



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Solid Waste Management
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor
Nashville, Tennessee 37243

May 9, 2022

Kelly D. Warbis
EKAMOR Resource Corporation
610 North Pickard Avenue
Cookeville, TN 38501

RE: Permit-By-Rule for a Solid Waste Processing Facility
ERC – Research, Development, & Demonstration Facility – SWP710001586

Dear Mr. Warbis:

This letter will serve as official notice that the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management (DSWM), has approved your Permit-By-Rule notification for the referenced facility located in Putnam County at 1368 West Broad Street, Cookeville, Tennessee 38501 (latitude 36.1728/ longitude -85.5055). This facility shall be deemed to have a Permit-By-Rule provided the criteria of Rule 0400-11-01-.02(2)(a) of Tennessee's Solid Waste Processing and Disposal Regulations are met, including the permit conditions as submitted with your application. The registration number for this facility is SWP710001586. This number should be used on all reports and correspondence to TDEC or DSWM regarding this facility.

Per Rule 0400-11-01.02(2)(b)1(XVIII) solid waste processing facilities must file a financial instrument with the state of Tennessee in an amount sufficient to insure the proper closure of the facility prior to operation. The approved maximum storage capacity for the facility is 250 cubic yards. DSWM has determined that the closure amount for the approved volume does not require filing a financial assurance instrument; however, if storage increases you must notify the DSWM for re-evaluation.

With the issuance of this permit, there is an annual maintenance fee required [pursuant to Tennessee Rule 0400-11-01-.07(3)] for this processing facility. This year's fee has been pro-rated for the period covering May 9, 2022 through July 1, 2022 (53 days). Your pro-rated fee in the amount of \$435.62 is based on the annual fee of \$3,000 for a processing facility. Please contact TDEC-Division of Fiscal Services at 615-532-0065 to arrange for payment.

If you have questions concerning this letter, please feel free to contact Brianna Rives of this office by email at Brianna.Rives@tn.gov or call 615-308-0104.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lisa Hughey", is written over a blue horizontal line.

Lisa Hughey (May 16, 2022 11:55 CDT)

Lisa A. Hughey, CHMM
Director

cc: Nicholas Stengel, DSWM, Cookeville Environmental Field Office
Tara Wohlgemuth, TDEC Regional Director for External Affairs, Cookeville Environmental Field Office
Bassam Faleh, DSWM, Nashville Central Office
Erini Ryad, TDEC Financial Responsibility Group
Ian Jakul, TDEC Financial Responsibility Group
Ashley Frederick, TDEC Consolidated Fee Section
Central Files, DSWM, Nashville Central Office

March 10, 2022

Nicholas Stengel, Field Office Manager,
Tennessee Division of Solid Waste Management,
Cookeville Field Office
1221 South Willow Avenue,
Nashville, TN 38506

RE: Transfer Station Permit Application for Ekamor Resource Corporation (ERC)

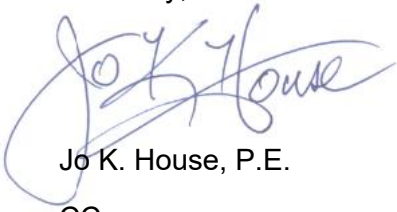
Dear Mr. Stengel,

Ekamor Resource Corporation (ERC) wishes to formally submit an application for a Municipal Waste Research and Development Processing Facility located at 1368 West Broad Street in Cookeville, Tennessee.

A narrative is provided describing the procedures that will be implemented to comply with the Tennessee Division of Solid Waste Management (TDSWM) regulations specific to a waste processing operation. Drawings are also provided that depict the location of the proposed transfer station.

Please contact Mr. Jo House at 615-330-0771 or Mr. Kelly Warbis at 949-355-2500 if you have further questions, comments, or concerns.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jo K. House", is written over a circular blue stamp.

Jo K. House, P.E.

CC:

Doug Hatfield, TDSWM Cookeville Field Office

Kelly Warbis, CEO Ekamor Resource Corporation



EKAMOR RESOURCE CORPORATION

PERMIT-BY-RULE APPLICATION

For:

SOLID WASTE PROCESSING R&D FACILITY

Proposed Location:

610 N. Pickard Ave.
Cookeville, TN 38501

Prepared By:

HOUSE WASTE SOLUTIONS, LLC
728 Webster Street
Nashville, Tennessee 37221

HWS Project 2021-8

March 2022

HWS

HOUSE WASTE SOLUTIONS LLC

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Introduction

The purpose of this document is to secure a Permit-by-Rule for Ekamor Resource Corporation (ERC) to operate a solid waste research and development facility (SWRDF) in Cookeville, Tennessee. ERC is committed to provide responsible solid waste management to the residents of Putnam County, Tennessee. The ERC solid waste management plan includes recycling and diverting as much of the waste stream as is feasible. The intent of the ERC SWRDF facility is to perform research to perfect existing processes that produce refuse derived fuel from municipal solid wastes (MSW). Based upon the proposed ERC operations this facility is to be designated as a processing facility by the Tennessee Division of Solid Waste Management (TDSWM) and will be operated to satisfy the requirements specified in Section 0400-11-01-.01(2) of the TDSWM regulations as follows:

“Processing facility” means a combination of structures, machinery or devices utilized to perform solid waste processing, including other storage and processing areas. The term does not include collection vehicles.

The site demographics for the ERC SWRDF are as follows;

Physical Address	1368 W. Broad Street,
City/State	Cookeville, Tennessee, 38501
Latitude/longitude	Decimal Degrees 36.171835N / -85.538455W Degrees/minutes/seconds 36° 10' 19.91" N -85° 32' 19.63" W
Northing/Easting	N669682.15 / E2104631.05 - North American Datum (NAD 83)
Site Acreage	4.49
Map / Parcel	054D A 034.04
USGS Map	Cookeville West
Flood Zone	Zone X – Area of Minimal Flood Hazard See Panel 47141C0120D
Waste Materials Accepted	Municipal Solid Waste (MSW)

The SWRDF operation will be situated inside a warehouse building approximating 13,800 square feet. The purpose of this document is to secure a Permit by Rule for the ERC to operate a municipal solid waste (MSW) SWRDF. In addition, the facility provides ERC with the opportunity to divert MSW from Class I landfills. The following paragraphs describe the manner in which the ERS will comply with the Tennessee Division of Solid Waste Management (TDSWM) Permit-By-Rule Conditions (PBR) required for operation of the proposed SWRDF.

This document has been prepared by stating the regulation taken verbatim from Section 0400-11-01-.01 (2) of the regulations governing solid waste disposal and processing in Tennessee and then providing a narrative description of the manner in which the facility will comply with the specific regulation cited.

Process Specific Summary

The proposed processing permit-by-rule application has been prepared primarily for a research and development (R&D) facility. Technical data will be collected specific from the production of various combinations of refuse derived fuel (RDF) pellets that will be used in coordination with a couple of gasifier manufacturers. The R&D performed at this facility will help develop an RFD pellet that is most economically viable and fuel efficient for the targeted manufacturing facilities.

Ekamor operated a pilot plant in Chicago, Illinois for 18 months to determine the most appropriate equipment that could be used providing a non-thermal municipal solid waste (MSW) drying system. The Ekamor process will utilize air to shear the moisture from the solid waste material. The moisture laden air will be released to the atmosphere after it has been directed through a PM10 filtration system via a baghouse. The fines collected from the baghouse are blended with the processed solid waste material to produce the RDF pellets.

This facility is equipped to process approximately 8 tons per day of MSW. The Ekamor process utilizes a magnet and eddy current system to remove the metals from the waste. The metal separated from the waste will be recycled on the open market. In addition, ERC uses an optical sorter to remove PVC materials from the municipal solid waste stream. ERC is projecting that the volume of waste generated by the R&D process will be less than 10% of the total waste stream that is processed.

A schematic is provided in Appendix C that illustrates the entire process.

Permits by Rule Criteria: Waste Processing Facility

The following narrative responses describe how the proposed ERC Waste Processing facility will comply with each of the regulatory criteria referenced below:

Local Approval Requirements

Rule 0400-11-01-.02(1)(c)2.(v) Local Approval under T.C.A. Title 68, Chapter 211, Part 7 - The department shall not review or approve a notification for a solid waste processing facility or an application for a new solid waste landfill that is proposed to be located within jurisdictions that have adopted the Jackson Law until the application or notification for a processing facility permit by rule is approved pursuant to T.C.A. § 68-211-704.

Response: *On November 9, 1989, the County Commission for Putnam County adopted a resolution making applicable to Putnam County, Tennessee the provisions of Part 7 of Chapter 211 of title 68 of the Tennessee Code Annotated to require local approval of landfills, solid waste disposal facilities and solid waste processing facilities prior to the construction of such facilities.*

Rule 0400-11-01-.02(1)(c)2.(vii)(II) - Evidence of approval by the local government(s).

Response: *The Putnam County Commission Resolution approving the ERC facility is provided in Appendix B of this document.*

Wetland Location Requirements

Rule 0400-11-01-.02(2)(a)4. - New solid waste processing facilities, tire storage facilities, and SWRDFs must not be located in wetlands, unless the owner or operator makes the applicable demonstrations to the Commissioner as referenced at subparagraph (2)(p) of Rule 0400-11-01-.04.

Response: *A review of US Fish and Wildlife Service (USFW) National Wetlands Inventory (NWI) wetlands map did not delineate or identify the presence of wetlands at the proposed site of the ERS processing facility. The correspondence from the USFWS is attached with this document.*

Floodplain Location Requirements

Rule 0400-11-01-.02(2)(a)5 – Solid waste processing facilities, tire storage facilities, and SWRDFs must not be located in a 100-year floodplain unless it is demonstrated to the satisfaction of the Commissioner that:

- (i) Location in the floodplain will not restrict the flow of the 100-year flood nor reduce the temporary water storage capacity of the floodplain; and

- (ii) The facility is designed, constructed, operated, and maintained to prevent washout of any solid waste.

Response: *The ERC facility is located on the Federal Emergency Management Act (FEMA) flood insurance map # 47141C0120D (see Appendix A). The effective date of the map was October 2020. A review of the FEMA map revealed that the site was designated as Zone X. Zone X is defined by FEMA as areas of 0.2% annual chance of flood. It should be noted that areas of 1% chance of flood are referred to as areas within the 100-year flood or base flood zone. The 100-year flood plain is also the area that is considered to have a 1% chance of having a flood in any one year. Therefore, based upon this information the site is not susceptible to impacts from the 100-year flood event.*

Endangered Species / Critical Habitat Requirements

Rule 0400-11-01-.02(2)(a)6 – Solid waste processing facilities, tire storage facilities, and SWRDFs must not:

- (i) Cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife; or
- (ii) Result in the destruction or adverse modification of the critical habitat of endangered or threatened species.

