BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION AT NASHVILLE, TENNESSEE

IN RE: ISHA FOUNDATION, INC. PETITION OF DETERMINATION	)	
	)	**22-00099**
	)	**DOCKET NO.**
TO DETERMINE THAT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY IS NOT REQUIRED FOR ISHA's PROGRAM ACCOMMODATION BLOCK	)	

PETITION OF DETERMINATION

Pursuant to Tenn. Code Ann. 65-2-103, et seq. and Tenn. Code Ann. 65-4-201, et seq (collectively, the "Code"), Isha Foundation, Inc., a Tennessee Nonprofit Corporation, ("Petitioner"), by and through counsel, submits this Petition of Determination ("Petition") requesting the Tennessee Public Utility Commission ("Commission" or "TPUC") to determine that a Certificate of Public Convenience and Necessity ("CCN") is not required or necessary for Petitioner's proposed Program Accommodations Block project to be located on a portion of real property known as Isha Campus, and being more particularly described in Section II(6) hereof ("Project"). In support of Petitioner's position that a CCN is not required, Petitioner states as follows:

I.

DESCRIPTION OF PETITIONER, ISHA FOUNDATION, INC

1. Petitioner is a Tennessee Nonprofit corporation formed on November 23, 1998.

2. The President of Isha Foundation, Inc. is Kalpana Rajdev.

3. Petitioner's principal place of business is located at 951 Isha Lane, McMinnville, TN 37110.

4. Petitioner's services include, but are not limited to, managing, supervising, and obtaining entitlements, consents, licenses, permits, and approvals necessary for the operation of the Project.

5. All correspondence and communication with respect to this Petition should be sent to the following:

Isha Foundation, Inc.
Attn: Kalpana Rajdev
951 Isha Lane
McMinnville, TN 37110
Email: kalpana@ishausa.org

Austin, Davis & Mitchell
Attn: Thomas K. Austin
PO BOX 666
Dunlap, TN 37327
Email: taustin@austindavismitchell.com
(423) 949-4159 (office)
(423) 949-4589 (fax)

II.

DESCRIPTION OF PROJECT AND SYSTEM

6. Petitioner has a permit from Warren County to construct the Project, which is described as the Program Accommodations Block at 951 Isha Lane, McMinnville, TN 37110 which will consist of 900 studios to be used as program accommodations by Petitioner.

7. The purpose of the Project is to provide additional program accommodation space for members of the public attending the programs conducted onsite by Petitioner at the Isha Campus.

8. Petitioner has engaged Site Engineering Consultants, Inc. as the consulting engineers for the proposed Project and waste water system ("System").

9. The proposed System servicing the Project will consist of an onsite non-traditional wastewater treatment and drip disposal system, septic tanks, pump tanks, recirculating packed bed treatment filters, ultraviolet disinfection back-up storage pond, subsurface drip irrigation disposal field, and reserve subsurface drip irrigation disposal field.

10. The estimated peak daily wastewater flow is 115,250 gallons per day.

11. The System will not serve any permanent residences and will be constructed to serve only the Project.

12. The System will be privately owned by Petitioner and Petitioner will contract with a licensed and certified operator to perform the day-to-day operations, maintenance, and periodic testing of the system in accordance with the Permit, as hereafter defined.

13. The System will not serve as a public utility (as defined in the Code) providing wastewater service.

14. Petitioner will not charge or collect any fees, rates, or dues for use of the System, and if Petitioner, in the future, considers providing public utility services, Petitioner shall promptly file a petition for a CCN pursuant to the Code and Commission's rules and regulations.

15. Petitioner has the financial capability to construct and install the System.

16. Petitioner has made application with the Tennessee Department of Environment and Conservation to obtain the State Operating Permit ("Permit") for the System, which is attached hereto as Exhibit C, and incorporated herein by reference.

17. In further support of its Petition, the following exhibits are attached hereto:

a. Exhibit A: Pre-Filed Testimony of Kalpana Rajdev

b. Exhibit B: Site Plan for the Project

c. Exhibit C: Application for Draft State Operating Permit

d. Exhibit D: Letter from Jamie Reed P.E, R.L.S. dated October 12, 2022.

THEREFORE, Petitioner respectfully requests:

1. That the Commission determine that a CCN is not required for the construction, installation, or operation of the System for the Project;

2. That the Commission provide written confirmation to Petitioner that a CCN is not required so that Petitioner may submit the same to the Tennessee Department of Environment and Conservation and any other regulatory agencies or municipalities involved with approving the Project and the System; and

3. That the Commission grants such other and/or further relief as may be warranted.

This the 13TH day of October, 2022.

Respectfully Submitted,
Austin, Davis & Mitchell

Thomas K. Austin BPR#31009
Counsel for Petitioner
PO BOX 666
Dunlap, TN 37327

VERIFICATION OF PETITIONER

I, Kalpana Rajdev, President of Isha Foundation, Inc., a Tennessee Nonprofit corporation, the Petitioner, verify that based on information and belief, I have knowledge of the statements in the foregoing Petition, and I declare that they are true and correct.

Sworn to and subscribed before me, the undersigned Notary Public, on this 12th day of October, 2022.

Notary Public

My commission expires:

August 27, 2025

MANUELA MCCUSKER
STATE OF TENNESSEE NOTARY PUBLIC
WARREN COUNTY
My Commission Expires August 27, 2025

CERTIFICATE OF SERVICE

The undersigned herby certifies that a true and exact copy of the forgoing has been served upon the person(s) listed below this 5 day of OCTOBER, 2022

Chairman Herbert H. Hilliard
Tennessee Public Utility Commission
502 Deaderick, 4th Floor
Nashville, Tennessee
37243

Thomas K. Austin

EXHIBIT A

Pre-Filed Testimony of Kalpana Rajdev

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION AT NASHVILLE, TENNESSEE

IN RE: ISHA FOUNDATION, INC. PETITION OF DETERMINATION	)	
	)	**DOCKET NO.**
TO DETERMINE THAT A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY IS NOT REQUIRED FOR ISHA's PROGRAM ACCOMMODATION BLOCK	)	

PRE-FILED TESTIMONY OF KALPANA RAJDEV

Q1. What is your name and business address?

