C&M Rucks Properties, LLC
Environmental Improvements Project

October 28, 2025

Prepared by:

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Section 1 Background

Royal Consulting Services, Inc. (RCS), as an authorized agent for C&M Rucks Properties, LLC, is pleased to submit this unsolicited proposal on their behalf. RCS and C&M Rucks Properties, LLC have teamed together to design and construct an environmental improvement project at C&M Rucks Dairy (C&M), located at 22420 NW 144th Avenue, Okeechobee, Florida 34972, within the Lower Kissimmee basin of the Lake Okeechobee Watershed (LOW) (See **Figure 1**). The operation encompasses approximately 1,730 acres and is authorized under Florida Department of Environmental Protection (FDEP) Permit No. FLA139092.

The predominant dairy cow breed is Holstein and 1,750 lactating cows with an average weight of 1,325 lbs are currently kept in the 297-acre Heavy Use Area (HUA) pastures. The dairy has historically operated as a pasture-based system, where cows spend significant time in open HUAs and pasture paddocks. Although the farm has implemented multiple best management practices (BMPs) to reduce nutrient runoff, the existing system's open-lot and pasture-based configuration limits the ability to fully control manure and wastewater flows during heavy rainfall events. As a result, C&M is pursuing an environmental improvement and modernization project to transition to a confinement-based system that will substantially reduce nutrient discharges and improve water quality in the Lake Okeechobee Basin.

Section 2 Project Description and Purpose

The C&M's Environmental Improvements Project is designed to substantially reduce nutrient runoff and improve water quality within the LOW through modernization and conversion of existing pasture-based dairy operations into a more controlled, confinement-based system. The project will replace the current HUAs and open-lot management practices with modern freestall facilities and advanced manure handling technologies to reduce nutrient loading, enhance water reuse efficiency, and improve overall farm sustainability.

2.1 Project Goals

The primary goal of transitioning the dairy from a pasture-based system to a confinement-based system is to provide enhanced control of manure and process wastewater. This transition will significantly reduce nutrient losses to surface waters and groundwater while maintaining herd productivity and supporting long-term environmental compliance.

2.2 Program Alignment

The proposed improvements align directly with FDACS and South Florida Water Management District (SFWMD) priorities for agricultural water quality enhancement. By moving manure management from open-lot to controlled confinement, recycling bedding materials, and expanding effluent reuse capacity, the project supports the agencies' goals for:

- Reducing nonpoint source nutrient loading to priority waterbodies;
- Promoting best available technologies for manure and wastewater management;
- Enhancing resilience and sustainability of agricultural operations within the Lake Okeechobee Basin; and
- Demonstrating practical, scalable solutions for regional nutrient reduction.