Response: *The U.S. Fish and Wildlife Service (USFWS) database was searched specific to the location of endangered and threatened species that could potentially be impacted by the operation of the proposed ERC facility. Based upon correspondence from the USFWS there are no known observations of rare species within the limits of the facility. Further, no critical habitats were identified at the location of the proposed facility. The correspondence from USFWS is attached with this document.*

Robbie Sykes of the U.S. Fish and Wildlife Service in Cookeville, Tennessee was also contacted as part of the site-specific search for the presence of endangered or threatened species that could be impacted by the proposed facility.

The endangered and threatened species information secured for this application is provided in Appendix B of this report.

Airport Buffer Requirements

Rule 0400-11-01-.02(2)(a)7&8 – An owner or operator proposing a new solid waste processing facility or a SWRDF that handles putrescible wastes located within 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft or within 5,000 feet (1,524 meters) of any airport runway end used only by piston-type aircraft must demonstrate to the satisfaction of the Commissioner that the facility does not pose a bird hazard to aircraft.

An owner or operator proposing a new solid waste processing facility or a transfer station that handles putrescible wastes located within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft must notify the affected airport and the appropriate Federal Aviation Administration (FAA) office.

Response: *The closest airport to the proposed ERC Facility is a local airport situated approximately 26,064 feet. The airport is referenced as One Grand Field 5TN9 and is located as 4170 Cowan Road in Cookeville, Tennessee. The runway is unpaved and used only by small propeller aircraft.*

Operations and Maintenance Controls

Rule 0400-11-01-.02(2)(b)(i) - Except as specified in subpart (iv) of this part, an owner or operator of a solid waste processing facility shall:

- (I) Construct, operate, maintain, and close the facility in such a manner as to minimize:

Vector Controls

- I. **The propagation, harborage, or attraction of flies, rodents, or other disease vectors;**

Response: *ERC must control the propagation, harborage, or attraction of flies, rodents, or other disease vectors;*

A number of operational practices will be implemented as necessary at the facility to minimize the attraction of vectors as follows;

- Any cracks or openings discovered in and around the SWRDF building foundation will be eliminated or screened to reduce opportunities for entry by rodents.*
- Bird-deterrent measures, such as suspended or hanging wires to keep birds out of structures, and eliminating horizontal surfaces where birds can congregate will be installed if necessary.*
- ERC will remove any MSW not processed at the end of the day from the tipping floor and deliver it to the Putnam County Transfer Station located at 1846 South Jefferson Avenue in Cookeville, Tennessee.*
- In the event that rodents become an issue at the SWRDF facility, a professional pest control company will be retained.*
- ERC staff will also routinely inspect the SWRDF facility for potential vector habitat so that appropriate measures can be implemented as necessary.*

Finally, since this facility is located indoors the number of potential vectors of concern would be limited primarily to mice, rats, and potentially birds if the facility doors. Bird-scare devices, such as recordings of predatory birds or plastic decoys, can help alleviate scavenging. Baited traps can be used to control rodents, and humane traps can capture larger mammals such as raccoons and possum. However, since the ERC facility will leave no waste on the tipping floor at the end of the day these vectors should not present a concern.

Control of Explosions and Uncontrolled Fires

- II. **The potential for explosions or uncontrolled fires;**

Response: *The following Best Management Practices (BMP's) will be implemented at the ERC facility to minimize the potential for explosions and uncontrolled fires.*

INSPECTION OF LOADS

Loads are thoroughly inspected as they are dumped on the ERC concrete floor to determine if there is a potential for explosion or fire by trained personnel. Should materials be received that pose a risk of explosion, the Site Manager will be notified immediately of the situation. The material will remain untouched and the

affected area immediately evacuated of all ERC personnel. In addition, ERC operations will be terminated or moved to an area where the potential risk to personnel and equipment is reduced. After evacuating ERC personnel, the Site manager will contact the Cookeville Fire Department and the Putnam County Emergency Management Agency (PCEMA). In the event that an on-site explosion does occur; the Site Manager will immediately evacuate personnel and, if safely possible, move equipment away from the area where the explosion occurred. The Site Manager will then notify the appropriate emergency authorities of the situation.

Cookeville Fire Department

*45 East Broad Street
Cookeville, TN 38501
(931) 520-5236
Chief: Benton Young*

Putnam County Emergency Services

*700 County Services Drive
Cookeville, Tennessee, 38501
(931)-528-7575
EMA Director: Tyler Smith*

MATERIALS MANAGEMENT

No tanks with liquid or propane are accepted at the facility to minimize the possibility of explosion and fire. Any waste loads received at the ERC SWRDF that are burning or smoldering will be extinguished with water. The building is serviced with a two-inch water line from the City of Cookeville Water Department. Each piece of heavy equipment will also be equipped with fire extinguishers.

Metal recyclables will be stored outside in roll-off containers. Any metal tanks that are removed from the MSW are stored in a separate bin. Again, no tanks with liquid or propane are accepted at the facility to prevent the possibility of explosion and fire.

Control of Solid Waste Releases

III. The **potential for releases of solid wastes or solid waste constituents** to the environment except in a manner authorized by state and local air pollution control, water pollution control, and/or waste management agencies; and

Response: *ERC has minimized the potential for releases of solid wastes or solid waste constituents to the environment since the operation is performed indoors. ERC will comply with state and local air pollution control, water pollution control, and/or waste management agencies as described below;*

Air Pollution Control

Air pollution concerns at the site are limited to dusty wastes delivered to the ERC and exhaust (particularly diesel) mobile equipment such as trucks and loaders, and from a hammermill. It should be noted that this operation will not add a potential impact to outdoor air quality since the SWRDF operation is performed in a closed structure with a cyclone and baghouse.

Water Pollution Control

Potential water quality impacts from the ERC are also minimal since all operations are performed indoors on a concrete pad, which has drains to the City of Cookeville Wastewater Treatment Plant.

Site Access Control

IV. The potential for harm to the public through **unauthorized or uncontrolled access**;

Response: *Site access to the facility by motorized transportation will be limited to West Broad Street. The gate to the entrance of the facility will be locked after hours that prevents the public from entering the site. In addition, the building used to process the waste is locked at night to further inhibit located along the entrance route to the facility will be continuously monitored with security cameras.*

Natural Barrier

(II) Ensure that the facility has an **artificial or natural barrier**, which surrounds the facility and a means to control entry, at all times, through the gate or other entrances to the facility;

Response: *A chain link fence with a locking gate controls unauthorized entry and access to the ERC SWRDF. barriers for the ERC facility.*

Site Signage

(III) Ensure that the facility, if open to the public, has clearly **visible and legible signs** at the points of public access which indicate the hours of operation, the general types of waste materials that either will or will not be accepted, emergency telephone numbers, schedule of charges (if applicable), and other necessary information;

Response: *The ERC SWRDF is not open to the public, therefore, site signage is not applicable for this facility.*

Trained Personnel

(IV) Ensure that the facility has **trained personnel** present during operating hours;

Response: *Scientists, engineers, and skilled professionals will be present on-site at all times since this facility is for research and development.*

Sanitary Facilities for Personnel

(V) Ensure that the facility has **adequate sanitary facilities**, potable water, emergency communications (e.g., telephone), and shelter available for personnel;

Response: *A 13,800 square foot metal building structure has a climate controlled 357 square foot break room and two restrooms for employees. is located near the office/scale house building. The office/scale house is climate controlled. Restrooms, Port-A-Johns, and drinking water are provided at locations easily accessible to site personnel.*

The ERC facility has telephone service within the 524 square feet of office space within the structure that is capable of summoning emergency assistance to the site.

Waste Handling Restrictions

(VI) Ensure that the facility has access road(s) and parking area(s) constructed so as to be accessible in all weather conditions;

Response: *All site access roads and parking areas at the facility will be paved surfaces;*

(VII) Restrict all **waste handling** (including loading and unloading) at the facility to paved surfaces;

Response: *All waste handling (including loading and unloading) at the facility will be conducted indoors on paved surfaces;*

Storage of Solid Wastes

(VIII) Restrict the **storage of solid wastes** at the facility to containers, bins, lined pits or on paved surfaces, designated for such storage;

Response: *The only material that will be stored outside will be recycled metal, which will be stored within roll-off containers situated on a paved surface.*

Burning of Wastes

(IX) **Not burn solid wastes** at the facility;

Response: *There will be no burning of solid wastes at the facility;*

Scavenging of Wastes

(X) **Prohibit scavenging of solid wastes** at the facility and limit any salvaging to safe, designated areas and times;

Response: *Scavenging will not be allowed at the facility. Scavenging activities will be prevented during operating hours by on-site personnel who control ingress and egress of trucks and individual access to the R&D operations. After hours scavenging will be controlled by a locked entrance gate.*

Blowing Litter

(XI) **Blowing Litter** - Ensure that wind dispersal of solid wastes at or from the facility is adequately controlled, and that windblown litter and other loose, unconfined solid wastes are collected daily and properly disposed;

Response: *Litter is not anticipated at this facility since the operation will be performed inside an enclosed structure. Furthermore, the potential for blowing litter at the ERC facility will be further reduced with the implementation of the following best management measures:*

- *The SWRDF has been oriented with respect to the predominant wind direction so it will be less likely to blow through the building (or tunnel) and carry litter out. The SWRDF has been oriented such that the loading doors are blocked from the predominant wind direction.*
- *ERC will require all loads to be covered or tarped which will help reduce litter from waste trucks. ERC does not accept waste from random, private sources. The City of Cookeville is anticipated to be the only source of waste accepted at the facility.*

- *Routine litter patrols to collect trash on site, around the perimeter, on immediately adjacent properties, and on approach roads and the hauling route(s) are performed by ERC staff.*
- *The tipping pad floor will be cleaned regularly and no waste is left on the floor at the end of the working day. This will minimize any potential for the presence of loose material that can be blown from the facility.*

Liquid Management

- (XII) **Liquid Management** - Ensure that all liquids, which either drain from solid wastes or are created by wash-down of equipment at the facility are collected and directed to either:
- A wastewater treatment facility permitted to receive such wastewaters under T.C.A. §§ 69-3-101 et seq. (Tennessee Water Quality Control Act), or
 - Other methods approved by the Commissioner.