A. My name is Kalpana Rajdev. My business address is 951 Isha LN, McMinnville, TN 37110.

Q2. What is your relationship to Isha Foundation, Inc.

A. I am the President of Isha Foundation, Inc. ("Isha").

Q3. Have you previously filed testimony before this Commission or any other commission?

A. No.

Q4. Please state your educational and professional background..

A. I am a medical doctor, specializing in Family Medicine and Geriatrics. I worked in long term care setting as Medical Director of two skilled care nursing homes for 15 years.

Q5. How long has Isha Foundation, Inc. been in existence?

A. Isha has been in existence since November 23, 1998.

Q6. What is the purpose of Isha Foundation, Inc.?

A. Isha is an internationally recognized non-profit 501(c)(3) charitable organization whose primary mission is to improve the physical, mental and spiritual well-being of all individuals

regardless of religion, race, creed, age or gender. Established over thirty-five years ago by Sadhguru Jaggi Vesudev, today Isha is run by 11 million volunteers in more than 300 city centers across the world. At the core of the Isha's activities is a customized system of physical exercises and meditations called Isha Yoga which distills powerful yogic methods for young and old alike, creating peak physical, mental and spiritual well-being. Isha also implements several large-scale human service projects to support individual growth, revitalize the human spirit, rebuild communities, and restore the environment. Isha's numerous charitable activities and community outreach have gained international accolades and have been recognized by the United Nations and governments throughout the world.

Isha is also responsible for obtaining the necessary entitlements, consents, permits, licenses, and approvals related to the proposed Rural Retreat Project and also for coordinating the installation and construction of the Project's infrastructure, wastewater system, and other improvements related to the Project.

Q7. Please describe the proposed project to be located at 951 Isha Lane.

A. The proposed project is a part of a rural retreat campus maintained by Isha at 951 Isha Lane, TN 37110 ("Isha Campus"). The Isha Campus has meditation halls for conducting residential yoga programs, hiking trails, a wellness center, and dining facilities serving healthy vegetarian meals for daily visitors. Isha receives more than 12,000 visitors every year at the Isha Campus. In addition, Isha conducts residential programs for approximately 5000 program participants each year. The proposed project of studio buildings ("Project") is critically needed to increase accommodations for the growing number of Isha residential programs offered to the public. The proposed wastewater system servicing the Project will consist of an on-site non-traditional wastewater treatment and drip disposal system, septic tanks, pump tanks, recirculating sand filter, ultraviolet disinfection, subsurface drip irrigation disposal field, and reserve subsurface drip irrigation disposal field ("System"). The estimated peak daily wastewater flow is 115,250 gallons per day.

Q8. What is the purpose of the Petition Isha Foundation, Inc. has filed?

A. That the Commission determine that a CCN is not required for the construction, installation, or operation of the System for the Project, which would allow Isha to proceed with obtaining the necessary approvals, licenses, permits, and consents from the Tennessee Department of Environment and Conservation, Warren County Planning Commission, and any other regulatory bodies and municipalities having jurisdiction over the Project and System.

Q9. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to provide information on Isha and explain the intent and scope of the Project and System.

Q10. What is the status of the Project?

A. The Project will have a total of six (6) buildings of which construction has already begun on two (2) of the buildings (84 units each). One of the buildings is expected to be finished by early next year and the other by the middle of the next year.

Q11. Will the System be provided as a public utility?

A. No. The System will not serve as a public utility providing wastewater service. The System will be privately owned, will not serve any permanent residences, and will be constructed to serve only the Project.

Q12. Will the Petitioner charge, collect fees, rates, or dues for the use of the System?

A. No. Petitioner will not charge or collect any fees, rates, or dues for use of the System. If Petitioner, in the future, considers providing public utility services, Petitioner will promptly file a petition for a CCN pursuant to the Code and Commission's rules and regulations.

Q13. Who will own, operate, and maintain the System?

A. The System will be privately owned by Petitioner. Petitioner will contract with a licensed and certified waste treatment operator to perform the day-to-day operations, maintenance, and periodic testing of the System in accordance with the Permits and the Water Environmental Health Act of 1984.

Q14. Are you sponsoring any exhibits other than this Pre-Filed Testimony?

A. Yes. I am sponsoring the following exhibits:

Exhibit B: Site Plan for Isha Foundation, Inc.
Exhibit C: Application for Draft State Operating Permit
Exhibit D: Letter from Jamie Reed P.E, R.L.S. dated October 12, 2022

Q15. Were the exhibits listed above prepared by you or under your direction and supervision?

A. Yes.

Q16. What do you recommend with regard to the Petition?

A. I recommend that the Petition be approved to not require a CCN.

Q17. Does this complete your testimony?

A. Yes, and I am ready to provide any additional information the Commission may need in making its decision.

AFFIDAVIT

My name is Kalpana Rajdev and the attached direct testimony is true and correct to the best of my knowledge.

Kalpana Rajdev

State of Tennessee
County of Warren

On the 12Th day of October, 2022, personally appeared before me Manuela McCusker, a notary public, the above named Kalpana Rajdev known to me personally who was duly sworn and on oath executed the above Affidavit.

Manuela McCusker
Notary

My commission expires: Aug 27, 2025

MANUELA MCCUSKER
STATE OF TENNESSEE NOTARY PUBLIC
WARREN COUNTY
My Commission Expires August 27, 2025

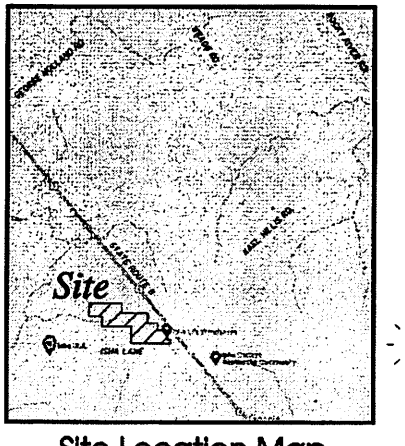
EXHIBIT B
SITE PLAN

Isha Studios

Wastewater Treatment, STEP System
Collection and Drip Dispersal Plans
Van Buren County, Tennessee
S.O.P. No. _____
Construction Drawings

Drawing Index

Sheet No.	Title
C0.0	Cover Sheet
C0.1	Master Plan
C1.0-1.7	STEP Collection Plans
C2.0-2.7	Wastewater Treatment Plans
C3.0	Notes & Details
C3.1-3.9	STEP Details



Site Location Map
Not To Scale

Owner/Developer:
September Bloom INC.
115 Sara Lane
McMinnville, TN 37110

Floodplain Note:
No Portion Of This Site Lies Within The 100 Year Flood Plain Per F.E.M.A. Community Panel No. 47175C0175C, Dated April 19th, 2010.