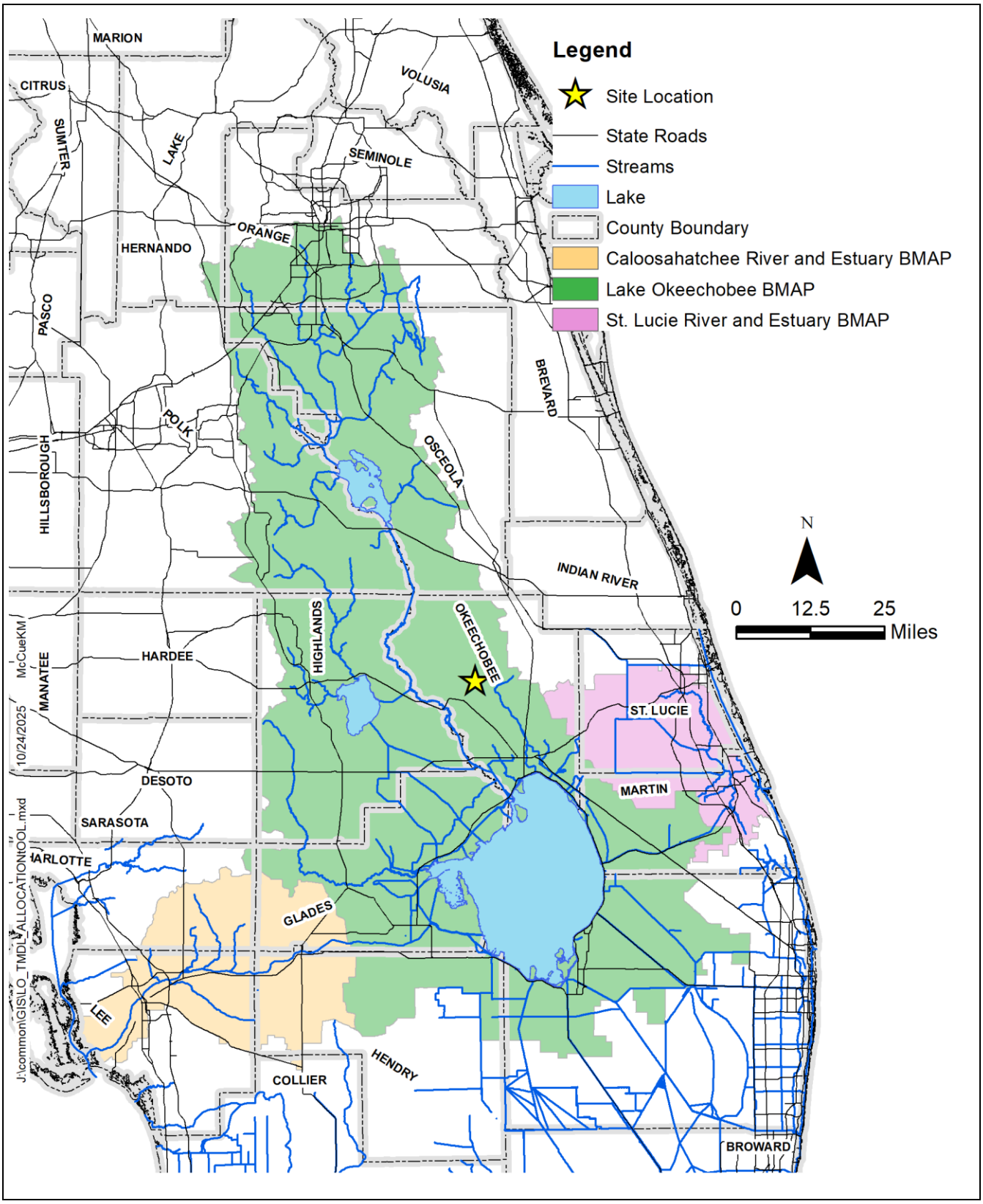

Figure 1 Project Location

Section 3 Design Components

The proposed improvements (see **Figure 2**) represent a comprehensive upgrade to both infrastructure and BMPs:

- Freestall Barn Construction:

  Two new 850-stall freestall barns will be constructed to house approximately 1,700 lactating cows in full confinement. This transition will remove cows from the HUA, eliminating direct manure deposits in pastures and uncontrolled runoff.

- Manure Handling and Sand Recovery:

  Installing a sand separation system and upgraded manure handling infrastructure will enable efficient recovery and reuse of bedding materials while concentrating manure solids for controlled management. Manure will be collected, separated, and transferred to lined storage for subsequent land application under nutrient management guidelines.

- Pasture Conversion and Fertility Management:

  Approximately 289 acres of high-intensity pastures will be converted to rotational grazing systems managed under BMPs for soil fertility, nutrient budgeting, and vegetative cover maintenance. This conversion will reduce soil nutrient loading and improve infiltration and pasture resilience.

- Sprayfield Expansion:

  The existing wastewater reuse system will be expanded through installation of a new 222-acre center pivot irrigation system, providing additional capacity for effluent recycling and controlled nutrient utilization on forage crops. The sprayfield design follows Natural Resource Conservation Service and FDEP standards for agronomic rate irrigation and hydrologic balance.

Conceptual plans providing the existing site layout and detailing the proposed improvements are included in **Appendix A**.

Section 4 Nutrient Load Reduction

The report, *Evaluation of Effectiveness of Abatement Strategies Compared Against Pre-Drainage and Existing Conditions in the Lake Okeechobee Watershed*, authored by Soil and Water Engineering Technology, Inc. (SWET) and published on May 28, 2019, evaluated the effectiveness of nutrient abatement strategies in the LOW using the Watershed Assessment Model, a GIS-based tool that simulates hydrology and water quality. These efforts, conducted to support the Lake Okeechobee Basin Management Action Plan (BMAP), provided guidance for the SFWMD, the FDEP, and the Florida Department of Agriculture and Consumer Services (FDACS). The study compared current and historical conditions to identify cost-effective BMPs and projects for improving water quality across the watershed. The SWET report provides estimates of the nutrient load (Nitrogen and Phosphorus) for various land uses in pounds per acre per year (lbs/ac/yr). Nutrient load rates are provided for a base condition, and reduced rates are provided assuming fertility and drainage BMP implementation.