Response: *Liquids generated from the tip floor pad drains by gravity into floor drains that are connected to the Cookeville Wastewater Treatment facility piping. It should be noted that the frontend process that will be implemented at the facility is the drying of the waste which should significantly reduce the volume of liquid generated at the facility.*

Special Wastes

- (XIII) Ensure that **special wastes** are not received, unless:
- Such receipt has been specifically approved in writing by the Commissioner, and
 - Special procedures and/or equipment are utilized to adequately confine and segregate the special wastes;

Response: *No special wastes are currently anticipated to be accepted by the ERC SWRDF.*

Disposal Alternatives

- (XIV) Have **alternative disposal arrangements** (e.g., contracts with other facilities) for the proper processing or disposal of the solid wastes authorized to be managed at the facility in the event the facility cannot operate;

Response: *In the event that the SWRDF facility cannot operate, the wastes delivered to the SWRDF will be directed to the Putnam County Solid Waste Transfer Station located at 1846 South Jefferson Avenue in Cookeville, Tennessee.*

Fire Suppression Equipment

- (XV) Properly **maintain and locate fire suppression equipment** (e.g., fire extinguishers, water hoses) and make the equipment continuously available in sufficient quantities to control accidental fires that may occur

Response: *Procedures have been developed to respond to accidental fires at the ERC SWRDF. The following paragraphs detail the equipment available for firefighting*

and the procedures developed for response to accidental fires and/or potential explosions.

FIRE SUPPRESSION EQUIPMENT

Fire extinguishers are provided on each piece of heavy equipment utilized at the site. The fire extinguishers will be properly maintained and recharged, as necessary. ERC personnel will be properly trained in the use of the fire extinguishers. The SWRDF is also equipped with fire hydrant located approximately 160 feet east of the loading dock of the SWRDF building to help extinguish fires.

FIRE RESPONSE PROCEDURES

Should wastes be received at the facility that are burning, smoking, or at a temperature that will potentially cause a fire, it will be immediately removed from the ERC tipping floor and segregated from other materials so it can be extinguished with fire extinguishers, or with water as is deemed appropriate. In the event that the fire cannot be controlled by on-site personnel, one of the following fire departments will be immediately notified to aid in the firefighting activities:

**Cookeville Fire Department
45 East Broad Street
Cookeville, TN 38501
(931) 520-5236
Chief: Benton Young**

Processing Equipment Installation

(XVII) Install the processing equipment on-site and ensure it is ready for use before accepting solid waste for storage or processing;

Response: It is imperative that all associated equipment proposed for this facility is installed and in working condition prior to the acceptance of any solid waste since processing facility is not a commercial operation and its sole purpose is for R&D.

The primary equipment utilized at this facility will include at a minimum the following:

- Shredder
- Magnet based separator
- Eddy Current
- Ballistic separator and/or optical sorter
- Mechanical Pulverizer
- Cyclone Moisture Separation Device
- Compressor

GLOSSARY OF TERMS

ASTM – American Society for Testing and Materials
BMP – Best Management Practices
CD – Construction/Demolition
CEFO – Cookeville Environmental Field Office
EPA – Environmental Protection Agency
ERC – Ekamor Resource Corporation
FAA – Federal Aviation Administration
FEMA – Federal Emergency Management Act
HWS – House Waste Solutions LLC
MSL – Mean Sea Level
MSW – Municipal Solid Waste
NWI – National Wetlands Inventory
NAD – North American Datum
PBR – Permit-B- Rule
PCEMA – Putnam County Emergency Management Agency
psi – pounds per square inch
POTW – Public Owned Treatment Works
R&D – Research and Development
RFD – Refuse Derived
SE – Southeast
SWRDF – Solid Waste Research and Development Facility
T.C.A. – Tennessee Code Annotated
TDEC – Tennessee Department of Environment and Conservation
TDWR – Tennessee Division of Water Resources
TDSWM – Tennessee Division of Solid Waste Management
TMSP – Tennessee Multi-Sector Permit
TDWRA – Tennessee Division of Wildlife Resources Agency
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey

APPENDIX A

MAPS / DRAWINGS / SITE LOCATION REQUIREMENTS



NORTH

COOKEVILLE

Holladay

HWS

HOUSE WASTE SOLUTIONS LLC

728 Webster Street

Nashville, Tennessee 37221

615-330-0771

EKAMOR RESOURCE CORP
MSW R&D PROCESS FACILITY
COOKEVILLE, TN

FIGURE 1
SITE LOCATION MAP

DRAWN BY: CDS	CHECKED BY: JKH	APPROVED BY: JKH	FIGURE NO.:
DATE: MARCH 2022	DWG SCALE: NTS	PROJECT NO: 2021-10	

1

D:\BI-COUNTY LANDFILL\ -CADD\ Dwg\ 173-249 Woodlawn Figure 1 Site Location MAP\ LS(6/18/2020 - j house) - LP: 3/10/2022 12:41 PM

Putnam County - Parcel: 054D A 034.04



Date: December 13, 2021
County: Putnam
Owner: SPARROW VENTURES GP
Address: W BROAD ST 1368
Parcel Number: 054D A 034.04
Deeded Acreage: 4.49
Calculated Acreage: 0
Date of Imagery: 2018

TN Comptroller - DPA
Esri, HERE, Garmin, (c) OpenStreetMap contributors
State of Tennessee, Comptroller of the Treasury, Department of Property
Assessment (DPA) - Geographic Services
TDOT

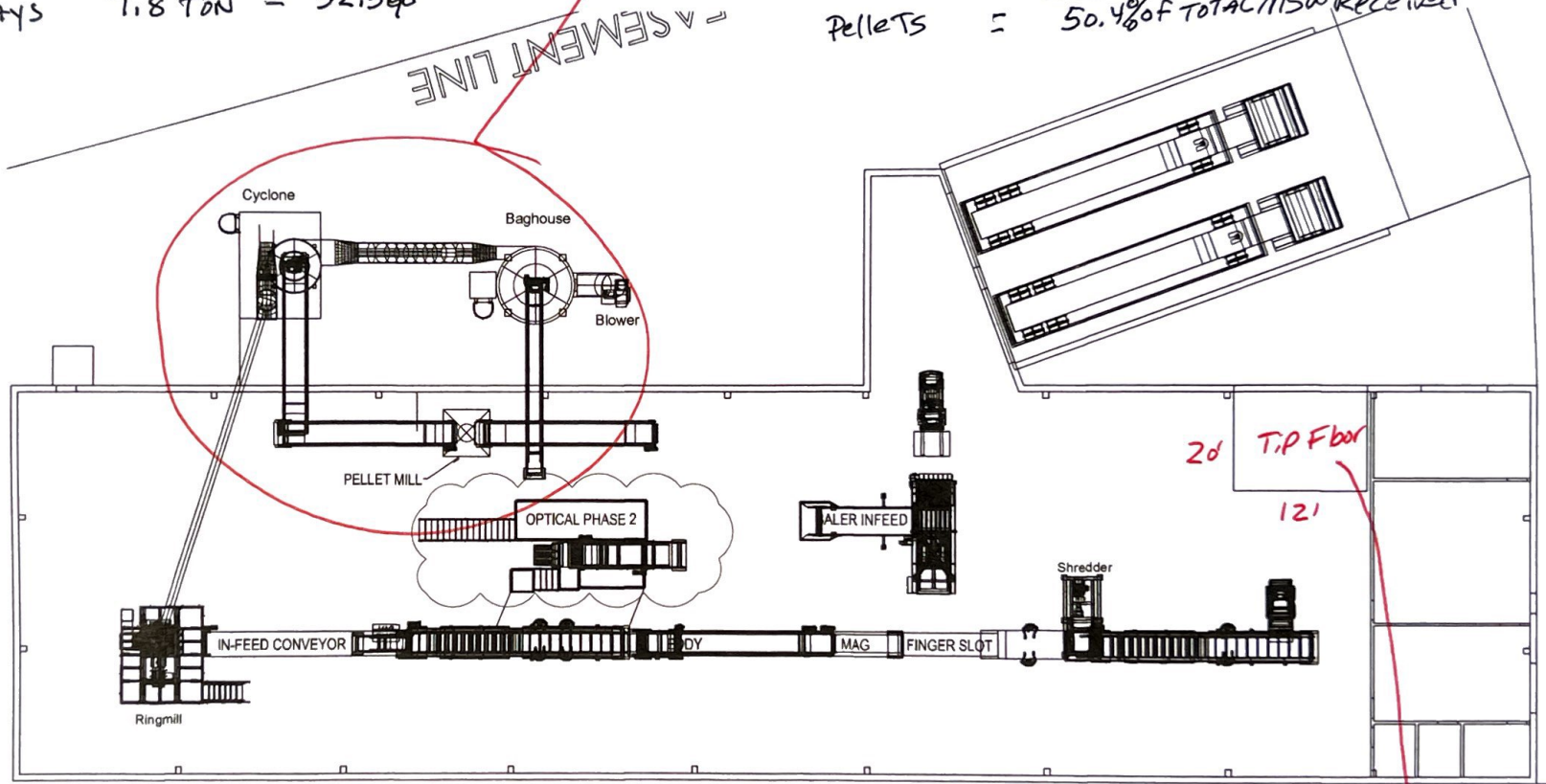
The property lines are compiled from information maintained by your local county Assessor's office but are not conclusive evidence of property ownership in any court of law.