Total Site Land Data:
Total site area: ±31.01 Acres
Proposed Residential Multi-Family Development
Phase 1: Admin Bldg., Welcome Center , & Bldgs. A, B, & C
Phase 2: Bldgs D, E, & F.

Yard Requirements:
Front: 30'
Secondary Front: 22'
Side: 15'
Rear: 20'

Deed Reference:
The property shown hereon is Tax Map 110, Parcel 24.00 in Van Buren County, as recorded in R.B. 350, Pg 780

STEP Design:
Minimum Design Flow = 1120 Bedrooms x 100 gpd/Room = 150 Employees / Guest x 15 gpd/person = 119,250 gpd
Design Loading Soil Rate = 0.2 gal/sf
Required Land Application Area = 13.23 Acres
Proposed Land Application Area = 13.23 Acres
Required Land Reserve Area = 6.61 Acres
Proposed Land Reserve Area = 6.61 Acres
Total Soil Required = 19.84 Acres
Total Soil Provided = 22.95 Acres

Contacts:

Survey/Engineer/Planning:
Site Engineering Consultants, Inc.
850 Middle Tennessee Blvd
Murfreesboro, TN 37129
Phone: (615) 890-7901
Contact: James F. Reed

Caney Fork Electric Co-Op Inc:
820 Smithville Highway
McMinnville, TN 37110
(931)-473-3116

Warren County Utility District:
Anthony Pelham
4034 Sparta Highway
McMinnville, TN 37110
Phone: (931))-668-4175

APPROVED FOR CONSTRUCTION

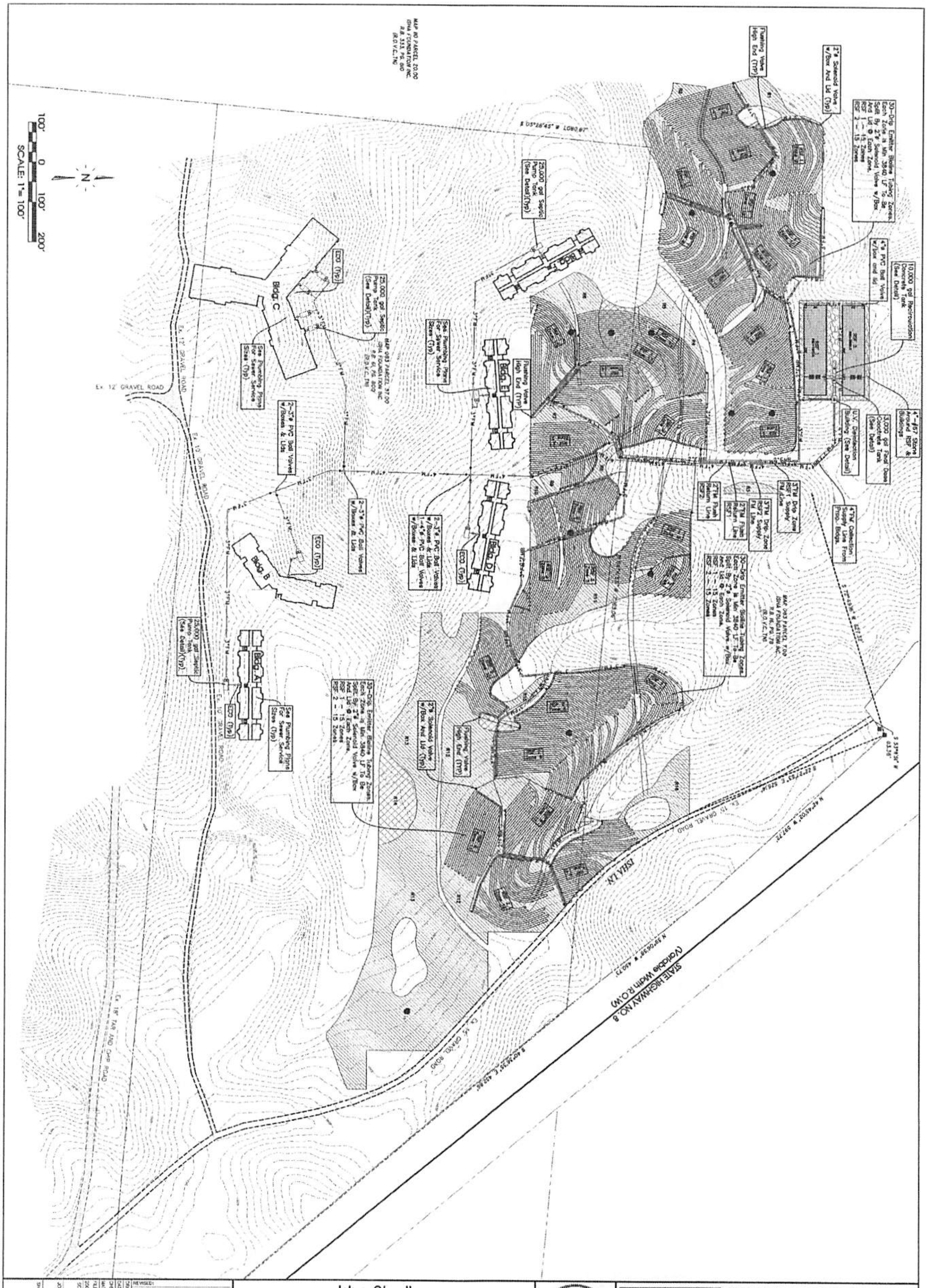
SEC, Inc. SITE ENGINEERING CONSULTANTS
ENGINEERING • SURVEYING • LAND PLANNING
LANDSCAPE ARCHITECTURE
850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

