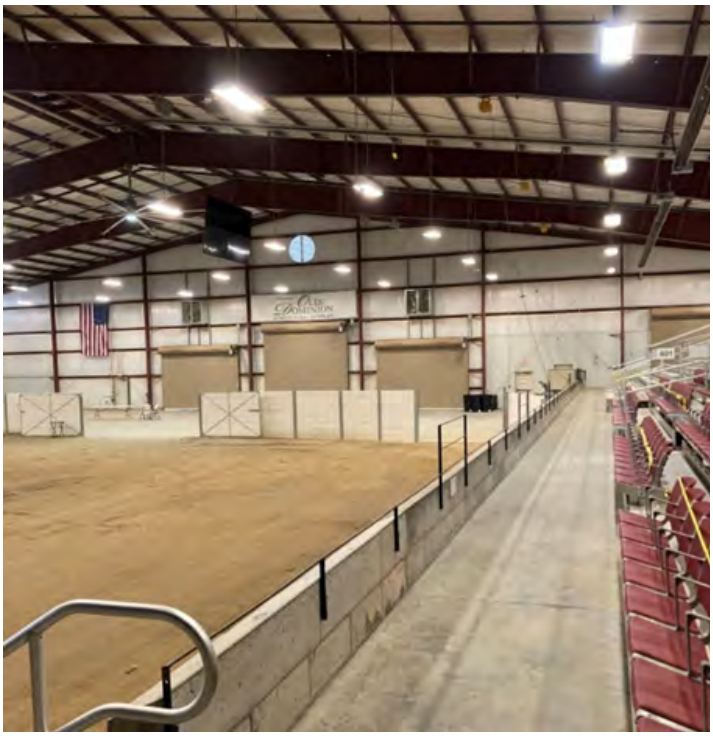
*Cost based upon similar projects utilizing multiple drainfields with pretreatment systems per 1,000 gpd demand.

4

Basis of Design

OLDE DOMINION AGRICULTURAL COMPLEX

Photos referenced per Amherst powerpoint presentation for application of the proposed Amherst-Nelson agricultural complex.



Growing Gold
VIRGINIA TOBACCO

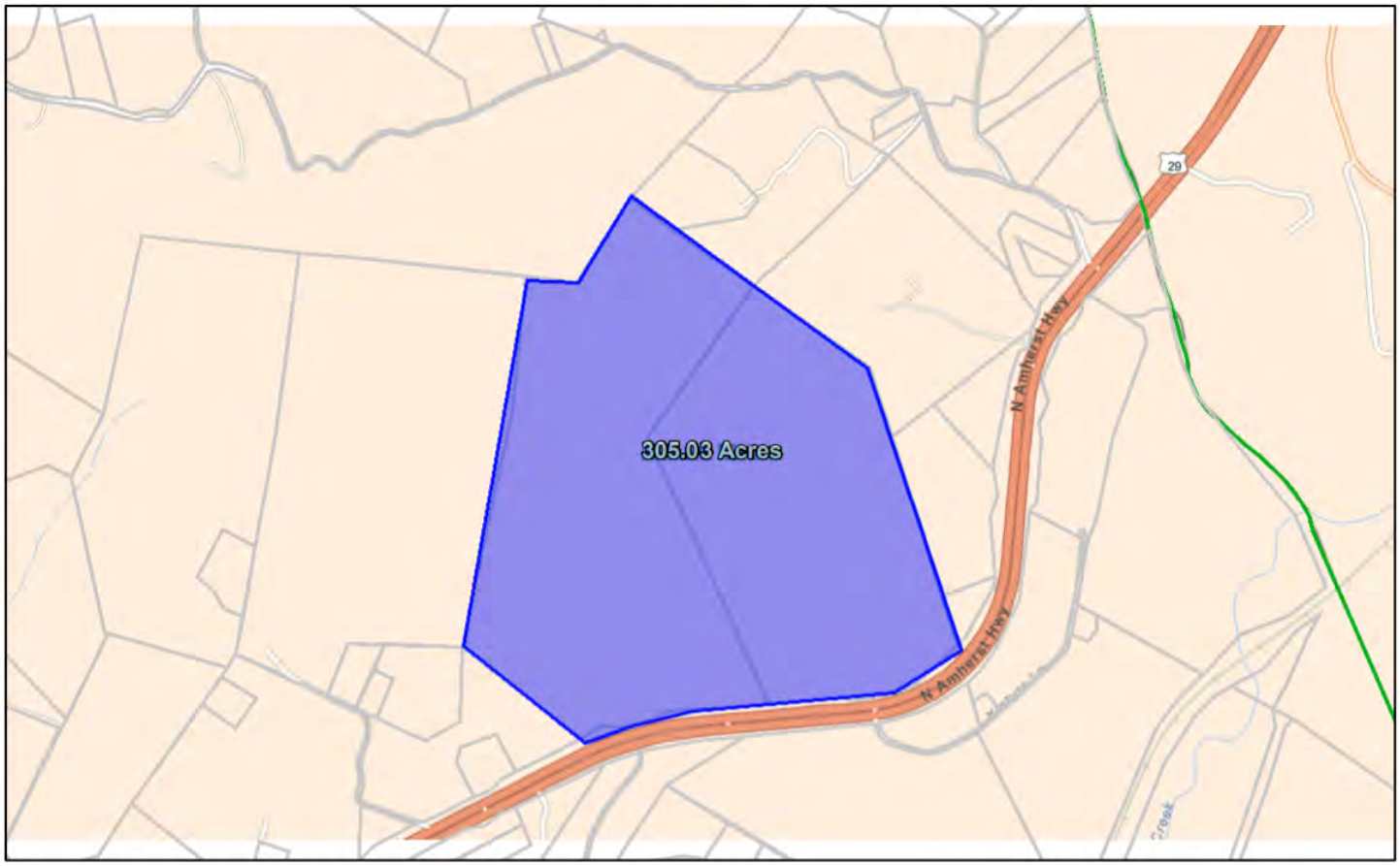
Programming Data (Powerpoint Submittal from Amherst County)

Amherst – Nelson Ag Complex

Agenda

1. Welcome and introductions all around – Chris Bryant
2. Proposed Location for ANAC – Chris Bryant
3. View of ODAC in Chatham, VA – Chris Bryant
4. Mission of ANAC
    1. CTE – Dr. Rob Arnold
    2. Support to local farmers – Ed Sale
    3. Regional event space – Dean Rodgers
    4. Self-sufficiency – Dean Rodgers
5. Brainstorming of additional features and issues – Chris Bryant
6. Creation of a working group & next steps – Chris Bryant