Potnam County Waste Audit results:

NON Ferrous	-	3.97%
Ferrous	-	1.5%
#1 Plastic	-	5.95%
#2 Plastic	-	1.98%
Inerts	-	6.12%

Total 19.60%
Per DAY weight 1.57 TON 10.47 yd³
x 5 days 7.8 TON - 52.3 yd³

$$\begin{aligned} \text{Pellets} &= 100\% \\ \text{TOTAL MSW} & \\ - \text{Recyclables \& Inerts} & (19.6\%) \\ - \text{Moisture} & (30\%) \\ \hline \text{Pellets} &= 50.4\% \text{ of TOTAL MSW Received} \end{aligned}$$



Worst Case Scenario

5 day run

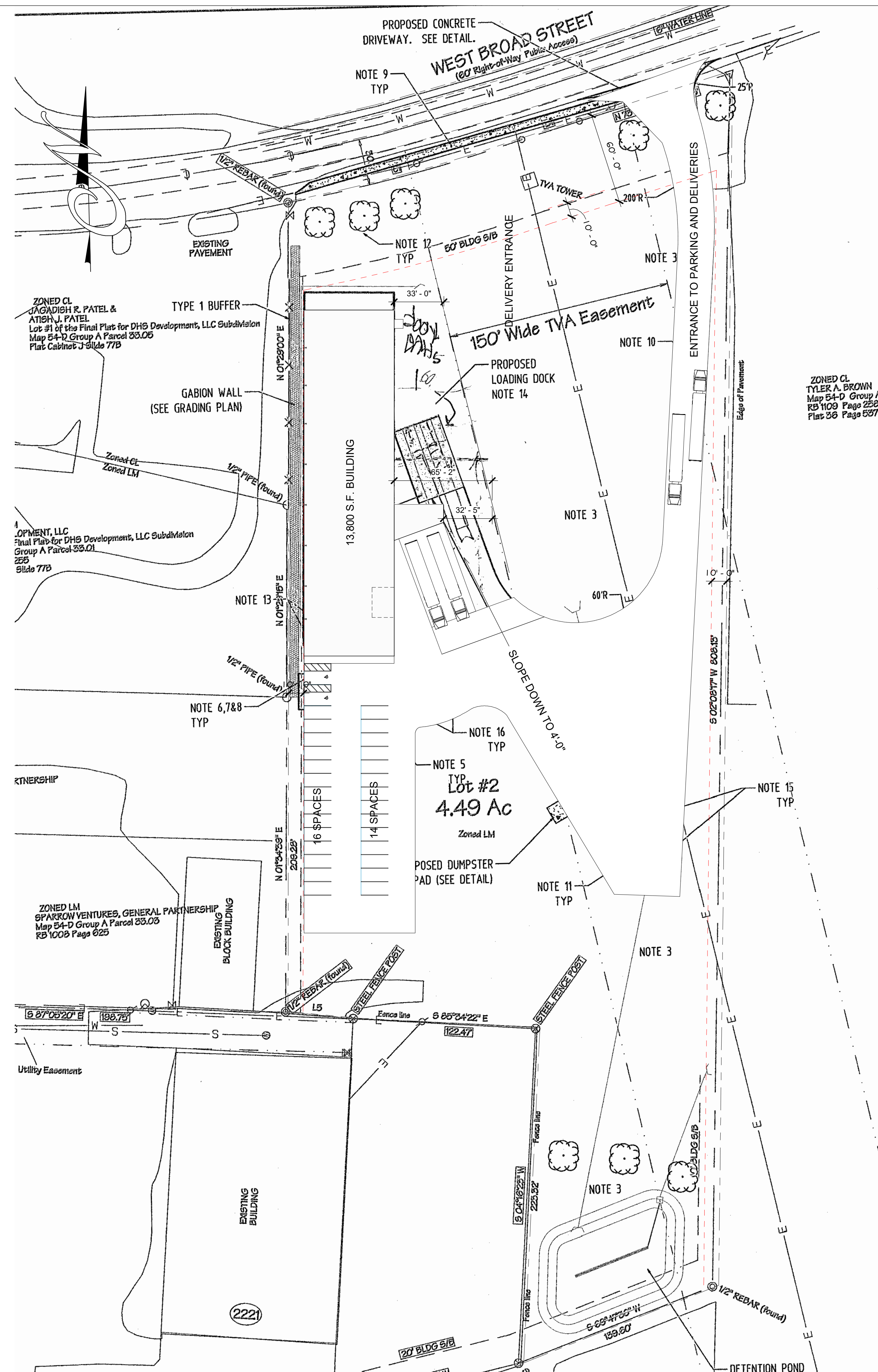
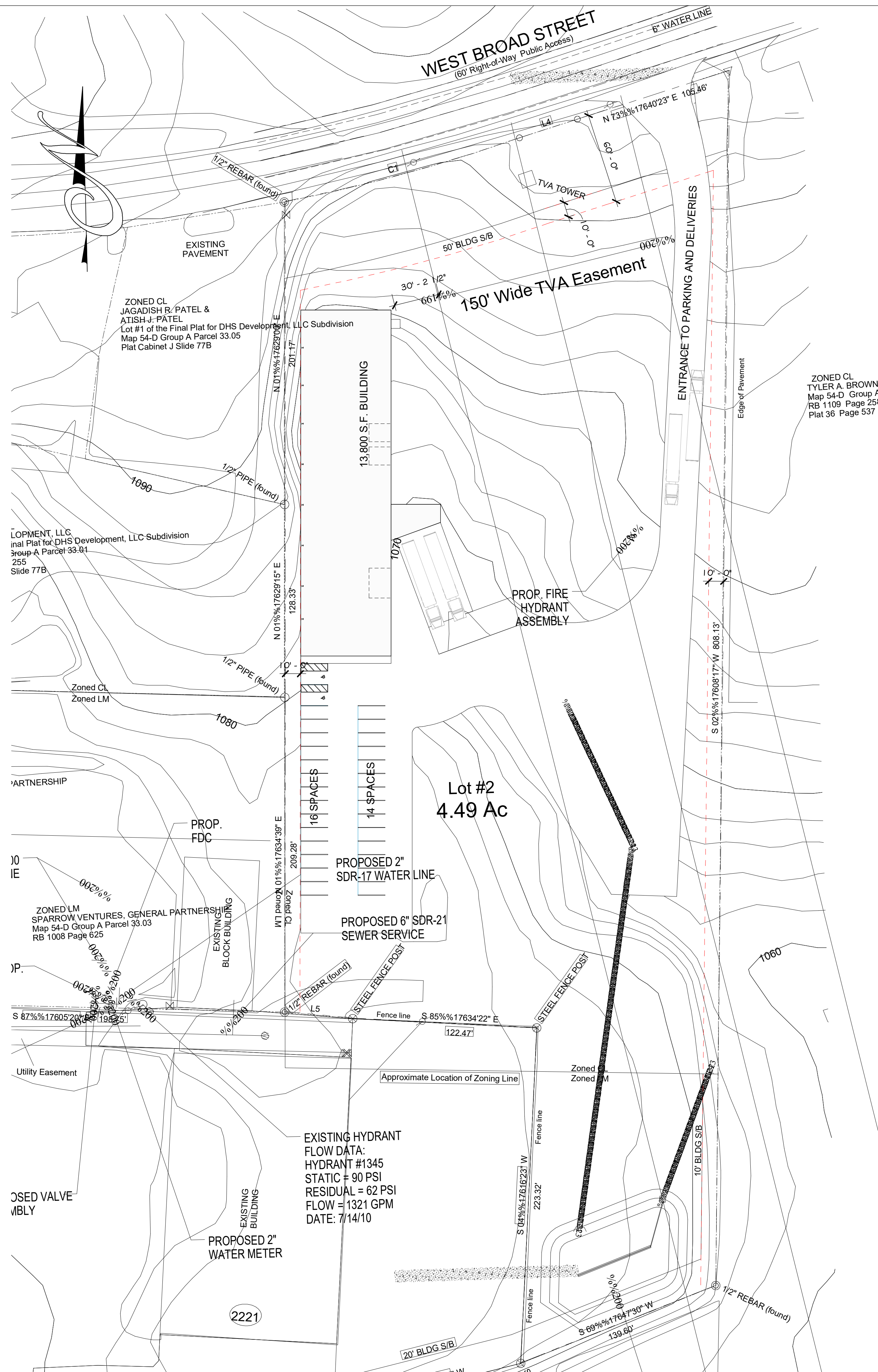
Total MSW	53 yd ³	Put
{ Recyclables & inerts	52 yd ³	
{ Pellets	134 yd ³	20.16 TON

Putnam County Xfer Station Cost
\$45/lin

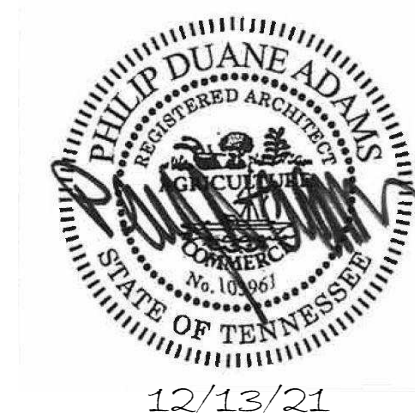
TOTAL COST Loading & Transport 12' m

\$ 360	\$ 480.00
353.00	\$ 470.00
907.00	1,209.6
<u>\$ 1,620.20</u>	<u>+ 2,159.60</u>
	= \$ 3,779.80

Tip Floor
12' x 20'
max 53 yd³



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[illegible]

A BUILDING FOR:
SPARROW GARBAGE PROJECT
COOKEVILLE, TENNESSEE

Project Status

Topo & Site Plan

Project number	21-420
Date	11/29/21
Drawn by	DCW
Checked by	Checker

Al.C

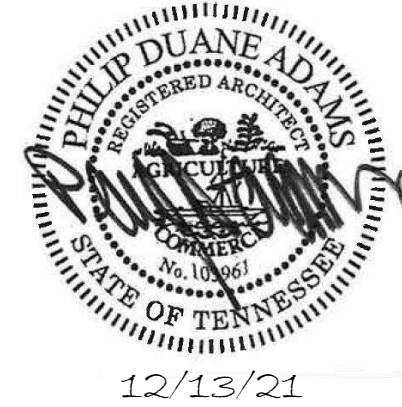
Scale 1" = 40'-0"