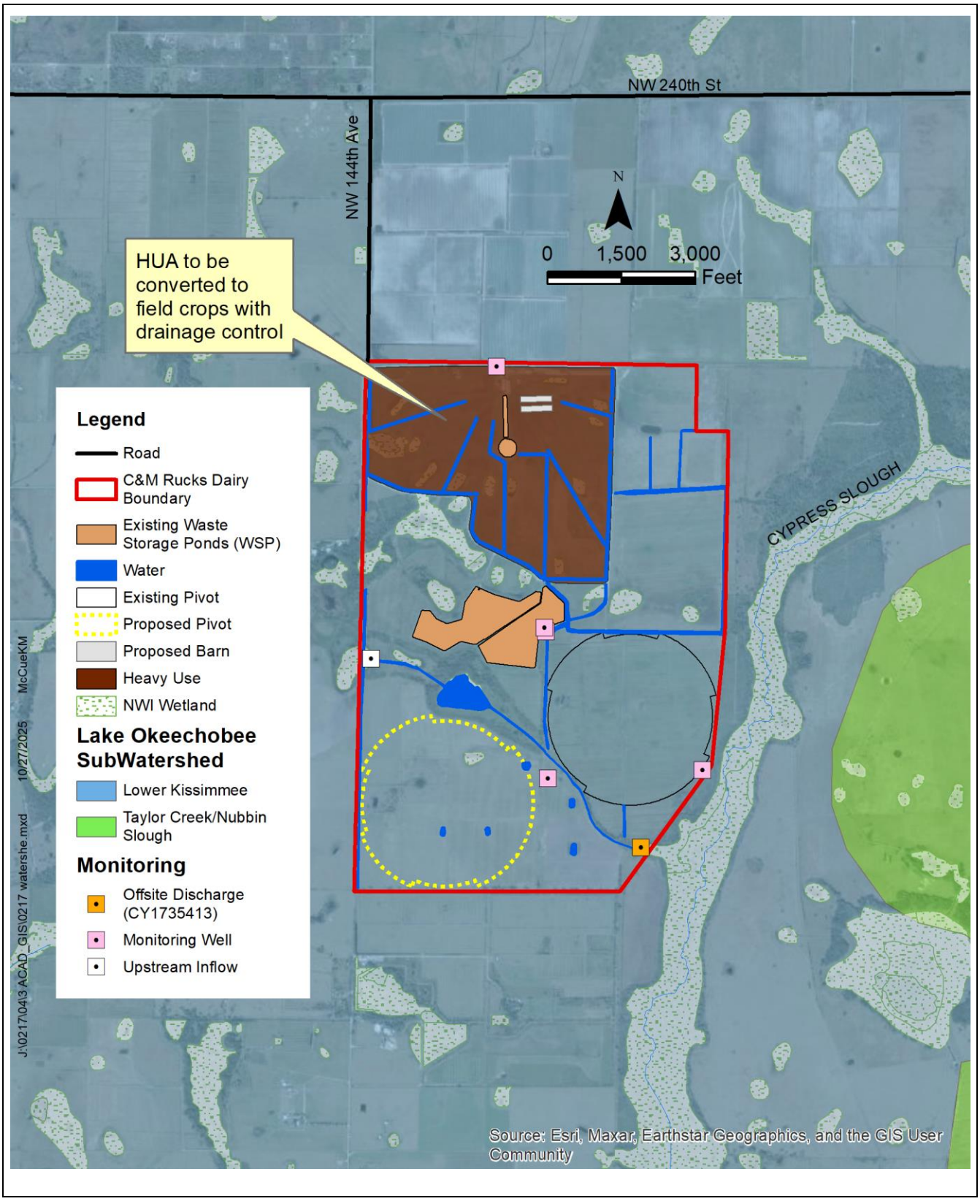

Figure 2 Proposed Improvements

The surface water flow from C&M drains to the east towards Cypress Slough, which drains to Chandler Slough and eventually, to Lake Okeechobee via the C-38 Canal. The dairy ground elevation falls from east to west with elevations ranging from 65 feet NGVD on the north side of the farm to 50 feet NGVD towards the south.

Modeling results indicate substantial nutrient load reductions to the Lake Okeechobee basin as a result of the proposed improvements:

- Total Nitrogen (TN):
  46% reduction estimated, equivalent to approximately 5,201 pounds of TN per year.
- Total Phosphorus (TP):
  76% reduction estimated, equivalent to approximately 2,349 pounds of TP per year.

These reductions, summarized in **Table 1** below, directly address basin management targets under the Lake Okeechobee BMAP and support regional water quality restoration objectives.