ANAC Grounds



ANAC Grounds

Proposed Ag Complex Property

Proposed Ag Complex Property

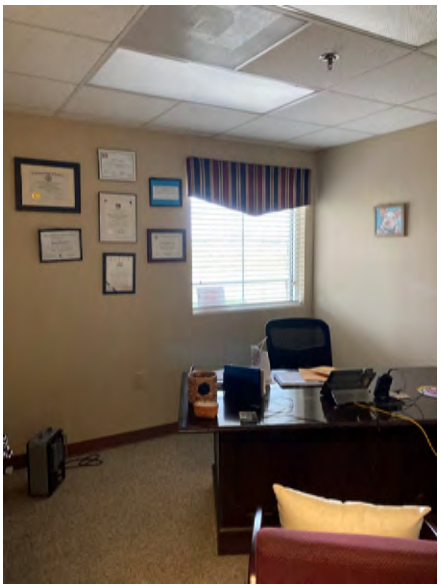
Proposed Ag Complex Property

Proposed Ag Complex Property

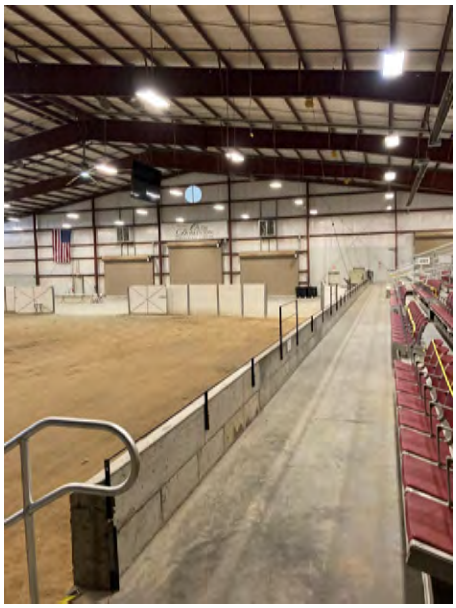
Old Dominion Agricultural Complex

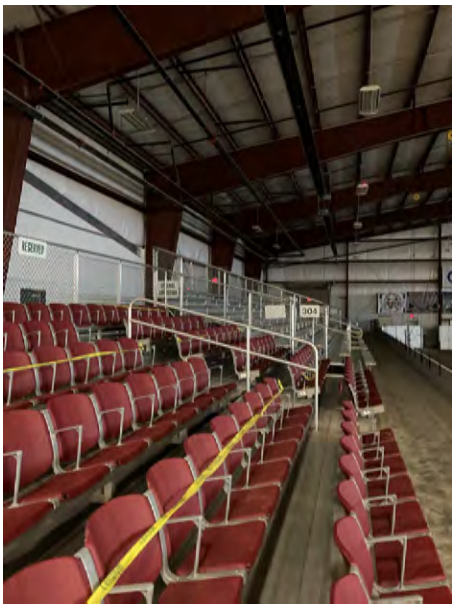
Front View of Complex

Office Areas in Front of Building

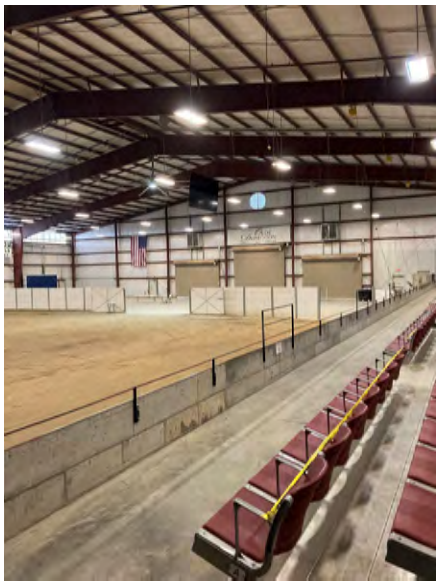


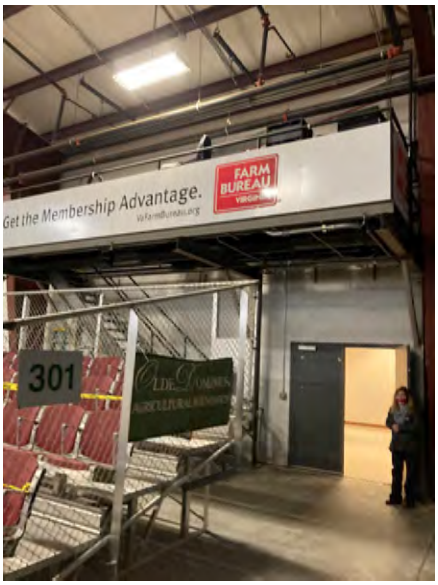
Main Arena

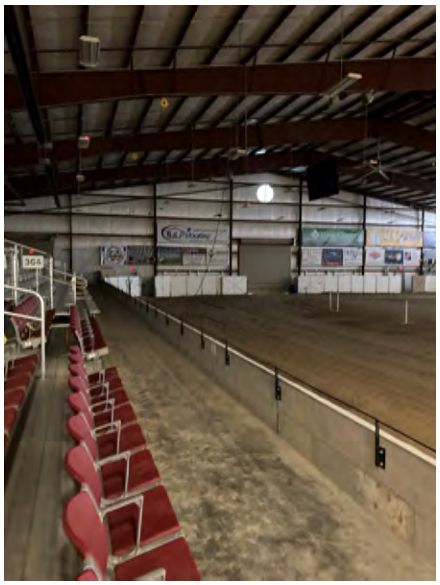




Main Arena







Back & Side Views of Main Arena

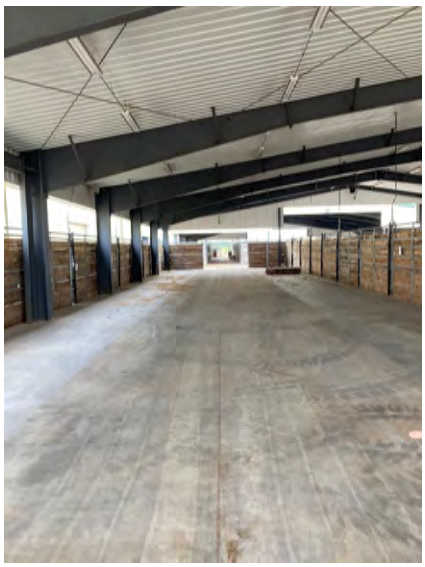
Main Entrance To Arena

Hallways between Offices, Educational Wings, and Main Arena

Kitchen Off of Hallway To Main Arena

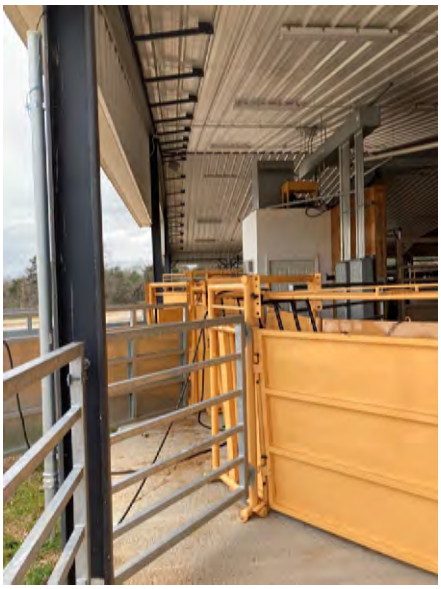
Large Educational Wings

Equestrian Center



Equestrian Center

Cattle Working Facility – Scales, Squeeze Chutes, and Holding Facility



Cattle Working Facility

Farmers Market Facility

Farmers Market Layout

Priorities of the BoS

1. Career and technical education/vocational
2. Support the local farmers
3. Regional fairgrounds/event space
4. Self-sufficiency of the facility

Facilities for Training & Education

Dr. Arnold

- Classrooms for business, high schools and community colleges
- Bays for heavy equipment/farm machinery repair training
- Greenhouses and hydroponics
- Ponds and aquaculture
- Heavy equipment and CDL training & practice areas
- Brewing, Oenology & Viticulture equipment/training
- Solar, wind, water pumping/filtration, composting, farm equipment demonstration areas

Support for Local Farmers

Ed Sale

- Classrooms for pesticide/herbicide, application, Ag Agent programs
- Repair workshop for heavy equipment/farm machinery
- Cattle working facilities for vaccinations, tagging & preventive care
- Heavy equipment practice areas for farm families
- Organize student manpower to work herds & harvests
- Composting area
- Home canning kitchen & equipment for public use
- Small/medium size meat processing
- Warehousing for onsite vendors

Regional Fairgrounds & Events

Dean Rodgers

- Covered arena for shows/competition/sales/races
- Fencing/corrals/paddocks for sales
- Horse stalls for rent
- Warehouse for vendor inventory & events supplies
- Pens for FFA/student animals
- Riding/ATV trails
- Campground & cabins
- Fairgrounds
- Overflow parking for Lockin, etc.
- Ballroom event space for rent
- Meeting/conference space

Self-Sufficiency – Revenue Generation

Dean Rodgers

- Rental of space: arena, stalls, bays, meeting rooms, offices, ballroom
- Concession fees/sharing
- Campground, cabins and riding trails w/ shower facilities
- Farmers Market
- Arena banners
- Veterinary, field spreading/spraying, bulk buying services
- Facility sponsorships/naming
- Cell tower fees
- Overflow parking/shuttle for nearby large events

The Way Forward

Dean Rodgers

- Compile 25 year concept
- Compile working group
- Lock down terms of purchase for land
- Seek funding from partners for engineering design & feasibility
- Hire engineers/architects for design & study
  - Refine proposal
  - Phasing plan
  - Cost estimate for Phase 1
- Establish legal form/structure
- Pursue financing/grants
- Undertake construction

Legal Structure

Dean Rodgers

- Loose partnership of Amherst + Nelson + ??
  - Each has appointed two representatives
- Sharing of expenses until formalization
  - Boards of Supervisors must agree all matters going forward
- Working group is advisory to BoSs
- Eventual Director & staff structure

The Working Group

Chris Bryant

- On call until regular meeting date/time established
- Source of expertise, fundraising capacity, community energy
- Future source of appointees as Directors, etc.?
- Be aware of conflicts of interest once we formalize.
- Purpose: "The Working Group recommends . . . "
-

Sign up on clipboard or through Zoom chat box w/ your contact info.

Stakeholders

Chris Bryant

* TJPDC and Central Virginia Planning Districts
* Both Farm Bureaus Amherst/Nelson
* Central Virginia Electric Cooperative + Firefly
* Nelson 151
* Chamber of Commerce Nelson/Amherst
* EDA's of Nelson/Amherst
* PVCC + CVCC
* Lovingston and Amherst Veterinary
* School Superintendents of Nelson/Amherst
* FFA rep of Nelson/Amherst
* Nelson/Amherst Administrators
* Go Virginia Reps
* Two big employers from each county
* Workforce Development Board, Exec Dir
* Additional recommendations . . . ?

Questions, Comments, Concerns?

Thank you for your participation.