1843 Foreman Drive
Cookeville, Tennessee
931-528-7475
jsconstruction.com

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No.	Description	Date



12/13/21

A BUILDING FOR:
SPARROW GARBAGE PROJECT
COOKEVILLE, TENNESSEE

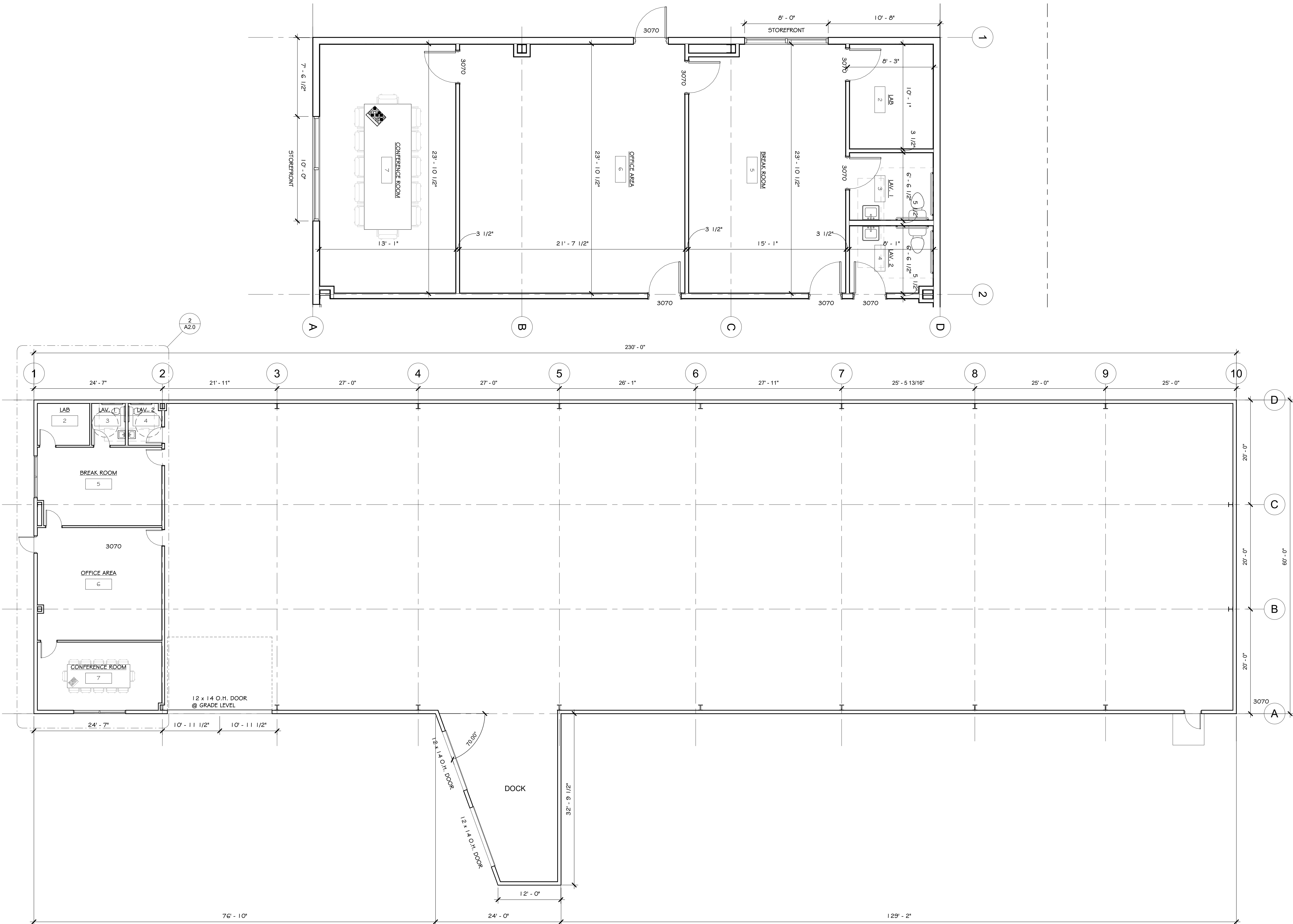
Project Status

Floor Plan

Project number	21-420
Date	11/23/21
Drawn by	DCW
Checked by	Checker

A2.0

Scale As indicated



Floor Plan

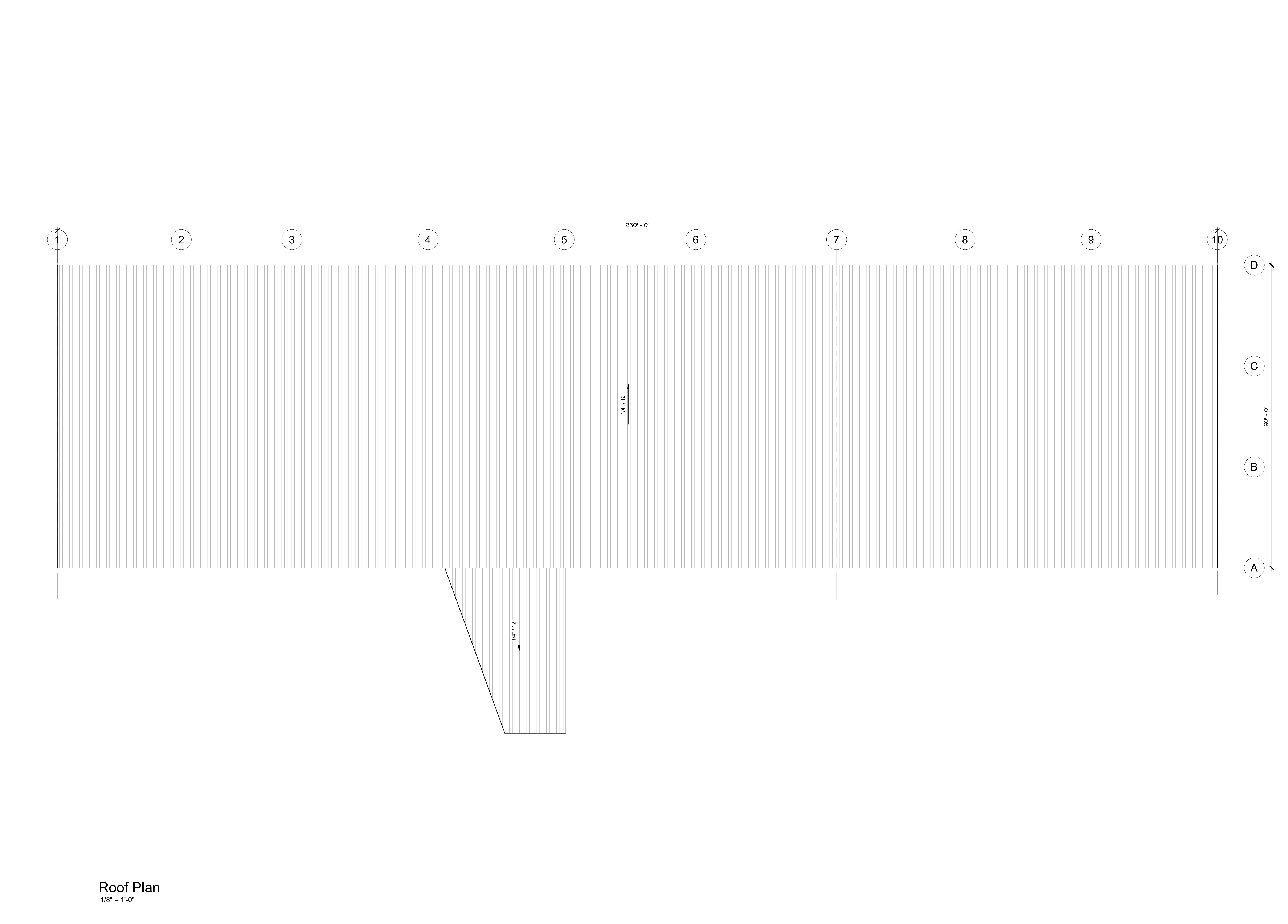
1/8" = 1'-0"

J:\Rick\DWG\Jack Sites\2021\Sparrow Garbage Project\Revit\Garb-Job_6.rvt

Approver

12/30/2021 11:51:14 AM

J:\Rick\DWG\Jack Sites\2021\Sparrow Garbage Project\Revit\Garb-Job_6.rvt



Approver

J&S

CONSTRUCTION

1843 Foreman Drive

Cookeville, Tennessee

931-528-7475

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No.	Description	Date

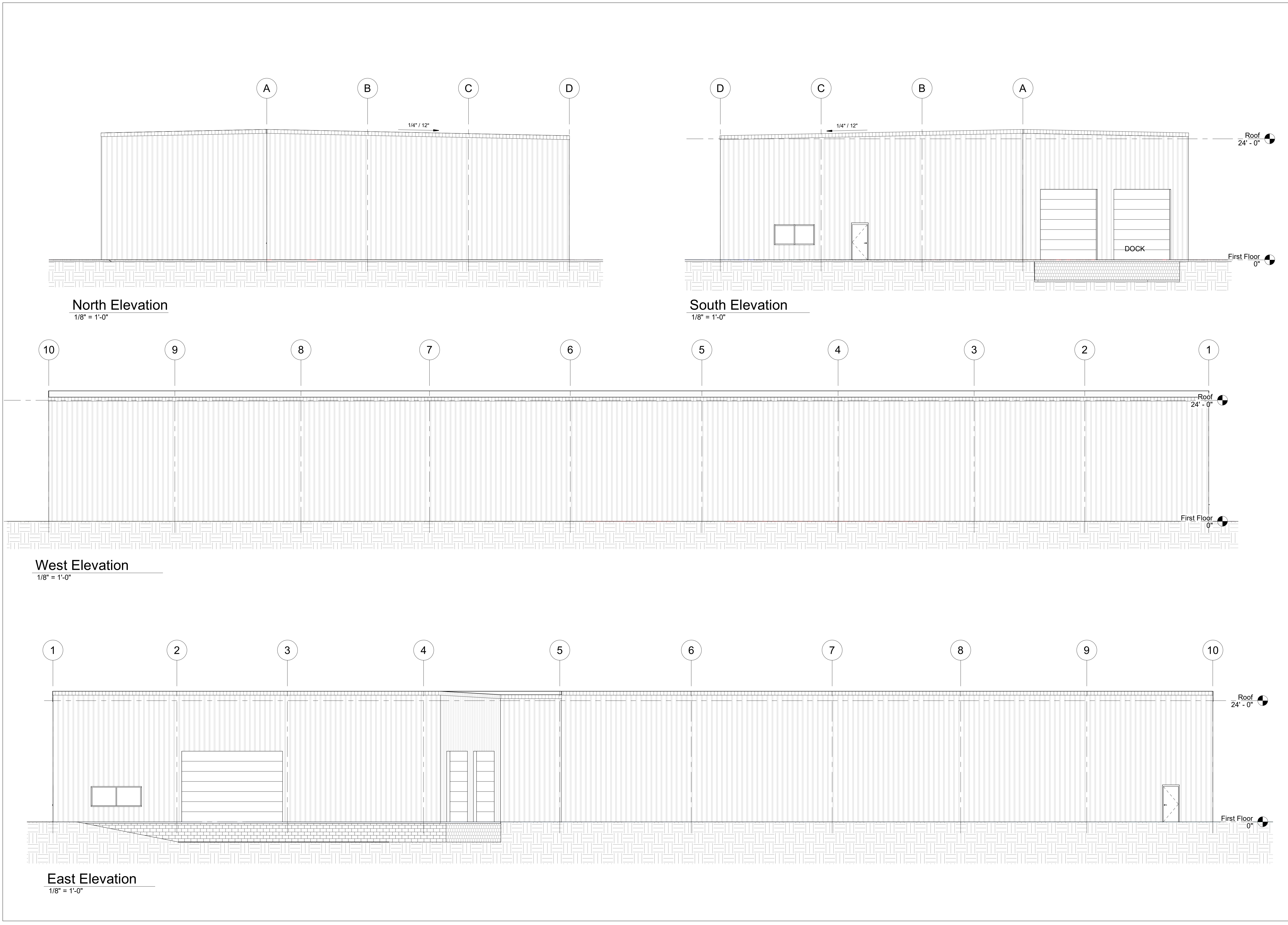


A BUILDING FOR:
SPARROW GARBAGE PROJECT
COOKEVILLE, TENNESSEE

Project Status	
Roof Plan	
Project number	21-420
Date	11/23/21
Drawn by	DCW
Checked by	Checker
A3.0	
Scale	1/8" = 1'-0"