Table 1 Nutrient Load Reduction Calculation

Land Use	Acres	TN[1] (lbs/ac/yr)	TP[1] (lbs/ac/yr)	TN (lbs/yr)	TP (lbs/yr)
Existing Conditions					
Dairy HUA with Dainage Improvements	9.27	28.5	9.98	264	93
Dairy HUA with Dainage Improvements	280	28.5	9.98	7,980	2,794
Field Crop - Nutrient Balance	222.2	13.3	0.95	2,955	211
			Total Load	*11,199*	*3,098*
Proposed Conditions					
Dairy with Drainage BMP	9.27	12.1	1.35	112	13
Unimproved Pasture with Fertility BMP	280	6.5	0.83	1,820	232
Field Crops-Dairy Sprayfields with Fertility	222.2	18.3	2.27	4,066	504
			Total Load	*5,998*	*749*
			Nutrient Load Reduction	**5,201**	**2,349**
			% Reduction	**46%**	**76%**

1. Evaluation of Effectiveness of Abatement Strategies Compared Against Pre-Drainage and Existing Conditions in the Lake Okeechobee Watershed, SWET, 2019

Section 5 Permitting Plan

C&M has an existing Water Use Permit (WUP) through SFWMD Permit Number 47-00229-W. This permit was issued in 2013. The permitted allocation will be reviewed to determine additional water needs, if any. If an increase in allocation is required, a modification to the WUP will be completed.

C&M operates under FDEP CAFO Permit No. FLA139092. A modification of this permit will be requested based on a revised Nutrient Management Plan (NMP), which will recalculate the volumetric nutrient balance and water quality resulting from the proposed confinement barns and expanded stormwater ponds. The revised NMP will also include a wetland delineation, Threatened and Endangered (T&E) Species Survey, and how any mitigation requirements for T&E or wetlands will be accomplished. For this project, no wetland or T&E mitigation is anticipated.

Section 6 Monitoring & Reporting Plan

A map of the wells and pump stations used in the water quality monitoring and water use and level monitoring protocols are shown in Figure 2. The monitoring plan will consist of the following:

- Water quality monitoring – Quarterly
    - Existing monitoring wells, plus one new monitoring well near the proposed pivot
    - WSP
    - One upstream inflow location
    - One offsite discharge location
- Pumpage record – Monthly
    - As part of the FDEP permit meter reading from the existing irrigation pumps are conducted regularly and submitted quarterly
    - Flow totals will be recorded monthly

6.1 Water Quality Monitoring

In accordance with the NMP, the groundwater monitoring wells are tested on a quarterly basis and analyzed by a laboratory approved by the Florida Department of Health and Rehabilitation Services. At a minimum, water samples are analyzed for the following parameters:

- Total Nitrogen (as N)
- Nitrate Nitrogen (as N)
- Total Phosphorus (as P)
- Ortho Phosphorus (as P)
- pH
- Water Level
- Specific Conductance
- Fecal Coliform
- Temperature

This information is submitted quarterly to the FDEP and can be shared with the SFWMD as part of this project. During these quarterly events, water quality will also be collected from the upstream and the offsite discharge location.

6.2 Water Use and Level Monitoring

As a requirement of C&M's FDEP permit water level monitoring are already conducted on onsite wells and WSP. Monthly meter readings are taken and the total monthly flow (in million gallons) is submitted quarterly. Similarly, for the SFWMD monthly meter readings from water supply wells are recorded and submitted quarterly.

6.3 Final Report

At the conclusion of the five-year monitoring period, a comprehensive final water quality report will be submitted, summarizing the results, evaluating the effectiveness of implemented practices, and providing recommendations for ongoing management.

Section 7 Project Funding Plan & Cost Effectiveness

The total estimated project cost is approximately $9.6 million, including tax and a 10% contingency. Funding will be sought through cost-share programs administered by FDACS, SFWMD, and partner

agencies, leveraging private investment by C&M to maximize public benefit and cost efficiency. Please see the anticipated funding plan costs outlined below.

Table 2 Proposed Funding Plan

Component	Total Project
Present Cost	$9,607,763
Future Cost (F/P, 4.5%, 20 yrs)	$23,171,176
Annual Operation and Maintenance Costs ($/yr)	$100,000
Total Annual Average Costs (F/P, 4.5%, 20 yrs) / 20 + O&M	$1,258,559

A detailed breakdown of the present cost for the proposed improvements is provided in **Appendix B.**

7.1 Cost Effectiveness

The project demonstrates strong cost-effectiveness metrics for nutrient reduction:

- $242 per pound of TN reduced annually
- $536 per pound of TP reduced annually

Table 3 Cost Effectiveness Calculation

Parameter	Calculation	$/lb/yr
TN	$1,258,559/5,201	$242
TP	$1,258,559/2,349	$536

These values compare favorably with similar dairy and agricultural BMP implementation projects across the LOW, representing a cost-effective and replicable model for nutrient mitigation.