By: _____ Date: May 26, 2022
James F. Reed III, P.E. TN. Reg. #109038

JAMES F. REED III — STATE OF TENNESSEE

Drainage Basin: Spring Creek (Not Assessed)

Sheet C0.0
Isha Studios
S.E.C. Project #20060
Date: 2-10-2022
Revised:



SEC, Inc. SITE ENGINEERING CONSULTANTS
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PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

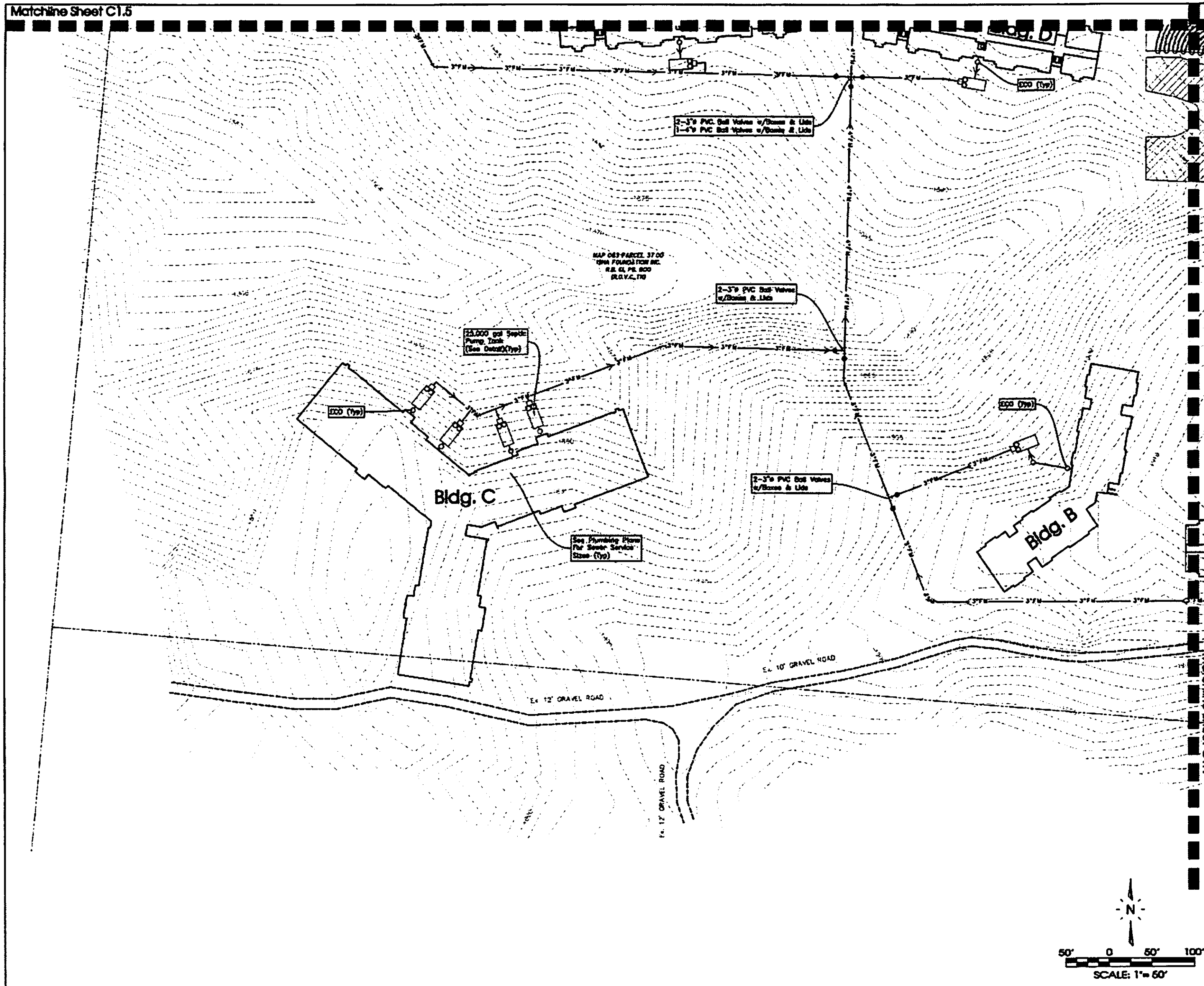
The site as shown on these construction drawings is intended to achieve specific engineering design criteria and objectives. It is the sole responsibility of the owner/developer to ensure that the construction of the site shown on these construction drawings is in total accordance with the design as noted, described, and illustrated. The engineer assumes no administrative liability or responsibility in the assurance that the site is constructed in accordance with the construction plans.

JAMES F. REED III — STATE OF TENNESSEE

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

REVISED:
DRAWN: DFL
DATE: 2-15-2022
CHECKED:
JWT
FILE NAME: 20060STEP
SCALE: 1"=200'
JOB NO. 20060
SHEET: C0.2

Master Plan



Legend:

Owner/Developer:

Floodplain Note:

Total Site Land Data:

Yard Requirements:

Deed Reference:

STEP Design:

SITE ENGINEERING CONSULTANTS

SEC, Inc.