12/3/2021 11:51:14 AM

J:\Rick\DWG\Jack Sites\2021\Sparrow Garbage Project\Revit\Garb-Job_6.rvt



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CONSTRUCTION

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Cookeville, Tennessee
931-528-7475
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No.	Description	Date

PHILIP DUANE ADAMS

REGISTERED ARCHITECT

NO. 0067

STATE OF TENNESSEE

12/13/21

A BUILDING FOR:
SPARROW GARBAGE PROJECT
COOKEVILLE, TENNESSEE

Project Status

Elevations

Project number	21-420
Date	11/23/21
Drawn by	DCW
Checked by	Checker

A4.0

Scale 1/8" = 1'-0"

Approver

12/30/2021 11:51:15 AM

National Flood Hazard Layer FIRMette



85°32'39"W 36°10'36"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000
Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



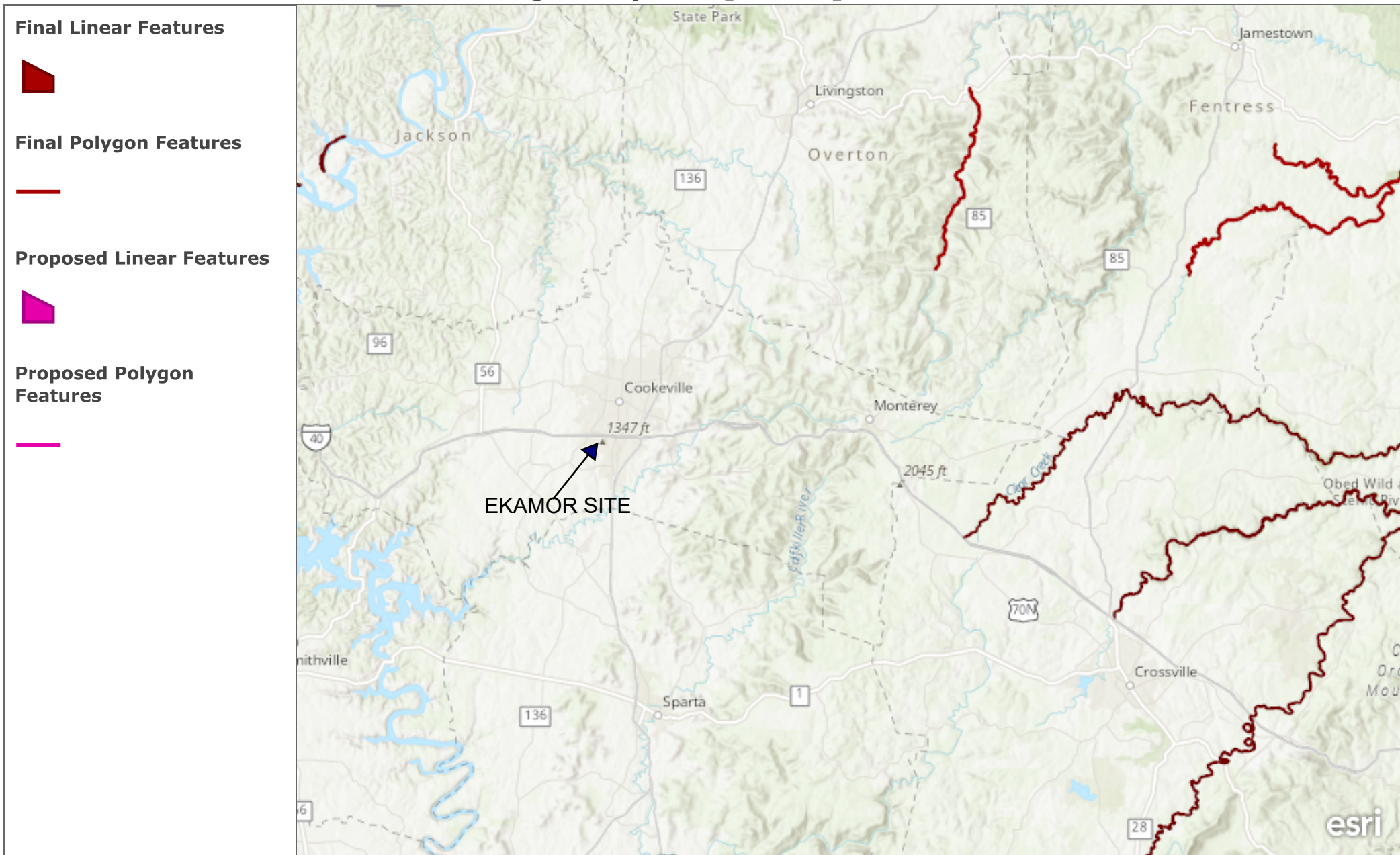
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/13/2021 at 10:10 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmoderated areas cannot be used for regulatory purposes.

Critical Habitat for Threatened & Endangered Species [USFWS]



A specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075



In Reply Refer To:
Consultation Code: 04ET1000-2022-SLI-0203
Event Code: 04ET1000-2022-E-00450
Project Name: Ekamor

December 13, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office

446 Neal Street

Cookeville, TN 38501-4027

(931) 528-6481

Project Summary

Consultation Code: 04ET1000-2022-SLI-0203

Event Code: Some(04ET1000-2022-E-00450)

Project Name: Ekamor

Project Type: LAND - CLEARING

Project Description: A facility which initially is primarily for R&D specific to collecting technical data primarily for making refuse derived fuel (RDF) pellets

Project Location:

Approximate location of the project can be viewed in Google Maps: [https://](https://www.google.com/maps/@36.17199585,-85.53877634879996,14z)

www.google.com/maps/@36.17199585,-85.53877634879996,14z



Counties: Putnam County, Tennessee

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Cumberland Bean (pearlymussel) <i>Villosa trabalis</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6061	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

NAME	BREEDING SEASON
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12

(0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

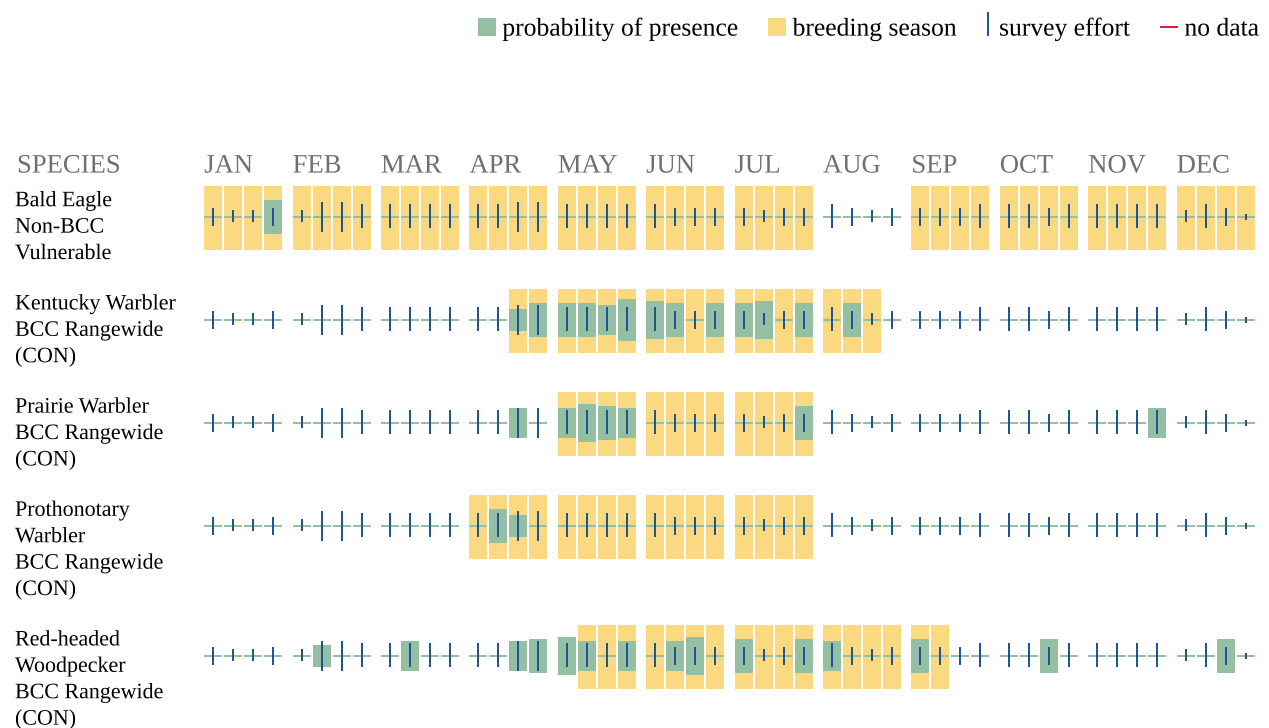
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

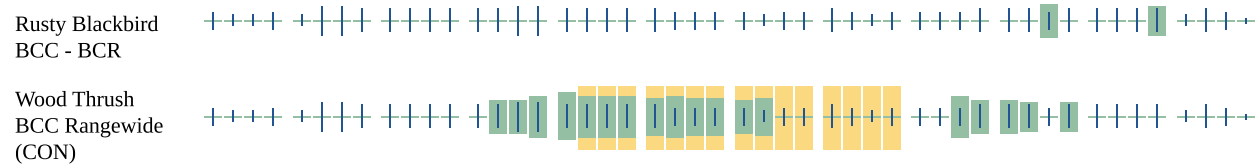
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

tapidero@comcast.net

From: Sykes, Robbie <robbie_sykes@fws.gov>
Sent: Monday, February 28, 2022 4:11 PM
To: tapidero@comcast.net
Subject: RE: [EXTERNAL] Endangered species

Hi Jo,

Our database doesn't indicate anything federally listed in that area. There is an old historic 1968 record of the state endangered Torrey's Mountain-mint (*Pycnanthemum torrei*) along HWY 70 to the east. I don't know anything about that plant and whether the state considers it extirpated from the area.