Section 8 Implementation Plan

Table 4 summarizes the implementation schedule for the proposed project.

Table 4 Implementation Schedule

Task No.	Task Title	Task Start Date	Task End Date
1	Site Assessment and Permitting	2025	2026
2	Engineering and Design	2025	2026
3	Infrastructure Construction	2026	2028
4	Monitoring and Reporting	2026	2031
5	Reporting and Compliance	2026	2031

Section 9 References

DBHYDRO (Environmental Data), 2025. South Florida Water Management District. South Florida Water Management District, https://www.sfwmd.gov/science-data/dbhydro.

Florida Department of Environmental Protection. *Industrial Wastewater Facility Permit No. FLA139092: C & M Rucks Dairy, Inc.* Issued to C & M Rucks Dairy, Inc., 13 Apr. 2021. Florida Department of Environmental Protection, Southeast District Office, West Palm Beach, FL. *PDF file.*

Royal Consulting Services, Inc. *C&M Rucks Dairy, Inc. Nutrient Management Plan Addendum.* Prepared by Kimberly McCue, P.E., Florida License No. 58110, Royal Consulting Services, Inc., Nov. 2020.

Soil and Water Engineering Technology, Inc., 2019. Evaluation of Effectiveness of Abatement Strategies Compared Against Pre-Drainage and Existing Conditions in the Lake Okeechobee Watershed. Prepared for South Florida Water Management District, May 28, 2019.