850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

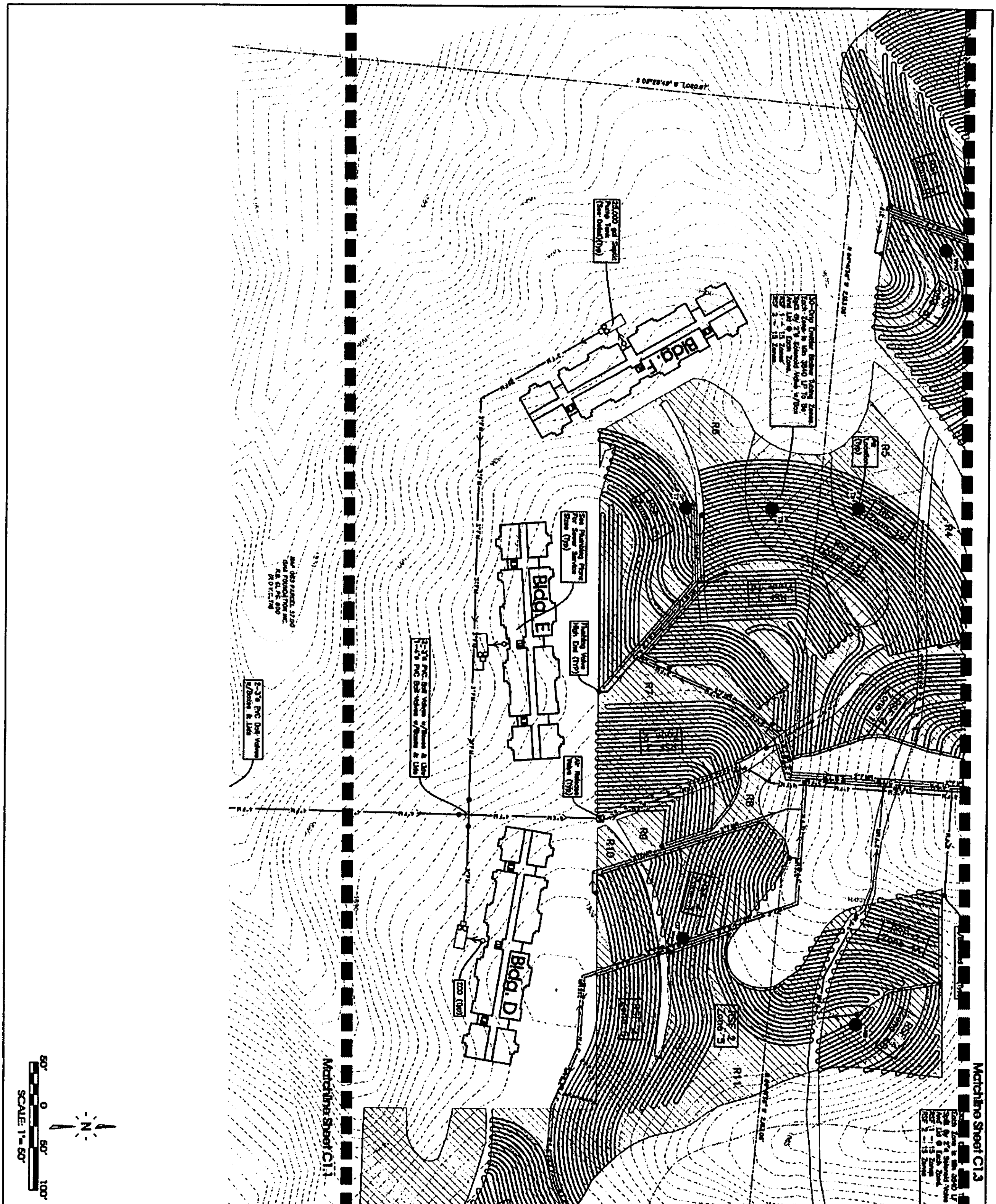
STEP Collection Plan

DATE 2-10-2022

SCALE: 1" = 50'

JOB NO. 20050

SHEET: C1.0



SITE ENGINEERING CONSULTANTS
SEC, Inc.
ENGINEERING • SURVEYING • LAND PLANNING
LANDSCAPE ARCHITECTURE
850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 893-2567

JAMES F. REED III — STATE OF TENNESSEE

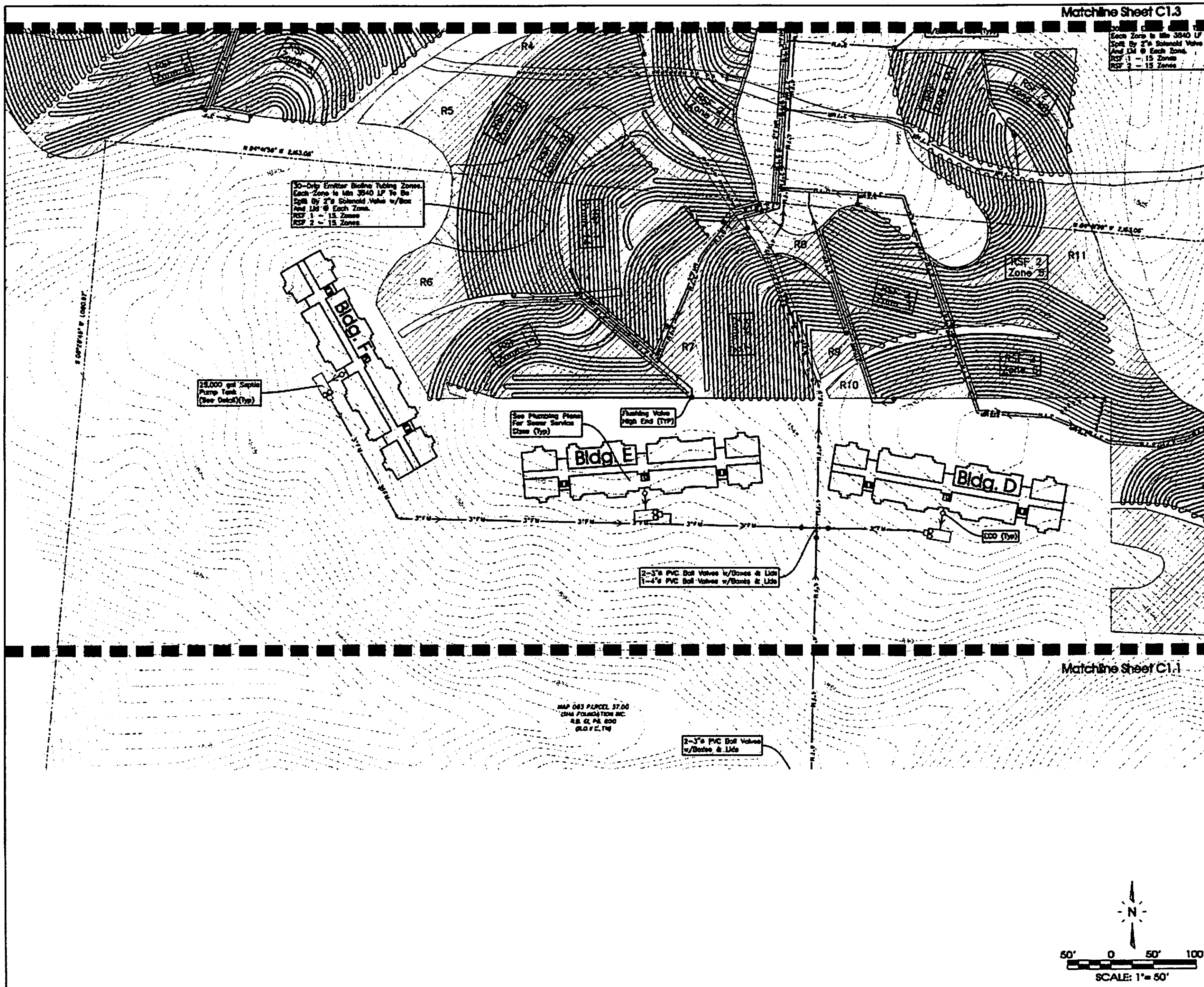
Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