Thanks,

Robbie Sykes
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501
(tele. 931/525-4979)

From: tapidero@comcast.net <tapidero@comcast.net>
Sent: Monday, February 28, 2022 3:13 PM
To: Sykes, Robbie <robbie_sykes@fws.gov>
Subject: [EXTERNAL] Endangered species

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Robbie,
I was checking to see if you had site specific information for endangered species at
1368 W. Broad Street,
Cookeville, Tennessee, 38501
Hope you are doing well!

Thanks,
Jo
Jo House, P.E.,P.G.

APPENDIX B

LOCAL APPROVAL

MOTION TO APPROVE THE APPLICATION FOR A PROPOSED RESEARCH AND DEVELOPMENT FACILITY FOR SOLID WASTE PROCESSING IN THE CORPORATE LIMITS OF THE CITY OF COOKEVILLE AND PUTNAM COUNTY

On November 9, 1989, the County Commission for Putnam County adopted a resolution making applicable to Putnam County, Tennessee the provisions of Part 7 of Chapter 211 of Title 68 of the Tennessee Code Annotated to require local approval of landfills, solid waste disposal facilities and solid waste processing facilities prior to the construction of such facilities.

Further, Tenn. Code Ann. §68-211-701 provides that no construction shall be initiated for any new landfill for solid waste disposal or for solid waste processing until the plans for such new landfill have been submitted to and approved by the county legislative body in which the proposed landfill is located.

Ekamor Resource Corporation, located at 610 N. Pickard Ave., Cookeville, Tennessee 38501, submitted an application, with plans, for a research and development facility for solid waste processing to the Tennessee Department of Environment and Conservation, Division of Solid Waste Management. The application with plans, attached as an exhibit, were forwarded to Putnam County. The proposed facility consists of a research and development facility for solid waste processing to be located at 1368 W. Broad Street, Cookeville, Tennessee 38501. The facility will accept municipal solid waste in an amount that would equate to about two garbage truck loads per day.

Pursuant to Tenn. Code Ann. §68-211-703, public notice of the proposed facility was properly circulated by the Putnam County Mayor within the geographical area of the proposed facility landfill by publication in a local newspaper of general circulation, and such notice included all information set forth in Tenn. Code Ann. §68-211-703(b). Further, all provisions for a public hearing set forth within Tenn. Code Ann. §68-211-703, et seq. were complied with; whereupon the Putnam County Commission acted within thirty (30) days of such public hearing to approve the proposed new construction.

Pursuant to Tenn. Code Ann. §68-211-704, the Putnam County Commission duly considered the following criteria in evaluating the construction of any new landfill for solid waste disposal or for solid waste processing: (1) the type of waste to be disposed of; (2) the method of disposal to be used; (3) the projected impact on surrounding areas from noise and odor created; (4) the projected impact on

property values on surrounding areas; (5) the adequacy of existing roads and bridges to carry the increased traffic projected to result; (6) the economic impact on the county, city or both; (7) the compatibility with existing development or zoning plans; and (8) any other factor which may affect the public health, safety or welfare.

After due consideration of the factors stated above, the plans for a research and development facility for solid waste processing to be located at 1368 W. Broad Street, Cookeville, Tennessee 38501 as set forth in the exhibit hereto, are approved.

The Chairman asked for discussion on the motion. There was none.

The Chairman asked for a voice vote on the motion. The motion carried.

**MOTION RE: PLANNING COMMITTEE RECOMMENDS APPROVAL OF THE
LIST OF VEHICLES/EQUIPMENT TO BE SOLD VIA INTERNET/PUBLIC AUCTION
FOR THE ROAD'S DEPARTMENT AS FOLLOWS:**

**1998 FORD 800 VIN # 1FDYF80C0WVA24526
2003 CHEVROLET 2500 VIN # 1GCHK24U43Z257166
HOLLAND TRACTOR 312802M/T5329
HOLLAND TRACTOR 312621M/T5328
CAT BACKHOE 416B 94-1896/SN08ZK03926**

Commissioner Kathy Dunn moved and Commissioner Kim Bradford seconded the motion.

(SEE ATTACHED)



Putnam County Solid Waste Department

Director – Doug Ashburn

Assistant Director – Jackie Selby

1846 S. Jefferson Ave. Cookeville, TN. 38506 Phone: 931-528-3884 Fax: 931-520-3428

Email: pcsw@putnamcountyttn.gov

To Whom It May Concern:

The proposed processing permit-by-rule application has been prepared primarily for a research and development (R&D) facility. It is our understanding that specific technical data will be collected from the production of various combinations of refuse-derived fuel (RDF) pellets that will be used in coordination with a couple of gasifier manufacturers. The R&D performed at this facility will help develop an RDF pellet that is the most economically viable and fuel efficient for the targeted manufacturing facilities.

Ekamor operated a pilot plant in Chicago, Illinois for eighteen months to determine the most appropriate equipment that could be used providing a non-thermal municipal solid waste (MSW) drying system. The Ekamor process will utilize air to shear the moisture from the solid waste material. The moisture-laden air will be released to the atmosphere, after it has been directed through a PM10 filtration system via a baghouse. The fines collected from the baghouse are blended with the processed solid waste material to produce the RDF pellets.

This facility is equipped to process approximately six tons per day of MSW. The Ekamor process utilizes a magnet and eddy current system to remove the metals from the waste. The metal separated from the waste will be recycled on the open market. In addition, ERC uses an optical sorter to remove PVC materials from the municipal solid waste stream. ERC is projecting that the volume of waste generated by the R&D process will be less than 10% of the total waste stream that is processed.

We are excited for this facility to locate to our county and look forward to visiting their facility and viewing their process, in hopes that it can help Putnam County reach our future diversion goals in the near future.

Sincerely,

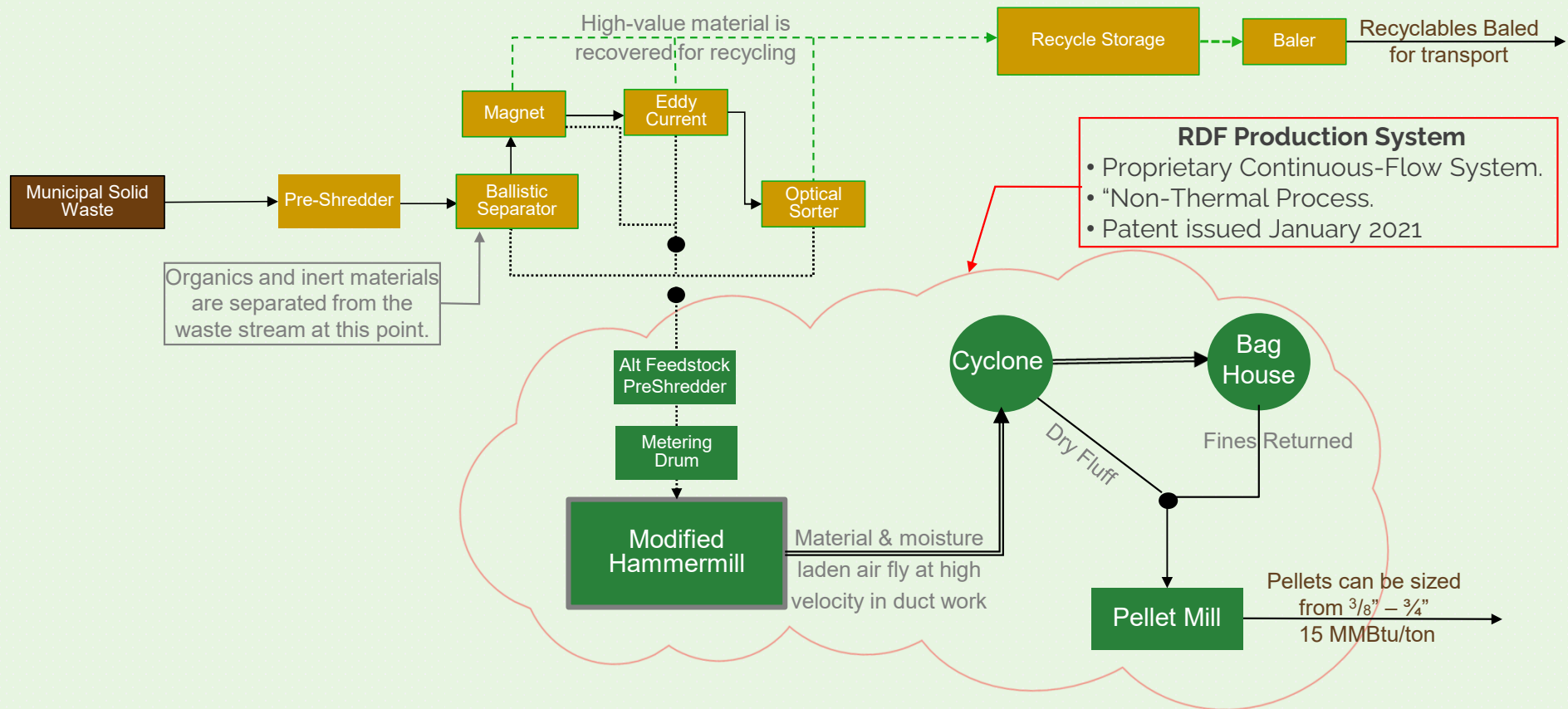
Doug Ashburn

Doug Ashburn

APPENDIX C

WASTE PROCESSING SPECIFICS

Process Flow Diagram

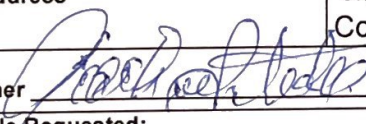


APPENDIX D

TDEC FORMS



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
312 Rosa L. Parks Avenue, 14th Floor
Nashville, TN 37243
SOLID WASTE PERMIT BY RULE NOTIFICATION