6

Owner Comments and A/E Responses

OWNER COMMENTS AND A/E RESPONSES

Amherst - Nelson Agricultural Complex 80% Progress Submittal - Review Comments- responses dated 7-29-2022

Comment Item Number	Date	Discipline	Review Comment	Submitted By *reviewer*	A/E Response
		Discipline Key: G = General, A = Architectural, D = Demo, SC = Site/Civil, LA = Landscape, S = Structural, M = Mechanical / HVAC, E = Electrical, P = Plumbing, FA = Fire Alarm, FP = Fire Protection, LS = Life Safety, IT/AV = Information Tech./Audio Video, T = Telephone/ Telecomm, FF&E = Fixtures Furnishings & Equipment, SEC = Security Wiring & Equipment, ELEV = Elevator R = Rehabilitation			
SC-001	3/18/2022	A	Thank you for developing and submitting the Addendum No. 1 to Addendum No. 3 (attached herein above) pertinent to the Agricultural Center Project. The objective of Addendum 1 was to revise the scope of the initial PAFR to provide for a more investigative related to the proposed project site. Addendum No. 1 was submitted to the Nelson County Board of Supervisors in session on March 15, 2022 to ensure the Board agreed to the revised scope and the increased cost of the work to be provided by Architectural Partners, Hurt and Proffitt and others. The Board of Supervisors voted to table (e.g. not accept/approve) the Addendum No. 1. The input from the Board was the Addendum No. 1 should be submitted to Amherst County to enable the County to decide if the County would independently accept and provide payment for the scope of work included in Addendum No. 1. As such, I have copied Amherst County Administrator Dean Rodgers to both advise him of the decision on Addendum No. 1 by Nelson County's Board of Supervisors and to provide him with the Addendum No. 1 document. Additionally, in subsequent discussion of the Agricultural Center Project the Nelson County Board of Supervisors position is (that) completion of the original scope of work, per Addendum No. 3, was acceptable to Nelson County predicated on Amherst County's concurrence and agreement to share one-half of the total cost. As such, this question is also submitted to Mr. Rodgers for provision of a response from Amherst County on proceeding with the original PAFR scope of work previously provided by Architectural Partners with Hurt and Proffitt as engineering sub-consultant (it is noted that a level of work on the original scope of the PAFR has been completed). Response from Mr. Rodgers is necessary on 1) Amherst County's concurrence to proceed with the original PAFR scope of work, per Addendum No. 3, which Nelson County is agreeable to proceed with and to complete and, 2) if Amherst County decides to independent of Nelson County undertake Addendum No. 1 to Addendum No. 3.	Steve Carter	**Acceptable to A&E and proceeded with design as contracted in original PAFR contract -Addendum No.3. Amherst in subsequent email from Dean Rodgers confirms that AP is not approved to proceed with the scope of work as identified in Addendum 1 (March 11, 2022 fee proposal for Amendment No1: Additional Site Investigation and Engineering). See email comment DR-001 (from Dean Rodgers) below.**
DR-001	3/22/2022	A	I have consulted with my board members and with Biff Johnson at Hurt & Proffitt. We do not see the need for additional study at this time. The question before both boards is whether or not to purchase the subject property. The original agreed scope of work (Addendum 3) is paid for and designed to address the feasibility of the site for future development. Our principal concerns are the availability of water and the suitability of the soils to receive sewage treatment. We await the conclusion of that study and do not understand why it was halted. You assert below that AP has completed work from the original contract but we have yet to see a final product of that contract or receive an answer to the principal questions. The answer to whether additional study, analysis and design is needed (Addendum 1 to Addendum 3) will follow on the outcome of the initial feasibility study. Please direct Architectural Partners to conclude the work as contracted and supply the Boards with a final report. At that point, the boards will decide what the next steps should be.	Dean Rodgers	**AP is in agreement and will finalize the PAFR per comments, responses and per contract agreement. In response to the availability of water- it was determined that public water and sewer were not available at the site and that 2 wells that served a residence(demolished) and a livestock water well located in pasture near Rt. 29, are present on site. This will be in the report. However, whether enough water is available to build out the site can not be determined until existing well(s) are tested for capacity and quality of water. Also it is considered most likely that new wells will be required to meet the design requirements. Knowing the quantity and quality of water is unknown until wells are drilled and tested . This work is not considered part of a PAFR study. It will be the A&E's recommendation that the purchase of the property should be contingent upon site verification of suitable water and suitable soils for waste being confirmed. If the Counties determine that the project is feasible and desire to proceed with purchase of land, then it should be recommended to proceed with advanced design/study/engineering. This exploration would be required under a future contract.**
SC-002	3/22/2022	A	Given Dean's response, please proceed with completion of the PAFR as per Addendum 3 agreement.	Steve Carter	**AP is in agreement and will finalize the PAFR per comments, responses and per contract agreement.**

Amherst - Nelson Agricultural Complex 80% Progress Submittal - Review Comments- responses dated 7-29-2022

Comment Item Number	Date	Discipline	Review Comment	Submitted By *reviewer*	A/E Response
		Discipline Key: G = General, A = Architectural, D = Demo, SC = Site/Civil, LA = Landscape, S = Structural, M = Mechanical / HVAC, E = Electrical, P = Plumbing, FA = Fire Alarm, FP = Fire Protection, LS = Life Safety, IT/AV = Information Tech./Audio Video, T = Telephone/ Telecomm, FF&E = Fixtures Furnishings & Equipment, SEC = Security Wiring & Equipment, ELEV = Elevator R = Rehabilitation			
DR-002	5/6/2022	A	Attached for your review is the first draft of the Amherst-Nelson Agricultural Complex (ANAC) Feasibility Study. Before being finalized, the contractor has asked that the stakeholders provide comment. Steve Carter, the Nelson County Administrator, will share the study with the Nelson County stakeholders. There are, as yet, many unanswered questions about the feasibility, design, operations and future of the ANAC. However, the feasibility study was not intended to answer ALL of them. To help you complete your review, I have attached the statement of work the contractor was hired to perform. Have they done what we hired them to do? Please share your comments, suggestions, improvements and edits with me by Friday, June 17, 2022.	Dean Rodgers	**The A&E is using this spreadsheet to document all the comments and intents to respond to all. Please note that our programming was to be accomplished in a workshop meeting with Amherst and Nelson. This workshop was not used in lieu of a PowerPoint submittal from Amherst and is the sole source for the programming. Any cost estimating related to owner supplied data- soft costs such as operations, County administration, funding, marketing, staffing costs, maintenance, etc. were to be determine by the Counties. This information is not included in the cost estimates.**
DR-003	6/10/2022	A	Final Reminder - This is a reminder to get your review comments to me. Has Architectural Partners accomplished what we hired them to do? Are you satisfied with this report? I would like to receive your comments and will do so until Friday the 17th.	Dean Rodgers	**For information only- no response required from A&E**
CT-001	6/10/2022	A/SC	Verbally given. There is no definitive answer on water which was the primary concern.	Claudia Tucker	**Determining if enough water (and water quality) can be found on site is beyond the scope of work for the A&E. It was determined that public water and sewer were not available at the site. A&E has made calculations to determine the amount of water required based on the program, however, to determine whether enough water is available by wells is only determined by doing a test on the existing 2 wells that served a residence (demolished) and a livestock water well that are present on site. This is not expected to achieve the number of gallons required for a 300 acre AG Complex serving over a thousand people. This information will be presented in the PAFR. Also see response in item # DR-001 above.**
ES-001	6/10/2022	A/SC	This started out with the ag committee asking for a 10,000 dollar water study to see if it was feasible to purchase this property. It is my understanding that we have spent that several times over and we still don't know if we have any water and apparently no RFP asking for a water study	Ed Sale	**The A&E was commissioned by Amherst Co. and Nelson Co. to provide a Preliminary Architectural Feasibility Report (PAFR). A specific water study (well drilling and/or testing of existing residential / livestock wells) was not requested when the PAFR study was requested. However at a later date, Amherst/Nelson requested the A&E to provide an additional service scope and fee for this engineering/site investigation which was outside of the PAFR Contract. The A&E submitted this under Addendum 1 (March 11, 2022 fee proposal for Amendment No1: Additional Site Investigation and Engineering). See email comment DR-001 and SC-002 (from Mr. Rodgers and Mr. Carter) that rejected the additional service proposal and requested the A&E to complete the PAFR.**
NY-001	6/16/2022	A/SC	Questions and comments-I am aware that they may or may not pertain to the question at hand asking if this study is 80% or more completed. Item on page 2 referencing primitive camping: -I notice travel trailers and "cowboy campers" in the pictures of the Old dominion Ag complex. I do not see any provisions for this use. -Will the fairground location be graded to a level grass lot? Will this area be open and available for other uses?	Nate Young	**On Page 2, it has been our intent that all camping would take place in the North-East part of site. I agree with your comment that for larger trailers and "cowboy campers" the fairground area would be a desirable location. Operational management concerning logistics, oversite, maintenance, etc should be considered. The A&E design intention is to have basic cabins, primitive and RV type camping in the N-W part of site, however, we will add alternative RV and cowboy type trailer parking at the fairground location. Water and electric power would be included if this alternative plan is accepted. Fairground will be level site. It should be further designed to suit multi-purpose uses as desired by the operation/management of the AG Complex.**