Appendix A
Conceptual Plans

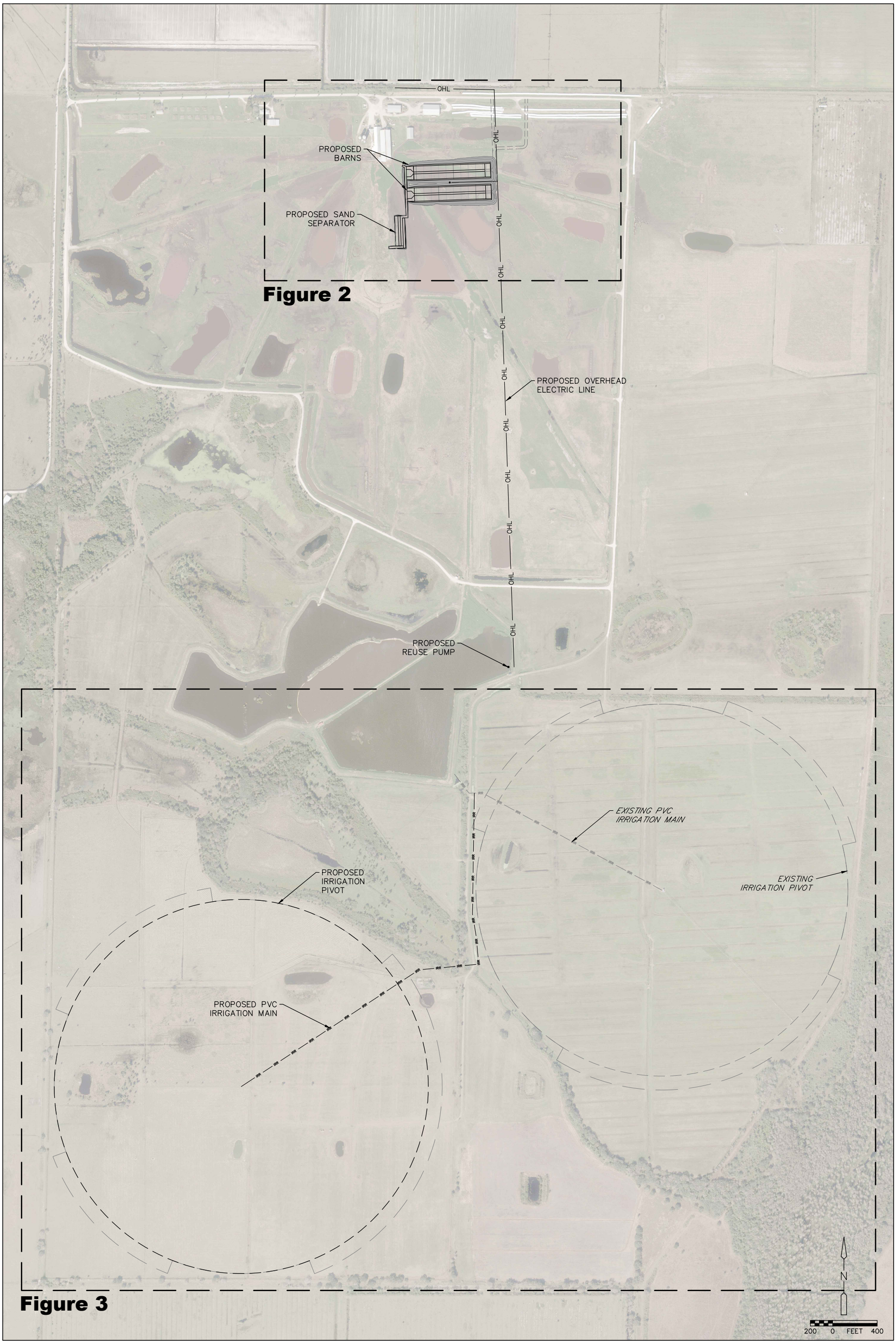

Figure 2

Figure 3

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Figure 1
C&M Rucks Dairy, Inc.
Site Map

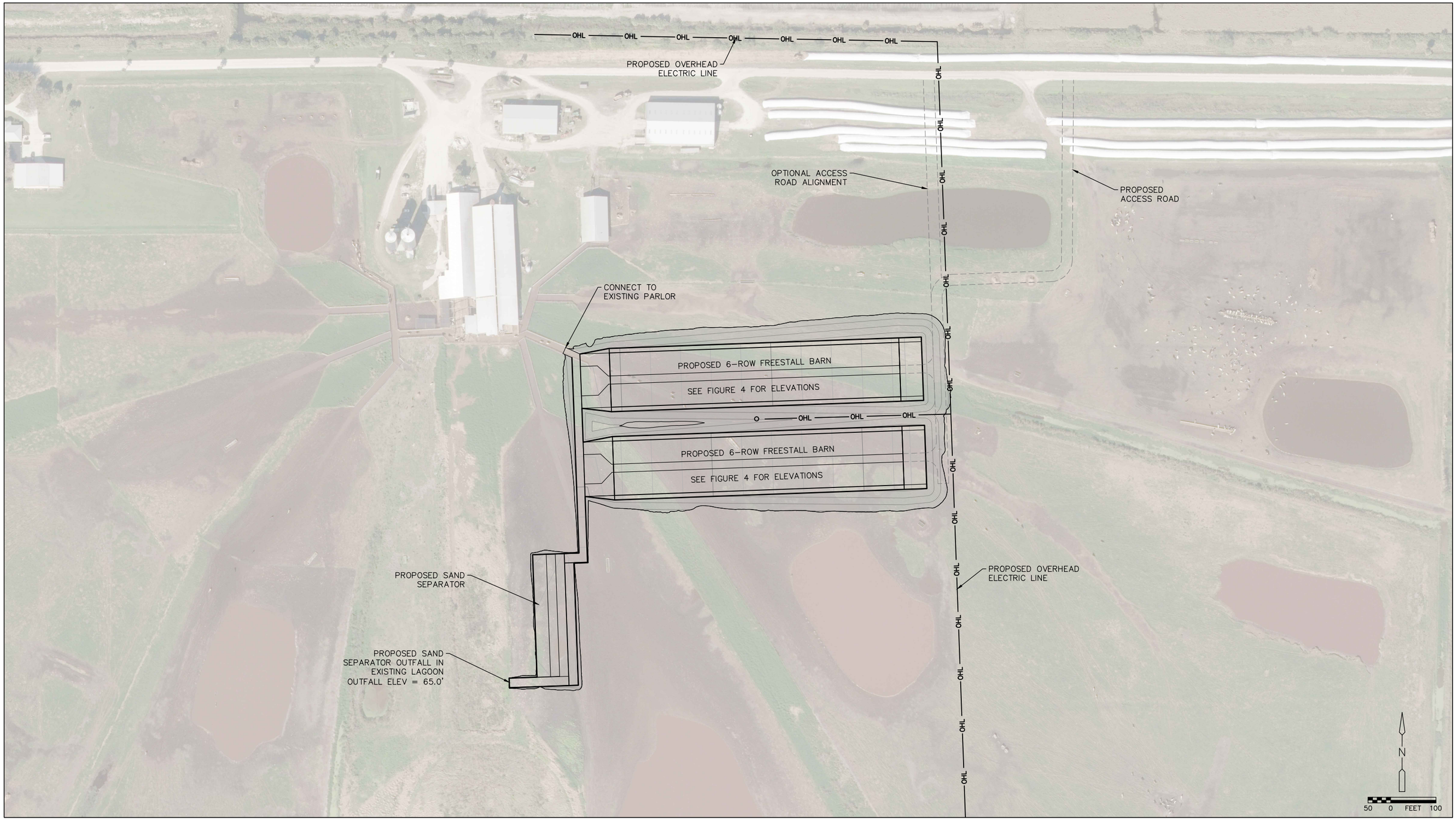

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Figure 2
C&M Rucks Dairy, Inc.
Site Detail