1. a. Full, Legal Name of Facility ERC - Research, Development & Demonstration Facility		Identification Number (Official Use Only)	
b. Facility Mailing Address 610 N Pickard Ave.	City Cookeville	State TN	Zip Code 38501
c. Physical Location or Address of Facility 1368 W. Broad St.	Cookeville	County Putnam	
d. Latitude (degrees, minutes, and seconds) 36°10'22" N	Longitude (degrees, minutes, and seconds) 85°30'20" W		
e. Name of Facility Manager or Site Operator Kelly D Warbis		Phone Number With Area Code (931) 324-2500	
f. Affiliation of Site Operator (If different from permittee)			
2. a. Name of Applicant (Corporation, etc.) as Permittee EKAMOR Resource Corporation		Phone Number With Area Code (931) 324-2500	
b. Name of Responsible Official Kelly D Warbis		Phone Number With Area Code (931) 324-2500	
c. Responsible Official's Mailing address 610 N Pickard Ave.	City Cookeville	State TN	Zip Code 38501
3. a. Landowner Name Sparrow Ventures GP		Phone Number With Area Code (931) 528-7475	
b. Landowner Mailing Address 1843 Foreman Dr.	City Cookeville	State TN	Zip Code 38501
c. Signature of Landowner 		Date <u>12/14/2021</u>	
4. a. Type of Permit-By-Rule Requested: <input type="checkbox"/> Coal Ash Facility <input type="checkbox"/> Land Application <input type="checkbox"/> Tire Storage Facility <input type="checkbox"/> Convenience Center <input checked="" type="checkbox"/> Processing Facility <input type="checkbox"/> Transfer Station			
b. Description of Activities and Wastes Handled or Processed: Waste will be processed to recover the high-value recyclables (currently #1 & #2 plastics) as well as the ferrous and non-ferrous metals. The remaining waste fraction, including the organics, will then be mechanically pulverized and dewatered producing a fluff material that will be used as an engineered alternative fuel feedstock.			
c. Amount of Waste Handled/Processed/Stored: Weight <u>8</u> tons/day Volume <u>32</u> cubic yards/day Maximum Storage Capacity <u>64</u> cubic yards			


5. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, and accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Date 12/14/2021

Signature of Responsible Official 

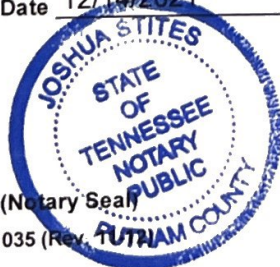
Typed Name of Responsible Official Kelly D. Warbis

Official Title Founder / Chief Executive Officer

Signature of Notary 

Date Commission Expires 4/1/2024

(Notary Seal)



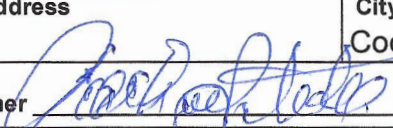


TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
312 Rosa L. Parks Avenue, 14th Floor
Nashville, TN 37243
SOLID WASTE APPLICATION FILING/PROCESSING FEE

1. Facility Information ERC - Research, Development & Demonstration Facility Full Legal Name of Facility EKAMOR Resource Corporation Mailing Address 1368 W. Broad St. City, State, Zip Code Cookeville, TN 38501	2. Permittee Information EKAMOR Resource Corporation Permittee (Name/Legal Entity) 610 N Pickard Ave. Mailing Address Cookeville, TN 38501 City, State, Zip Code (931 324-2500 Telephone Number of Permittee															
3. Physical Location/Directions to Facility From exit 283 on Interstate 40 go north 3 miles to highway 70N. Turn right proceeding east on 70N for approximately 1.35 miles. The facility will be on the right side (south) of the road.	4. Type Facility and Fee Due: <input type="checkbox"/> New Disposal Facility* <div style="margin-left: 20px;"><input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Hydrogeology\$ 4,000 <input type="checkbox"/> Construction Plan Review ... 6,000 <input type="checkbox"/> Class III 3,000 <input type="checkbox"/> Major Modification 2,000 <input checked="" type="checkbox"/> Processing Facility 1,000 <input type="checkbox"/> Transfer of Ownership 1,000 <input type="checkbox"/> Transfer Station 500 *Includes Lateral Expansions</div>															
5. Total Site Acres (If Disposal Operation): N/A	6. Amount of Fee Enclosed: \$ 1,000.00															
7. Total Acres In Landfill Footprint: N/A	8. Type and Size Facility If Processing Facility: Recover high-value recyclables, dry/pulverize remaining waste fraction and process it into an engineered alternative fuel feedstock.															
9. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, and accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury. Kelly D. Warbis _____ Print or Type Name _____ Signature Founder / Chief Executive Officer _____ Title December 13, 2021 _____ Date																
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td colspan="3" style="text-align: center;">FISCAL SERVICES USE ONLY BELOW THIS LINE</td><td colspan="2" style="text-align: center;">ASSIGNED FACILITY ID NUMBER:</td></tr><tr><td style="width: 20%;">CD Number</td><td style="width: 20%;">Date Received</td><td style="width: 20%;">Amount</td><td style="width: 20%;">Receipt #</td><td style="width: 40%;">Comments</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>		FISCAL SERVICES USE ONLY BELOW THIS LINE			ASSIGNED FACILITY ID NUMBER:		CD Number	Date Received	Amount	Receipt #	Comments					
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CD Number	Date Received	Amount	Receipt #	Comments												



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
312 Rosa L. Parks Avenue, 14th Floor
Nashville, TN 37243
SOLID WASTE PERMIT BY RULE NOTIFICATION

1. a. Full, Legal Name of Facility ERC - Research, Development & Demonstration Facility		Identification Number (Official Use Only)	
b. Facility Mailing Address 610 N Pickard Ave.	City Cookeville	State TN	Zip Code 38501
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d. Latitude (degrees, minutes, and seconds) 36°10'22" N	Longitude (degrees, minutes, and seconds) 85°30'20" W		
e. Name of Facility Manager or Site Operator Kelly D Warbis		Phone Number With Area Code (931) 324-2500	
f. Affiliation of Site Operator (If different from permittee)			
2. a. Name of Applicant (Corporation, etc.) as Permittee EKAMOR Resource Corporation		Phone Number With Area Code (931) 324-2500	
b. Name of Responsible Official Kelly D Warbis		Phone Number With Area Code (931) 324-2500	
c. Responsible Official's Mailing address 610 N Pickard Ave.	City Cookeville	State TN	Zip Code 38501
3. a. Landowner Name Sparrow Ventures GP		Phone Number With Area Code (931) 528-7475	
b. Landowner Mailing Address 1843 Foreman Dr.	City Cookeville	State TN	Zip Code 38501
c. Signature of Landowner 		Date <u>12/14/21</u>	
4. a. Type of Permit-By-Rule Requested: <input type="checkbox"/> Coal Ash Facility <input type="checkbox"/> Land Application <input type="checkbox"/> Tire Storage Facility <input type="checkbox"/> Convenience Center <input checked="" type="checkbox"/> Processing Facility <input type="checkbox"/> Transfer Station			
b. Description of Activities and Wastes Handled or Processed: Waste will be processed to recover the high-value recyclables (currently #1 & #2 plastics) as well as the ferrous and non-ferrous metals. The remaining waste fraction, including the organics, will then be mechanically pulverized and dewatered producing a fluff material that will be used as an engineered alternative fuel feedstock.			
c. Amount of Waste Handled/Processed/Stored: Weight <u>8</u> tons/day Volume <u>32</u> cubic yards/day Maximum Storage Capacity <u>64</u> cubic yards			

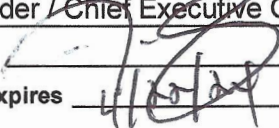
5. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, and accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Date 12/14/2021

Signature of Responsible Official 

Typed Name of Responsible Official Kelly D. Warbis

Official Title Founder / Chief Executive Officer

Signature of Notary 

Date Commission Expires 4/1/2024

(Notary Seal)



INSTRUCTIONS FOR SOLID WASTE PERMIT BY RULE NOTIFICATION

Complete this form for each facility that is processing and/or disposing of solid waste in Tennessee. If multiple facilities exist or are planned, describe each facility and its wastes on a separate form. **Submit completed documents to the respective field office in your area.**

- Line 1a. **Full, Legal Name of Facility** - The full, legal name for this site to distinguish it from any other site the applicant or organization may own or operate in Tennessee. **Identification Number** - leave blank for Division usage.
- b. **Facility Mailing Address** - Give a complete mailing address for physical facility location.
- c. **Physical Location or Address of Facility** - Information that will aid the Division in going to the site/facility. Do not give a Post Office Box Number.
- d. Supply the **latitude** and **longitude** of the site with the precision of degrees, minutes and seconds. Latitude and longitude may be found by using a U. S. Geological Survey quadrangle map.
- e. **Name of Facility Manager or Site Operator** - The name and phone number of the manager or person who is responsible for the direction of activities at the site/facility.
- f. **Affiliation of Site Operator (If different from permittee)** - If site is operated by person or entity other than permittee, furnish name of person or corporation, etc.
- Line 2a. **Name of Applicant (Corporation, etc) as Permittee** - Name of legal entity making application (individual, corporation, government agency, etc.) This will be the permittee of record.
- b. **Name of Responsible Official** - The name and phone number of the person whom the Division may contact for further information about the contents of this form and who is authorized by the permittee to complete this notification form.
- c. **Responsible Official Mailing address** - Address of Responsible Official representing the permittee having authority to make application.
- Line 3a. **Landowner name** - The person(s) or organization name(s) and phone number(s) of the immediate owner(s) of the property [attached letter from landowner(s)].
- b. **Landowner Mailing address** - A complete mailing address for landowner.
- c. **Signature of Landowner** - The landowner(s) must sign and date the notification form.
- Line 4a. **Type of Permit-By-Rule Requested** - Check the appropriate type(s).
- b. **Description of Activities and Wastes Handled or Processed** - Provide a brief narrative statement that describes the activities and wastes handled or processed at the facility.
- c. **Amount of Waste Handled/Processed/Stored** - Provide an estimate of the daily weight in tons/day and/or volume in cubic yards/day that will be handled at the facility. Indicate the maximum amount of waste that can be stored in cubic yards.
- Line 5 **Certification** - After all documents have been compiled for submission to the Division, the manager or owner responsible for the site must sign, date and give title. This signature must be notarized.

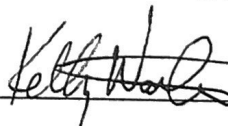
Permit No SWP _____
(For SWM office use only.)

**PERMIT-BY-RULE PROCESSING FACILITY
FINANCIAL ASSURANCE WORKSHEET**

FACILITY NAME: ERC – Research, Development and Demonstration Facility

1. The maximum storage capacity for solid waste in cubic yards:
Attach a sketch and/or calculation to support this number.
- MSW - 53 yd³
Inert/Recycle - 52.3 yd³
Pellets - 134 yd³
Total 239.7 yd³
2. The cost of transporting to a disposal site (The cost per yd³ times the amount shown above.):
- \$ 2,159.60
3. The cost (tipping fee, surcharges, etc.) to dispose of this volume of waste:
- \$ 1,620.20
4. Contingency fee of 5%
- \$ 188.99
5. Items 2+3+4= Total cost.
- \$ 3,776.80
- Total Amount Due
- \$ 3,776.80

Signed



To the best of my knowledge, the above
information is correct and complete.

Return to: TN Department of Environment and Conservation
Division of Solid Waste Management
ATTN: Permits Administration
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor
Nashville, TN 37243