Amherst - Nelson Agricultural Complex 80% Progress Submittal - Review Comments- responses dated 7-29-2022					
Comment Item Number	**Date**	**Discipline**	**Review Comment**	**Submitted By** *reviewer*	**A/E Response**
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NY-001 (cont.)	6/16/2022	A/SC	Water and wastewater calculations based on parking: -Is this standard for this type of complex? -Will bathrooms be created to serve the fairgrounds? -Does this require a small treatment plant or a mass drain field?	Nate Young	**Water and Wastewater calcs are based on comparable type sites and uses and are based on preliminary data. It is assumed that temporary type toilet facilities (Porta Johns) would be made available for large temporary gathersings such as a fair. Individual drainfields may be utilized for each component of the development (campground, office/arena, etc.) and pretreatment at each drainfield (such as Orenco pretreatment units) may be utilized to decrease the required footprints of these drainfields. The exact dimension/requirements for the drainfields cannot be determined until further into the design process and soils investigation has been completed.**
			Provisions for water storage and fire protection: -What buildings may be sprinkled? -Where are we locating Fire protection?		**Fire Protection systems are identified and includes a water storage and pump house. Fire protection to buildings are identified in the program chart. Refer to Pages 7, 8 & 9 for location of sprinklers within structures, water , and sanitary info. The water storage, fire pump house and auxillary associated equipment will be located next to the Arena / Multi-**
			Analysis of VDOT requirements for the entrance: -Will improvements be required to the existing median crossover or turning lane to accommodate queuing in the roadway? Specifically northbound traffic looking to turn left into the complex?		**Based on preliminary calculations for potential land uses, a full width turn lane and taper will be required for both right and left turns into the site based upon the anticipated trip generation numbers and requirements of the VDOT Roadway Design Manul Appendix F (Access Management Design Standards for Entrances and Intersections). See the "Transportation Analysis" section of the Preliminary Architectural Feasibility Report for a more detailed explanation.**
SC-003	6/13/2022	A	No comment(s) to submit. Candy is the Interim Administrator and will be the County Administrator officially on 8-1. If she needs anything from me, I have advised her that I'm always available to assist(if I can).	Steve Carter	**A&E acknowledges there are no comments from Steve Carter and the Nelson Co Administration office.**
DR-004	6/13/2022	A/SC	Response to CT-001 Paragraph B of the statement of work requires: "B. Existing facilities. Describe - include condition, adequacy, suitability for continued use and other pertinent information." The scope of work for Site Development at paragraph 4a requires a description of "existing water infrastructure". The draft study reports there is a well or two on the property and invites the counties to consult with the health department regarding the capacity and condition of those wells. This is hardly a description of the existing infrastructure, its condition, adequacy, suitability for continued use and other pertinent information – like flow rate (that directly addresses adequacy). Since all the supervisors involved wanted to know the water and waste water production capacity of the site, this topic goes directly to the heart of the original feasibility study ($60K). It was not accepted as an additional supplemental study request because it has always been considered the very heart of the original study request.	Dean Rodgers	**A&E response to comment referencing Paragraph B and 4a: The Preliminary Architectural Feasibility Report (PAFR) is not a site investigation with extensive testing or exploration. It is a broad review of the subject using obtainable data. Specific to this comment, the identification of available utilities is included in the report. Where utilies are not avaialble or questionable the report will note design requirements and recommendations for consideration if the project is advanced in procurement and design.**
DR-005	6/20/2022	A/SC	From letter to Candy McGarry, 6/20/22 1. Study completely avoid discussing capacity of the existing wells on site. Drawdown test of existing wells is needed to complete the report.	Dean Rodgers	**See item # DR-004**
			2. Statement of work indicates alternative locations for proposed bldg. Report provides one proposed layout		**Alternative locations would have be shown if any comment(s) from County had a concern over the 80% submitted design for location of structures, roads, water features, etc. We are including an alternate design for the fairgrounds with added trailer and RV camping site as suggested in NY-001. There may be alternative locations explored once the PAFR progresses to a design project with additional owner input.**
			3. Statement of work calls for estimates of "loose" equipment, items need to be listed individually to better understand costs.		**A&E will add a line item for this.**

Amherst - Nelson Agricultural Complex 80% Progress Submittal - Review Comments- responses dated 7-29-2022					
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DR-005 (cont.)	6/20/2022	A/SC	4. Annual operating budget missing	Dean Rodgers	**A&E will need assisted input from the Counties on this line item. There are many variables to consider when putting an operation budget together. Consideration will need to determine if the facility will outsource or use permant staff for operations. Lease rates, county ownership or lease to departments, businesses, individuals, etc. Consideration of operation of entire facility or partial-seasonal. Non-profits/for-profits. Year 1 will be naturally a lower maintenance costs than year 5 and will Counties perform the maintenace and site upkeep vs out-sourced contractor. The A&E recommends that this costs be discussed seperately with the Counties since it is not a first cost and is variable. Also, the Counties may have some historic data on operation costs that can be extrapolated to provide a clearer view o how this complex may be operated. Please contact Mark Smith (AP) at 434-258-2944 to schedule a meeting if so desired to determine a line item budget.**
			5. Statement of work calls for development of overall stormwater mngt plan - draft report quotes legal requirements and site considerations		**The stormwater management section of the Preliminary Architectural Feasibility Report mentions several options for stormwater management on the site. Specific stormwater management practices (such as extended detention basins and/or wet ponds) cannot be determined until it is determined what will actually be constructed. The proposed stormwater measures would be dependent upon how much of the property is developed at any given time and how much land is disturbed for any particular phase of the project.**
			6. No landscaping plans, building elevations or 3D rendering		**A&E will include intent of landscaping on the site plan and include in estimate. A&E will include exterior elevation and rendering of the Arena / Multi-use Event Center.**
			7. Several items in draft are not completed or addressed in this review.		**A&E will be submitting a completed PAFR on the next submittal.**
DR-005 (cont.)	6/20/2022	A/SC	Architectural Partners failed to complete study in timeframe agreeded upon.	Dean Rodgers	**I (Mark Smith of AP) take personal responsibility for any delays on the part of the A&E. Please call me to discuss in further detail if a detailed explanation is required. 434-258-2944**
DP-001	6/28/2022	A/SC	"Show me the water". Need to know if there is water - no water, no project.	David Parr	**See responses to item # SC-001; DR-001; CT-001; ES-001; and DR-004 above.**

SEPTEMBER 13, 2022

PRELIMINARY ARCHITECTURAL FEASBILITY REPORT

AMHERST-NELSON AGRICULTURAL COMPLEX (ANAC)

HURT & PROFFITT
Inspired | Responsive | Trusted

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BASIS OF DESIGN | OLDE DOMINION AGRICULTURAL COMPLEX

- Information from the existing Olde Dominion Agricultural Complex was used to develop the following for ANAC:
  - Programming Diagrams
  - Civil Plans
  - Building Plans
  - Utility Study
  - Construction Estimates

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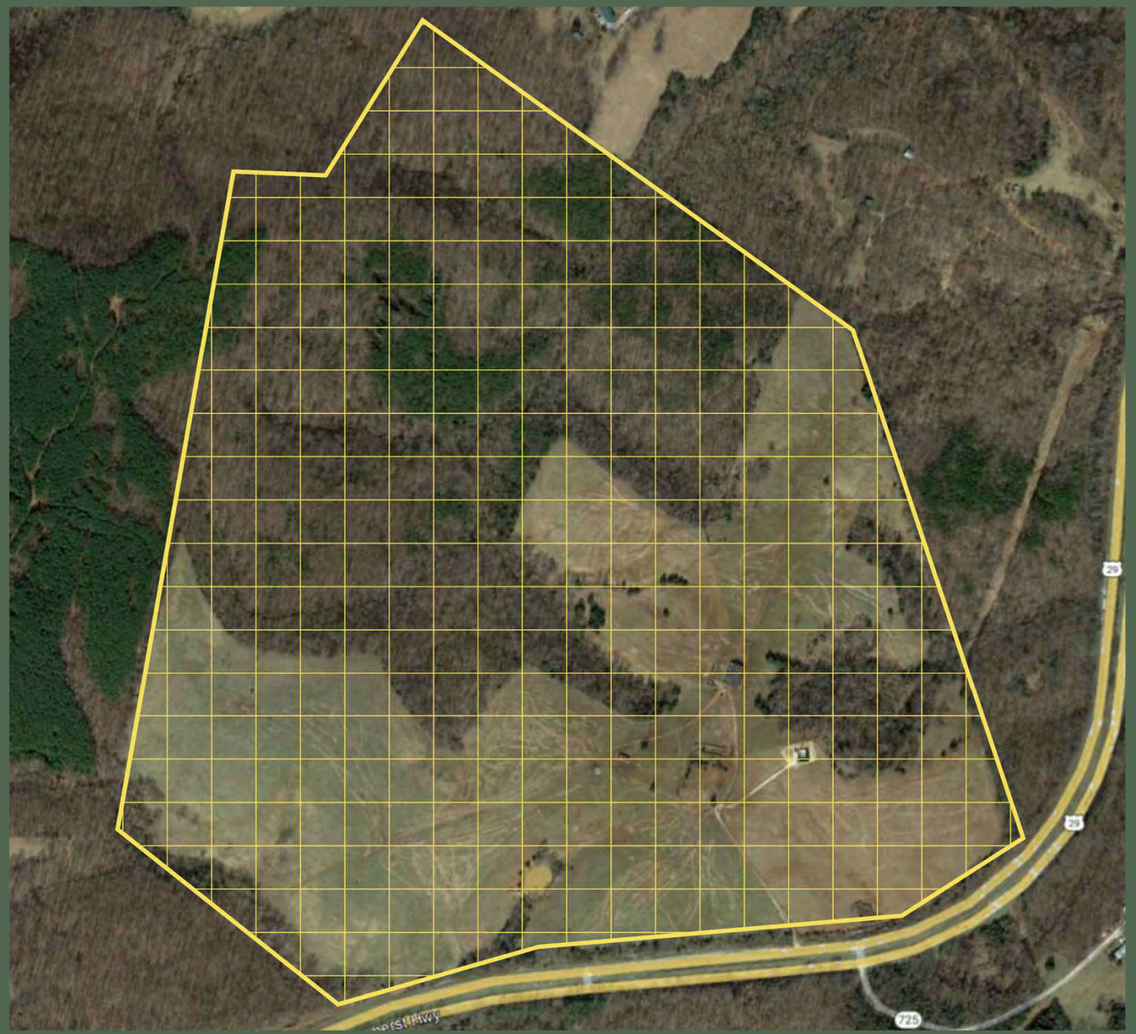
SITE COMPARISON | OLDE DOMINION AGRICULTURAL COMPLEX VS. PROPOSED AMHERST-NELSON AGRICULTURAL COMPLEX