STEP Collection Plan

SCALE: 1" = 50'

JOB NO. 20060

SHEET: C1.2



Owner/Developer:

Floodplain Note:

Total Site Land Data:

Yard Requirements:

Deed Reference:

STEP Design:

SITE ENGINEERING CONSULTANTS

ENGINEERING • SURVEYING • LAND PLANNING

LANDSCAPE ARCHITECTURE

SEC, Inc.

850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129

PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

JAMES F. REED II

STATE OF TENNESSEE

Isha Studios

Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans

Van Buren County, Tennessee

STEP Collection Plan

REVISED:

DRAWN: CAL

DATE: 2-16-2022

CHECKED:

MAT

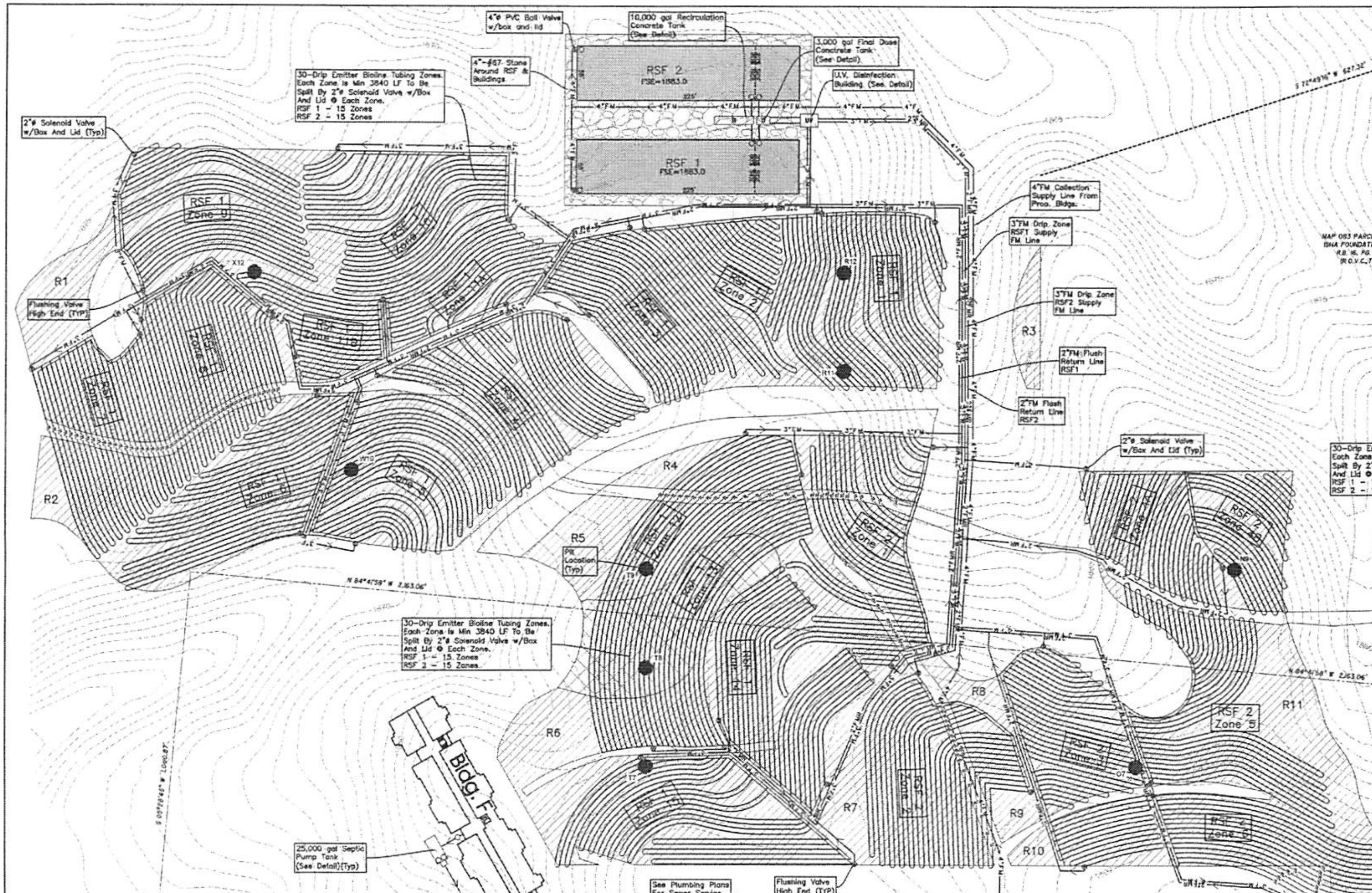
FILE NAME:

20069STEP

SCALE: 1"=50'

JOB NO. 20069

SHEET C1.2



RSF 1 (Zones 1-15)						
Zones	L.F. Drip	Distal Ends	Min. Drip L.F.	Max. Drip L.F.	Tight Line L.F.	Sq. Ft.
Zone 1	3756	11	211	395	0	18780
Zone 2	3382	10	221	395	0	16910
Zone 3	3701	9	229	400	0	18505
Zone 4	3877	13	127	373	68	19385
Zone 5	4010	11	254	400	0	20050
Zone 6	3849	11	250	400	0	19245
Zone 7	3889	12	278	358	370	19445
Zone 8	3576	12	200	359	331	17880
Zone 9	3579	10	132	396	41	17895
Zone 10	3900	12	163	399	0	19500
Zone 11	3532	13	138	349	0	17660
Zone 12	4022	11	335	370	200	20110
Zone 13	3908	11	271	325	137	19540
Zone 14	3867	11	271	379	64	19335
Zone 15	4130	11	353	400	0	20650
Total	56978					284890
					Ac.	6.54017

RSF 2 (Zones 1-15)						
Zones	L.F. Drip	Distal Ends	Min. Drip L.F.	Max. Drip L.F.	Tight Line L.F.	Sq. Ft.
Zone 1	3776	16	146	375	377	18880
Zone 2	4302	13	157	400	402	21510
Zone 3	3958	16	193	370	0	19790
Zone 4	4240	16	126	345	0	21200
Zone 5	3762	11	175	397	43	18810
Zone 6	3541	15	178	262	467	17705
Zone 7	3792	10	335	397	178	18960
Zone 8	3850	10	347	400	0	19250
Zone 9	3779	11	263	397	46	18895
Zone 10	3835	14	207	383	0	19175
Zone 11	3936	10	376	397	0	19680
Zone 12	4117	12	203	397	337	20585
Zone 13	4151	13	250	380	0	20755
Zone 14	3896	13	200	388	0	19480
Zone 15	3365	12	205	365	50	16825
Total	58300					291500
					Ac.	6.69192

Soil Reserves	
Soils	Area (Ft.)
R1	6500
R2	1932
R3	3080
R4	1894
R5	6341
R6	9917
R7	2488
R8	1632
R9	1575
R10	1129
R11	10988
R12	41583
R13	175779
R14	16967
R15	1951
R16	13305
Total Reserve Soils = 8.81Ac.	

Owner/Developer:
September Bloom INC.
118 Sars Lane
McMinnville, TN 37110

Floodplain Note:
No Portion Of This Site Lies Within The 100 Year Flood Plain Per F.E.M.A. Community Panel No. 47175C0175C, Dated April 19th, 2010.

Total Site Land Data:
Total site area: ±31.81 Acres
Proposed Residential Multi-Family Development
Phase 1: Admin Bldg., Welcome Center, & Bldgs. A, B, & C.
Phase 2: Bldgs D, E, & F.

Yard Requirements:
Front: 30'
Secondary Front: 20'
Side: 15'
Rear: 20'

Deed Reference:
The property shown hereon is Tax Map 118, Parcel 24.00 in Van Buren County, as recorded in R.B. 393, Pg 790

STEP Design:
Maximum Design Flow = 1139 Bedrooms x 100 gpd/Room + 150 Employees
Design Loading Soil Rate = 0.2 gpd/sf
Required Land Application Area = 13.23 Acres
Proposed Land Application Area = 13.23 Acres
Required Land Reserve Area = 6.61 Acres
Proposed Land Reserve Area = 6.61 Acres
Total Soil Required = 19.84 Acres
Total Soil Provided = 22.08 Acres

REVISED: 6-15-2022: PR Locations Added

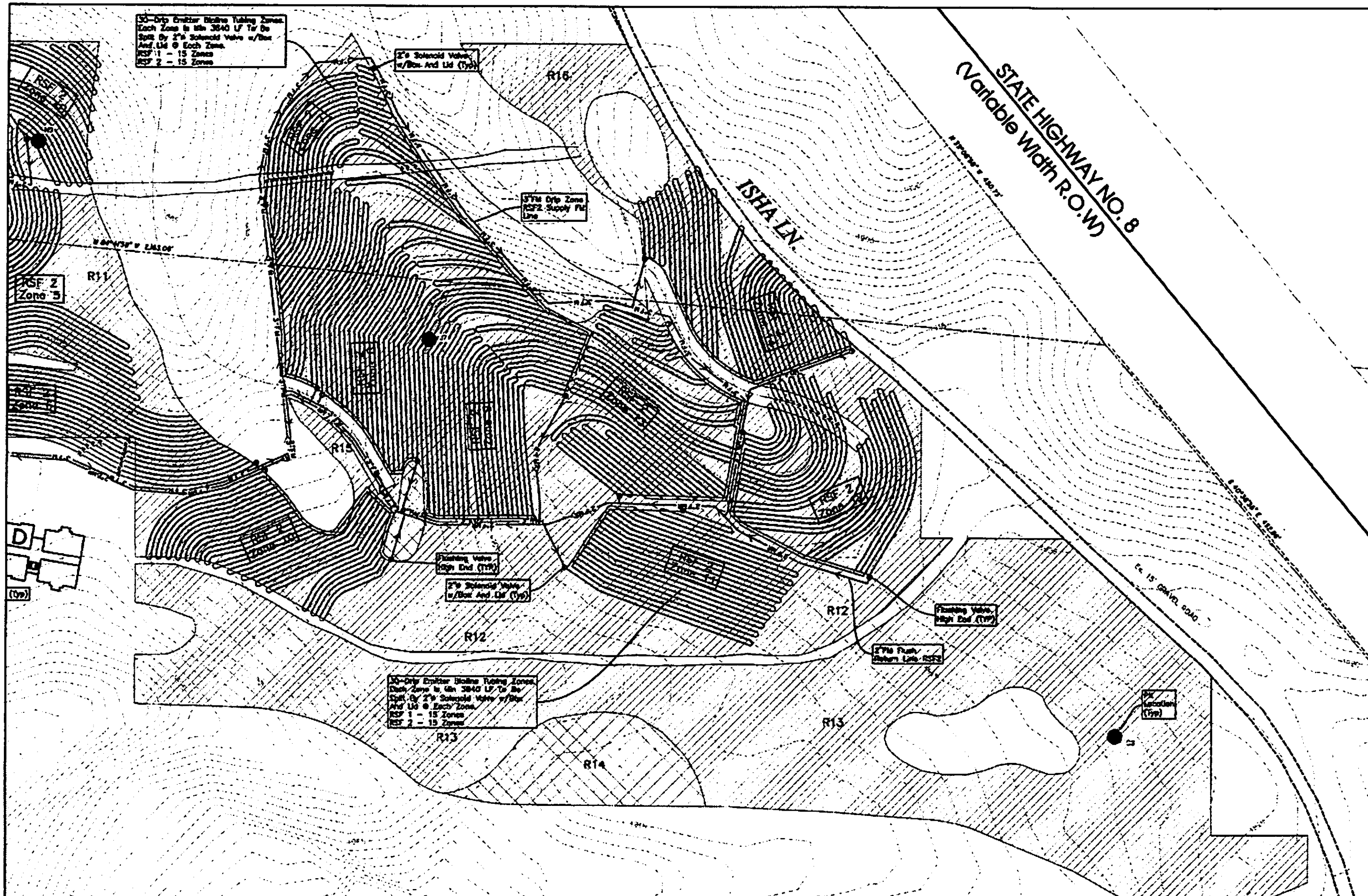
DRAWN: GRL
DATE: 2-10-2022
CHECKED: MAT
FILE NAME: 20060STEP
SCALE: 1"=50'
JOB NO.: 20060
SHEET: C2.0