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Figure 3
C&M Rucks Dairy, Inc.
Site Detail

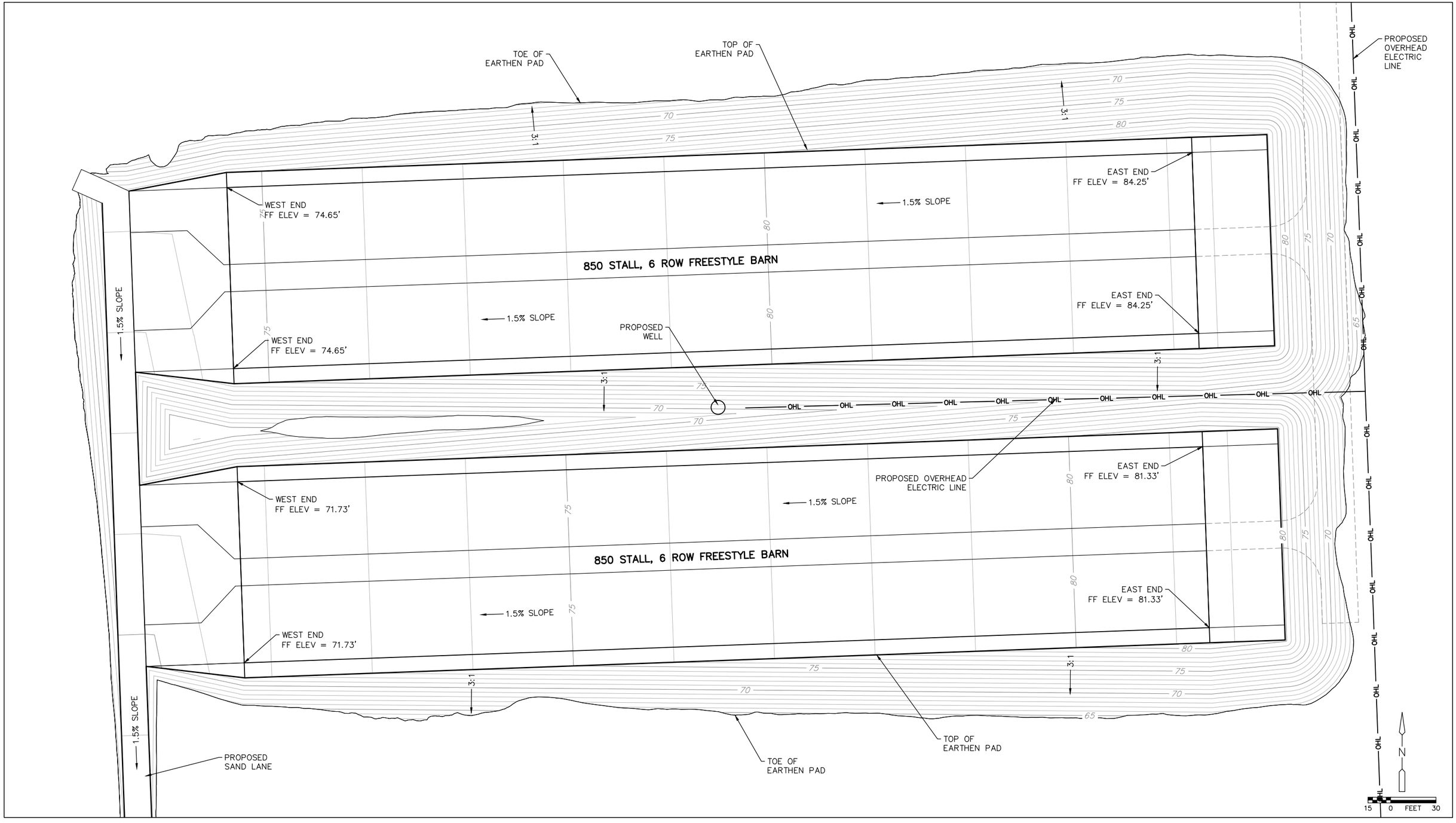

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Figure 4
C&M Rucks Dairy, Inc.
Site Detail

Appendix B
Detailed Breakdown of Present Cost

C&M Rucks Properties, LLC

Environmental Improvements
RCS Project No. 0217-04-ES
By: Richard A. Jones, PE
Date: October 27, 2025