AMHERST-NELSON AGRICULTURAL COMPLEX (303 ACRES)

COMPARISON OF OLDE DOMINION COMPLEX TO THE PROPOSED AMHERST-NELSON AGRICULTURAL COMPLEX SITE LOCATED IN AMHERST COUNTY

OLDE DOMINION AGRICULTURAL COMPLEX (18 ACRES)

EACH GRID REPRESENTS 1 ACRE

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PROGRAMMING | INTERIOR SPACES

AGRICULTURAL COMPLEX – RENDERING

AGRICULTURAL COMPLEX

- Arena
- Conference Rooms
- Classrooms
- Offices
- Kitchen
- Cannery
- Meat Processing

OTHER LOCATIONS

- Farmers Market
- Cattle Working Building
- Training Areas
- Warehouses
- Greenhouse
- Horse Stalls
- Cabins

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PROGRAMMING | EXTERIOR SPACES

LIVESTOCK PADDOCKS

EQUIPMENT TRAINING AREA

- Environmental Education
- Equestrian
- Fairgrounds/RV/Sites
- Equipment Training
- Livestock Paddocks
- Primitive Camping Sites
- Cabin Sites
- Riding /ATV Trails
- Solar
- Compost
- Viticulture
- Oenology
- RV Sites

RV SITES

VITICULTURE

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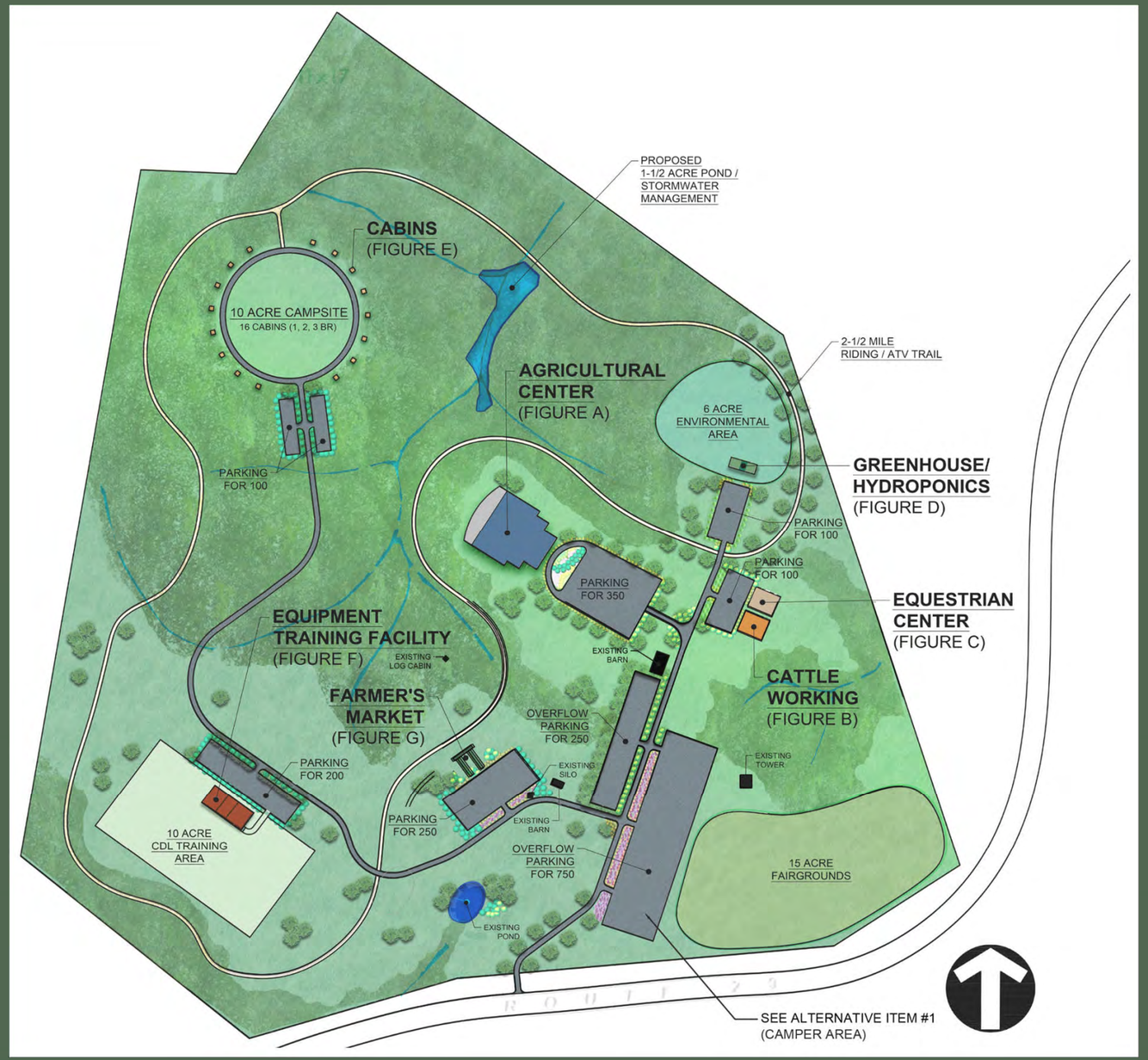
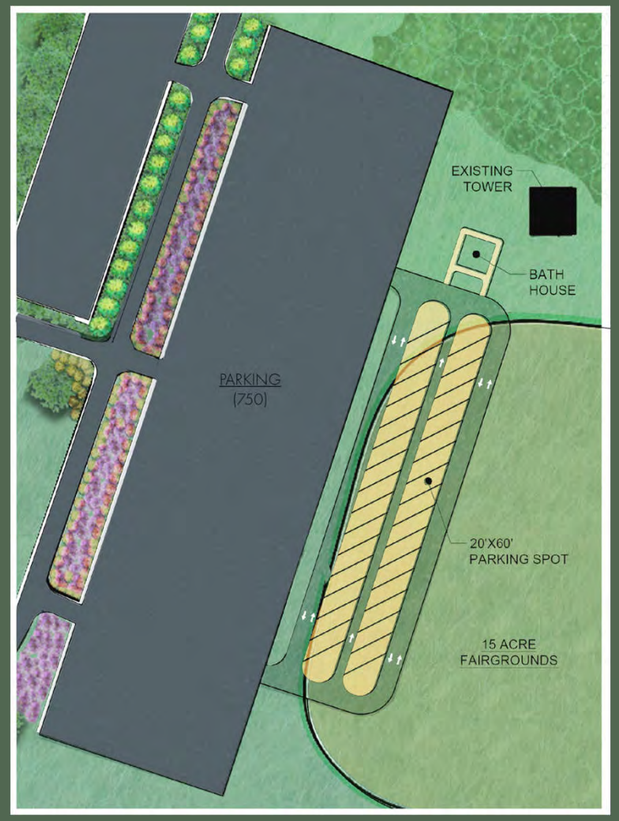
SITE PLAN |





ALTERNATIVE ITEM #1
RV / COWBOY CAMPER LOT

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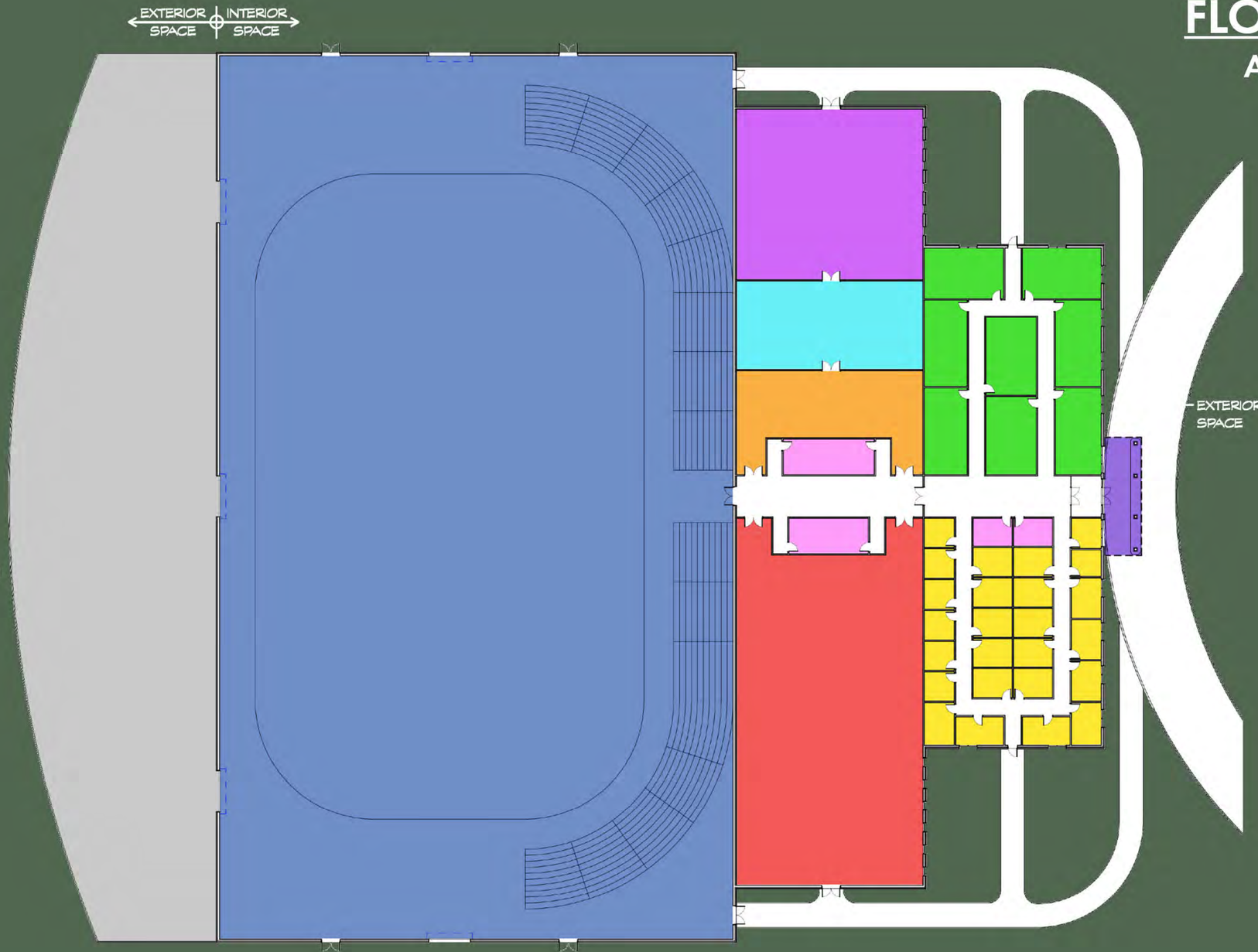
FLOOR PLAN

AGRICULTURAL COMPLEX

- ARENA
  50,000 SF (SEATING FOR 1,400)
- MEAT PROCESSING
  4,000 SF
- CANNERY
  2,000 SF
- KITCHEN
  2,000 SF
- CLASSROOMS
  6,000 SF
- OFFICES
  6,000 SF
- CONFERENCE/BALLROOM
  8,000 SF
- RESTROOMS
  1,000 SF
- PORTE-COCHERE (OUTDOOR SPACE)
- PADDOCKS (OUTDOOR SPACE)
  20,000 SF
- CIRCULATION
  3,500 SF

TOTAL SF INTERIOR:
82,500 SF

TOTAL SF EXTERIOR:
20,000 SF



COST ANALYSIS | SUMMARY OF COSTS

LAND		$1,200,000
SITE		
• On-Site Preparation	$12,145,240	
• On-Site Improvements	$ 4,508,700	
• Utility Infrastructure	$10,770,313	
• Fire Protection	$ 694,950	
• Landscaping	$ 169,500	
• Site sub-total	$28,288,703	
NEW BUILDINGS AND STRUCTURES	$23,681,720	
TOTAL CONSTRUCTION ESTIMATE	$53,170,423	**$53,200,000**
ALTERNATE PLAN ADDITION-		
Cowboy/ RV Camping at Fairgrounds	$636,986	**$637,000**
TOTAL CONSTRUCTION ESTIMATE W/ALTERNATIVE	$53,807,409	**$53,800,000**

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COST ANALYSIS | SITE & NEW BUILDING CONSTRUCTION COSTS

Engineer's Opinion of Probable Site Construction Cost - Amherst/Nelson County Agricultural Center

Created: July 29, 2022
Data Assumptions: On-Site Preperation & On-Site Improvements were estimated using SITEOPS (Version 10.9.1.3), See Attachments for water and santiary estimates

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE PREPARATION					
Site Clearing					
Clearing	45	AC	$5,000.00	$225,000.00	
Demolition	1	LS	$150,000.00	$150,000.00	
Topsoil Strip/Cut	120,000	CY	$2.00	$240,000.00	
Topsoil Fill	90,000	CY	$2.00	$180,000.00	
Topsoil Export (onsite disposal)	30,000	CY	$8.00	$240,000.00	
Total Site Clearing				$1,035,000.00	$1,035,000.00
Grading Cut					
Earth Cut	633,000	CY	$6.00	$3,798,000.00	
Rock Cut	1,000	CY	$100.00	$100,000.00	
Unsuitable Cut	5,000	CY	$20.00	$100,000.00	
Total Grading Cut				$3,998,000.00	$3,998,000.00
Grading Fill					
Earth Fill	633,000	CY	$6.00	$3,798,000.00	
Total Grading Fill				$3,798,000.00	$3,798,000.00
Other Preparation					
Fine Grading (Building)	66,000	SY	$2.00	$132,000.00	
Fine Grading (Non-Building)	105,000	SY	$1.00	$105,000.00	
Erosion Control	145	AC	$10,000.00	$1,450,000.00	
Seeding	115	AC	$2,000.00	$230,000.00	
Total Other Preparation				$1,917,000.00	$1,917,000.00
			TOTAL		**$10,748,000.00**

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
ON-SITE IMPROVEMENTS					
Paving - Asphalt					
Asphalt Paving - Drives (Light Duty)	95,000	SY	$35.00	$3,325,000.00	
Asphalt Paving - Road Improvements	1,000	SY	$65.00	$65,000.00	
Total Paving - Asphalt				$3,390,000.00	$3,390,000.00
Paving - Other					
Paving - Gravel (Riding / ATV Trail)	12,000	SY	$15.00	$180,000.00	
Total Paving - Other				$180,000.00	$180,000.00
Curb & Gutter					
Drive Curb & Gutter	17,000	LF	$30.00	$510,000.00	
Parking Curb & Gutter	14,000	LF	$30.00	$420,000.00	
Total Curb & Gutter				$420,000.00	$420,000.00
				TOTAL	**$3,990,000.00**
UTILITY INFRASTRUCTURE (See separate attachments for water and sanitary estimates)					
Storm Water	1	LS	$1,225,000.00	$1,225,000.00	
Water	1	LS	$5,075,000.00	$5,075,000.00	
Sanitary	1	LS	$3,000,000.00	$3,000,000.00	
Telecom	1	LS	$100,000.00	$100,000.00	
Electric (Install/Relocate Lines)	8,750	LF	$15.00	$131,250.00	
				$9,531,250.00	$9,531,250.00
				TOTAL	**$9,531,250.00**
ALTERNATIVE ITEM #1 (CAMPER AREA)					
Asphalt Paving - Drives (Light Duty)	4,275	SY	$35.00	$149,625.00	
Paving - Gravel	4,750	SY	$15.00	$71,250.00	
Fine Grading (Building)	1,000	SY	$2.00	$2,000.00	
Fine Grading (Non-Building)	10,000	SY	$1.00	$10,000.00	
Water Hookup for Site	30	EA	$2,000.00	$60,000.00	
Electric Hookup for Site	30	EA	$2,500.00	$75,000.00	
				$367,875.00	$367,875.00
				TOTAL	**$367,875.00**
				Total Cost Estimate	**$24,269,250.00**
				Total Cost Estimate Including Alternative Item #1	**$24,637,125.00**

Buildings	Details	Utilities	SF/Each	COST/SF	Cost	Modifier	Project Cost	see below	Subtotals
					Construction Costs- 7-29-2022				
• **LAND ACQUISITION**	Purchase Costs				$1,200,000	$0	$1,200,000	No Modifier for land purchase	**$1,200,000**
• **SITE**	Roads/Trails/Utilities/ Stormwater/Grading								
On-Site Preparation	Clearing and Grading				$10,748,000	$1,397,240	$12,145,240	5	
On-Site Improvements	Paving, Roads, Trails				$3,990,000	$518,700	$4,508,700	5	
Utility Infrastructure	Water, Storm Water, Sanitary, Telecom, Elec.				$9,531,250	$1,239,063	$10,770,313	5	
Fire Protection	Fire Pump, Storage Tank, Hydrants, Misc. Equip.	S	1	LS	$615,000	$79,950	$694,950	5	
Landscaping	Planting, Minor Hardscaping		1	LS	$150,000	$19,500	$169,500	5	**$28,288,703**
• **NEW BUILDINGS & STRUCTURES**									
Arena/Multi-Use Events Center	PEMB with dirt floor	H, V, S	50,000	75	$3,750,000	$862,500	$4,612,500	2	
Toilet Room (10 W, 10 M)	CMU walls/tile floor/ GWB ceiling	H, V, S	1,000	180	$180,000	$54,000	$234,000	1	
Bleachers			1	LS	$309,000	$40,170	$349,170	5	
Offices/Classrooms (100 occupants)	PEMB with 4" concrete floor	H, C, V, S	12,000	140	$1,680,000	$504,000	$2,184,000	1	
Multi-purpose Conference/Event Room	PEMB with 4" concrete floor	H, C, V, S	8,000	130	$1,040,000	$312,000	$1,352,000	1	
Kitchen Area	QT floor/FRP wall and ceiling panels	H, C, V, S	2,000	150	$300,000	$90,000	$390,000	1	
Food Service Equipment		Systems	1	LS	$500,000	$115,000	$615,000	3	
Meat Processing Facility		H, V	4,000	350	$1,400,000	$322,000	$1,722,000	3	
Equipment			1	LS	$200,000	$26,000	$226,000	5	
Cannery		H, V, S	2,000	125	$250,000	$75,000	$325,000	2	
Equestrian Center									
65 Stalls	PEMB with dirt floor	V, S	65	25,000	$1,625,000	$341,250	$1,966,250	4	
Lobby/Restrooms	PEMB with 4" concrete floor	H, C, V, S	2,000	140	$280,000	$84,000	$364,000	1	
Cattle Working Facility (30 pens)	PEMB with dirt floor	Unconditioned	30	10,000	$300,000	$63,000	$363,000	4	
Large Bay Workshop (Equip. Training)	PEMB with 6" concrete floor	V, S	20,000	75	$1,500,000	$345,000	$1,845,000	2	
Open Pavilion (Farmer's Market)	PEMB without exterior wall, concrete floor, metal ceiling panels with lights	Unconditioned	4,000	65	$260,000	$54,600	$314,600	4	
Warehouse (for Farmer's Market)	PEMB with 4" concrete floor	H, V, S	2,000	110	$220,000	$46,200	$266,200	4	
Campsite									
16 Cabins (1, 2, 3 Bedrooms)		H, C	16	250,000	$4,000,000	$1,200,000	$5,200,000	1	
Restroom / Shower Facility	CMU walls/tile floor/ GWB ceiling	H, V	1,000	150	$150,000	$34,500	$184,500	3	
Greenhouse/Hydroponics/Oenology		Systems	5,000	190	$950,000	$218,500	$1,168,500	3	**$23,681,720**
• **ALTERNATE (CAMPER AREA)**									
Sitework					$367,875	$84,611	$452,486	3	
Bath House @ Fairgrounds	CMU walls/tile floor/ GWB ceiling	H, V	1,000	150	$150,000	$34,500	$184,500	3	**$636,986**
TOTAL CONSTRUCTION COST									**$53,170,423**
TOTAL CONSTRUCTION COST + ALTERNATE									**$53,807,409**