2 X 850 Lactating Cow Barns

Description	Units	Quantity	$/Unit	Total Cost
850 Cow Freestall Barn including:	Cow	1,700	$2,853.15	$4,850,348.80
Barn Structure				
Barn Erection Labor				
Concrete Work				
Reuse Pipe Work & Flush Valves				
Stalls				
Fences and Gates				
Water Troughs & Water Pipe				
Electric Materials and Labor				
Sand Bedding				
Misc. expenses such as freight & supplies				
48" Cow Comfort Fans	Ea.	256	$975.20	$249,651.20
New 25,000 Gallon Flush Tanks & Slabs	Ea.	4	$49,035.19	$196,140.74
12" Flush Pipe Work	Ft	420	$95.84	$40,253.06
6" PVC Fresh Water Supply Main	Ft	600	$14.72	$8,829.90
8" PVC Flush Water Supply Main	Ft	4,370	$25.69	$112,265.30
Fresh Water Well, Pump & Pressure Tank	LS	1	$172,500.00	$172,500.00
Outside Concrete Work Including:	LS	1	$410,249.00	$410,249.00
484' Main Street				
Concrete Apron & Turn Around West End				
Concrete Apron West End				
Concrete Connection to Sand Separator				
Fences and Gates				
Earthwork for Barn Pad and Access Ramps(Includes 15% compaction)				
Grub site (Assumed 6" deep)	CY	6,970	$1.50	$10,455.00
Excavate fill from borrow, load trucks	CY	125,171	$1.50	$187,756.17
Haul fill to barn pad	CY	125,171	$1.00	$125,170.78
Place fill in barn pad	CY	125,171	$1.00	$125,170.78
Compact barn pad fill	CY	125,171	$0.50	$62,585.39
Place & Compact Shell Rock for Ramps	CY	185	$36.80	$6,808.00
Misc. Site Work Requirements	Percent	1	15.00%	$77,691.92
Sod - 12' wide around barn	SF	149,688	$0.35	$52,390.80
				$6,688,266.83

Sand Separator

Description	Units	Quantity	$/Unit	Total Cost
Concrete Work for 20' x 250' Long Sand Separator with 50' x 250' Sand Drying Area. Includes Concrete Work for Entrance and Exit Channels and Walls.	LS	1	$370,114.98	$370,114.98
Grub site (Assumed 6" deep)	CY	751	$1.50	$1,127.11
Earthwork for Sand Separator	CY	2,254	$4.00	$9,016.89
Sod - 12' wide around Separator	SF	10,800	$0.35	$3,780.00
				$384,038.98

Miscellaneous Requirements

Description	Units	Quantity	$/Unit	Total Cost
Extend OHPL to Barns	Ft	2,150	$20.00	$43,000.00
Extend OHPL to WSP Flush Pump	Ft	4,370	$20.00	$87,400.00
Construct Access Road to Barns, 24' Wide x 1,140' Long	Ft	1,140	$35.55	$40,529.11
30 HP Floating Flush Pump in WSP	LS	1	$31,467.50	$31,467.50
				$202,396.61

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222-Acre Irrigation System

Description	Units	Quantity	$/Unit	Total Cost
1,680' Radius Center Pivot including Freight, Erection, Sprinkler Package, End Gun, Booster Pump, Select Control Panel	LS	1	$207,400.97	$207,400.97
Diesel Powered Irrigation Pump (Existing)	LS	1	$0.00	$0.00
Stationary Diesel Generator, Slab, Roof, Fuel Tank	LS	1	$24,840.00	$24,840.00
10" PVC Main Line, Excavation, Labor	LS	4,000	$28.18	$112,700.00
				$344,940.97

General Construction Services

Description	Units	Quantity	$/Unit	Total Cost
Engineering	Ea.	1	$190,500.00	$190,500.00
Geotech/Survey/T&E/Permits	Ea.	1	$114,300.00	$114,300.00
Budget for BMP Project O&M, Monitoring, Testing & Documentation	LS	1	$100,000.00	$100,000.00
Construction Oversight	Months	12	$15,000.00	$180,000.00
Mob/Demob/General Services	Ea.	1	$45,000.00	$45,000.00
				$629,800.00

Summary	Total
2 X 850 Lactating Cow Barns	$6,688,266.83
Sand Separator	$384,038.98
Miscellaneous Requirements	$202,396.61
222-Acre Irrigation System	$344,940.97
General Construction Services	$629,800.00
Project Subtotal	***$8,249,443.39***
Sales Tax	$ 533,375.04
Contingency 10%	$ 824,944.34
Total with Tax & Contingency	**$9,607,762.77**