COST ANALYSIS | WATER & SANITARY COST CALCULATIONS

WATER

Demand

	Units	Quantity	Demand (gpd)	Total
Campground*	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
Livestock	Animals***	215	10	2,150
Greenhouse	SF of Growing Area	5,000	0.5	2,500
			Total Demand =	26,650 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
***Based upon number of horse stalls & cattle pens (Assuming 1 horse per stall & 5 cows per pen).
Note: Alternative Item #1 (Camper Area) is included in the calculations.

Cost

	Units	Quantity	Cost	Total
Well System*	LS	1	$4,250,000	$4,250,000
Distribution Piping	LF	11,000	$75	$825,000
			Total Cost =	$5,075,000.00

*Cost based upon similar projects utilizing well, treatment, and storage systems per 1,000 gpd demand.

SANITARY

Flow

	Units	Quantity	Demand (gpd)	Total
Campground	Bedrooms	45	150	6,750
CDL Training Area	Persons*	200	5	1,000
Farmers Market	Persons*	250	5	1,250
Fairgrounds	Persons*	1,000	5	5,000
Offices/Arena	Persons**	1,400	5	7,000
Equestrian Center	Persons*	100	5	500
Environmental Area	Persons*	100	5	500
			Total Demand =	22,000 gpd

* Based upon parking spaces provided. Assuming 1 person per vehicle.
**Based upon available arena seating.
Note: Alternative Item #1 (Camper Area) is included in the calculations

Cost

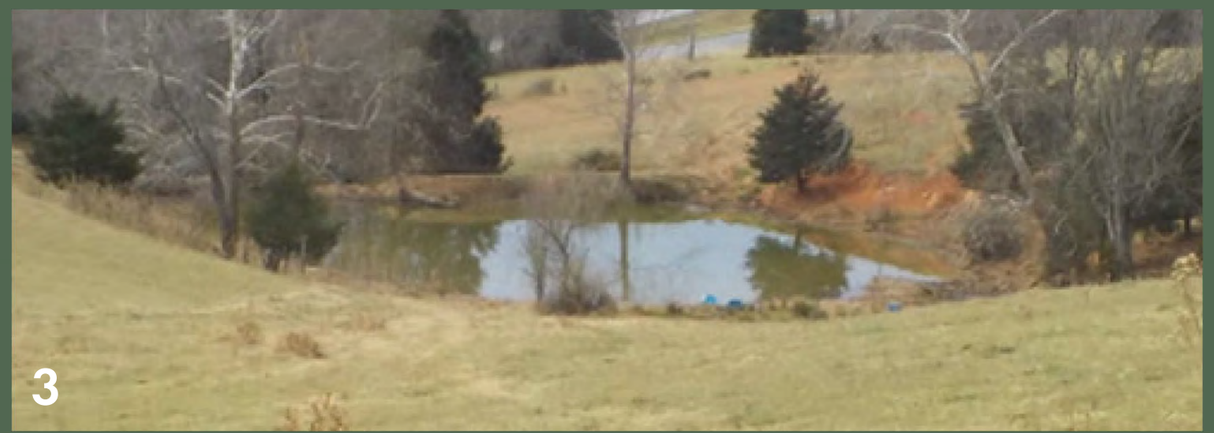
	Units	Quantity	Cost	Total
Drainfield System*	LS	1	$3,000,000	$3,000,000
			Total Cost =	$3,000,000.00

*Cost based upon similar projects utilizing multiple drainfields with pretreatment systems per 1,000 gpd demand.

EXISTING CONDITIONS |

1

2


3

1. Location: Central Site

   Old Log Cabin with Stone/Brick Chimney

2. Location: South Central Site

   Large Barn

3. Location: Southwest Site

   On-Site Pond

EXISTING CONDITIONS |

4

5

4. Agricultural Remnants (trough/spring box and cattle skeleton)

5. Location: Southeast Site

   On-Site Cell Tower

6

7

6. Location: Southwest Site

   On-Site Well #1

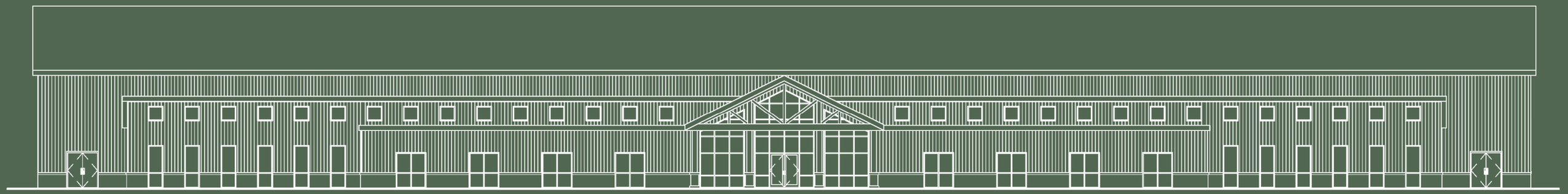
7. Location: Southwest Site

   On-Site Well #2

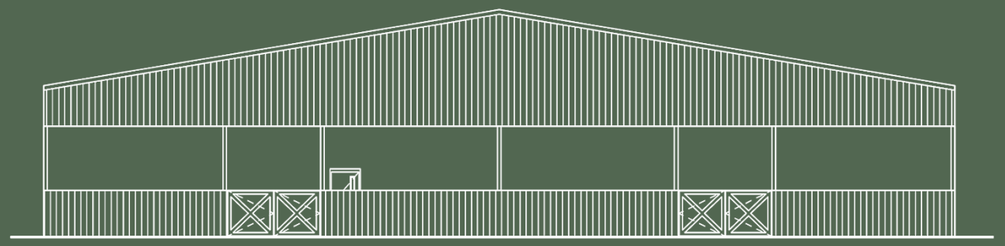
ARCHITECTURAL PARTNERS
be creative ▶ work together

ENTRANCE LOCATION
& ROADWAY IMPROVEMENTS

ELEVATIONS |



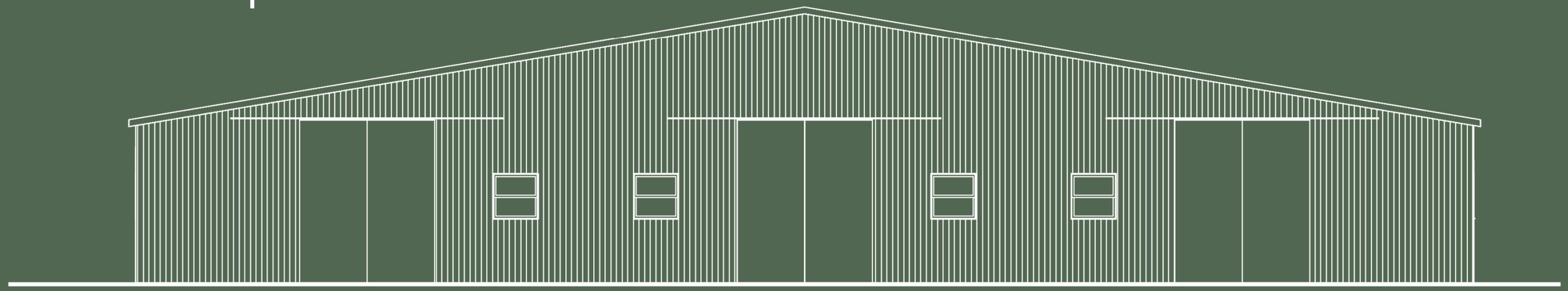
AGRICULTURAL COMPLEX



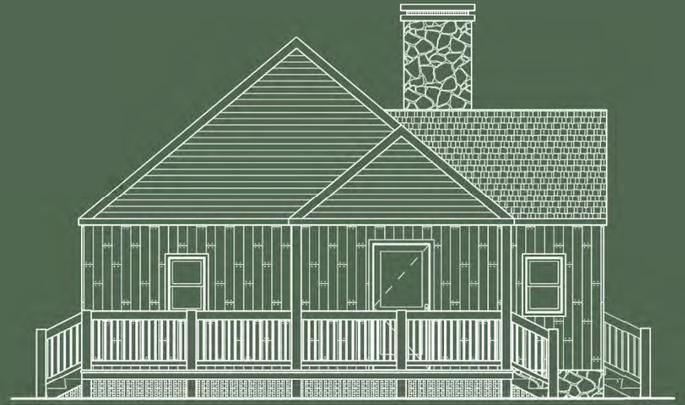
CATTLE WORKING FACILITY

EQUIPMENT TRAINING FACILITY

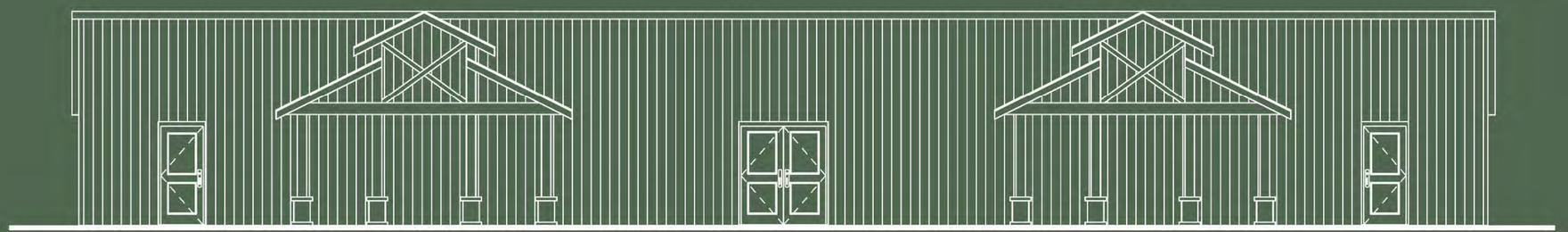
ELEVATIONS |



EQUESTRIAN CENTER



CABIN



FARMER'S MARKET

EXECUTIVE SUMMARY

Based on the program data from Counties, data, site observations, and resulting planning layout, the Architect can recommend that the site provided is "physically" suitable in size and topography for the use as an agricultural complex.

The Architect also realizes, as with any development, there are other variables that determine if a project is feasible. Some variables relate to financial, public acceptance, management/operations, government/agency approvals, and mutual collaboration of parties involved. AP is limited to the feasibility of the physical aspects and has assigned construction costs to these tangible parts. Other soft costs, financial, operational costs and future maintenance costs should be determined by the Counties.

AP also recommends that if the Counties make a purchase offer on the land, that purchase is contingent upon further domestic water quantity/quality confirmation and soils testing for sanitary use. AP and H&P have provided the Counties with a fee proposal for the soil exploration/testing/investigation and engineering design (currently has not been accepted).

Various components were analyzed and discussed in this report. While some factors such as total cost may be important, other factors such as environmental impacts and feasibility of utility services should also be considered. The findings of this PAFR are summarized below.

LAND

It is understood, at the time of this report, that the property is available for purchase & the current owner is receptive to the idea of selling the property to Amherst/Nelson Counties for construction of the agricultural complex. The property has an assessed value of $953,300, but the actual purchase price will need to be negotiated if the Counties decide to move forward.

SITE LAYOUT

Design considerations for this site include:

- 100,000 SF Paddocks, Arena, Conference Room, Kitchen, and Office
- 24,000 SF Equestrian Center & Cattle Barn
- 6,000 SF Farmers Market & Warehouse
- 15 Acre Fairgrounds
- 10 Acre CDL with 20,000 SF Equipment Training Area
- 6 Acre Environmental and Greenhouse Area
- 1.5 Acre Pond
- 16 Cabin Campground Area
- Riding / ATV Trail Traversing the Property
- Approximately 2,100 total parking spaces
- Alternative Item #1 (Camper Area – Fairgrounds)

The majority of the previously listed entities and required access roads were located within the existing agricultural fields. This planning located the features along the natural high points of the property and reduced the need for mass clearing/grubbing within the site.

EARTHWORK

The site earthwork quantities were analyzed at each site with the aforementioned design elements, and it was calculated that the preliminary earthworks volumes can be balanced onsite. The preliminary earthwork analysis completed in SITEOPS (Version 10.9.1.3) resulted in approximately 633,000 cubic yards of onsite cut & onsite fill required to grade the development.

ENVIRONMENTAL IMPACTS

Based on site observations and conceptual design plans, some stream and wetland impacts may be unavoidable from the proposed project. If impacts can be minimized though, CWA permitting through the USACE NWP process should be feasible. The highest-quality habitat is present in the stream valley in the northern portion of the study area (near the proposed pond, and in the forested area southwest of this pond location). It is recommended that efforts be made to conserve/preserve this area, if possible.

AVAILABILITY OF WATER AND SANITARY SEWER

The site currently does not have public water or sanitary sewer service. The nearest public water and sanitary infrastructure is over five (5) miles away, resulting in the site being required to utilize private wells and drainfields for service. Due to the size of the site and the soils found onsite, it is assumed that wells capable of meeting the required demand would be found on site and that there would be adequate space for the installation of drainfields. If the project moves forward, the next steps would be to verify flows with VDH and perform well testing and infiltration testing onsite.

AVAILABILITY OF OTHER UTILITIES

Natural gas is not available at the site.

Single phase power is available at the site through AEP. Lines will have to be relocated/installed to serve all proposed features of the site.

Telecommunications services are commercially available through a private ISP provider.

TRANSPORTATION ANALYSIS

A commercial entrance satisfying all sight distance requirements can be placed at the western full median crossover in front of the site. Storage lanes and tapers will be required to accommodate the traffic turning into the site. If Amherst and Nelson Counties decide to move forward with this project, the next steps would be to verify the proposed requirements with the Virginia Department of Transportation and perform an in-depth traffic study to confirm the existing and proposed conditions.

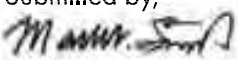
Site and Utility Summary	
Parcel ID	68 A 1, 41
Total Acreage	300.4 Acres
Assessed Land Value	$953,300
Existing Zoning	A-1 (Agricultural Residential)
Existing Use	Undeveloped/Agricultural
Existing Elevation Range	600ft – 850ft
Average Grades Within Portion of Site That is Optimum for Development	1% – 20%
Onsite Cut for Development	~ 633,000 CY
Onsite Fill for Development	~ 633,000 CY
Potential for Stream Impacts	Moderate-High
Potential for Wetlands Impacts	Moderate
Potential for Protected Species Impacts	Low-Moderate
Potential for Cultural Resources Impacts	Moderate
Potential for Floodplain Impacts	None
Existing Water Service	Existing Onsite Wells (Testing Required)
Proposed Water Service	Multiple Onsite Wells
Existing Sanitary Service	None (Possible Abandoned/Demolished Drainfield)
Proposed Sanitary Service	Multiple Onsite Drainfields
Natural Gas Infrastructure Availability	None
Electrical Infrastructure Availability	Single Phase Power Available
Telecommunications Infrastructure Availability	Telecommunications Available Through Private ISP
Entrance to Site	Upgrade to VDOT Commercial Entrance
Sight Distance Requirements	Requirements Can be Met
Turn Lane Requirements	Storage Lanes & Tapers Required

The following are summary costs of the expanded estimate included in TAB 2.

LAND		$1,200,000	
SITE			
• On-Site Preparation	$12,145,240		
• On-Site Improvements	$ 4,508,700		
• Utility Infrastructure	$10,770,313		
• Fire Protection	$ 694,950		
• Landscaping	$ 169,500		
• Site sub-total	$28,288,703		
NEW BUILDINGS AND STRUCTURES		$23,681,720	
TOTAL CONSTRUCTION ESTIMATE		$53,170,423	**$53,200,000**
ALTERNATE PLAN ADDITION-			
Cowboy/ RV Camping at Fairgrounds		$636,986	**$637,000**
TOTAL CONSTRUCTION ESTIMATE W/ALTERNATIVE		$53,807,409	**$53,800,000**

AP and H&P have appreciated the opportunity to work with Amherst County and Nelson County in providing this Preliminary Architectural Feasibility Report. We look forward to serving in continuation of this project.

Submitted by,



Mark W. Smith, Senior Architect

Agenda Item III.B.

Meeting Date: February 21, 2023

Department: Administration

Topic: **Chris Bryant - ANAC Advocate**

Board Action: The Boards are receiving a presentation from Chris Bryant, ANAC Advocate.

Attachment: None

Summary: The Amherst County Board of Supervisors and the Nelson County Board of Supervisors are being presented with information from Chris Bryant, ANAC Advocate, regarding a proposed shared Agriculture Complex.

Recommended Motion: None - For information only.

Comprehensive Plan Impact: This topic is not addressed in the Comprehensive Plan.