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

Master Wastewater Treatment Plan

SEC, Inc.
SITE ENGINEERING CONSULTANTS
ENGINEERING · SURVEYING · LAND PLANNING
LANDSCAPE ARCHITECTURE
850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE: (615) 890-7901 E-MAIL: TREED@SEC-CIVIL.COM FAX: (615) 895-2567

JAMES F. REED III — STATE OF TENNESSEE



RSF 1 (Zones 1-15)						
Zones	L.F. Drip	Distal Ends	Min. Drip L.F.	Max. Drip L.F.	Tight Line L.F.	Sq. Ft.
Zone 1	3756	11	211	395	0	18780
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Zone 11	3532	13	123	349	0	17660
Zone 12	4022	11	335	370	200	20110
Zone 13	3908	11	271	325	137	19540
Zone 14	3867	11	271	379	64	19335
Zone 15	4130	11	353	400	0	20650
Total	56978					284890
					Ac.	6.54017

RSF 2 (Zones 1-15)						
Zones	L.F. Drip	Distal Ends	Min. Drip L.F.	Max. Drip L.F.	Tight Line L.F.	Sq. Ft.
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Zone 6	3541	15	178	262	467	17705
Zone 7	3792	10	335	397	178	18960
Zone 8	3850	10	347	400	0	19250
Zone 9	3779	11	263	397	46	18895
Zone 10	3835	14	207	383	0	19175
Zone 11	3936	10	376	397	0	19680
Zone 12	4117	12	203	397	337	20585
Zone 13	4151	13	250	380	0	20755
Zone 14	3896	13	200	388	0	19480
Zone 15	3365	12	205	365	50	16825
Total	58300					291500
					Ac.	6.69192

Soil Reserves	
Soils	Area (Ft.)
R1	6500
R2	1032
R3	3060
R4	1894
R5	6341
R6	9017
R7	2438
R8	1632
R9	1575
R10	1129
R11	10988
R12	41583
R13	175779
R14	16667
R15	1951
R16	13305
Total Reserve Soils = 6.81Ac.	

Legend:

Owner/Developer:

Floodplain Note:

Total Site Land Data:

Yard Requirements:

Deed Reference:

STEP Design:

SITE ENGINEERING CONSULTANTS
ENGINEERING • SURVEYING • LAND PLANNING
LANDSCAPE ARCHITECTURE
SEC, Inc.
853 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

JAMES F. REED III — STATE OF TENNESSEE

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

REVISED: 6-13-2022: Pit Locations Added

DRAWN: CRL
DATE: 2-10-2022
CHECKED: MAT
FILE NAME: 20060STEP
SCALE: 1"=50'
JOB NO. 20060
SHEET C2.1

Master Wastewater Treatment Plan

General Notes:
1. The soil types and locations, as shown for Isha Kamala are taken from a soils map provided by William Timothy Baxter. S.E.C. Inc. assumes no responsibility for the accuracy or completeness of the soils shown hereon.

General Utility Notes:
1. Existing utility lines shown are approximate locations only. The contractor shall field verify all existing utility line locations prior to any construction. Any deviations from the design locations shall be reported to the owner or engineer prior to construction.

2. The contractor will provide all necessary protective measures to safeguard existing utilities from damage during construction of this project. In the event that special equipment is required to work over and around the utilities, the contractor will be required to furnish such equipment. The cost of protecting utilities from damage and furnishing special equipment will be included in the price bid for other items of construction.

3. The contractor shall notify each individual utility owner of his plan of operation in the area of the utilities. Prior to commencing work, the contractor shall contact the utility owners and request them to properly locate their respective utilities in the ground. This notification shall be given at least three (3) business days prior to commencement of excavation or construction around the utility.

4. In Tennessee it is a requirement per "The Underground Utility Damage Prevention Act" that anyone who engages in excavation must notify all known utility owners, no less than three nor more than ten working days, prior to their intended excavation. A list of these utility owners may be obtained from the county register of deeds. Those utility owners who participate in the Tennessee One Call System can be notified toll free at 1-800-351-1111.

S.T.E.P. System General Notes:
1. The location of treatment system components as shown are general in nature. Minor field adjustments may be necessary. The contractor may request to modify the location of the components through the owner and the Tennessee Division of Water Pollution Control.

2. This design is for the treatment and disposal of wastewater collected from Isha Studio Buildings that total 115,250gpd.

3. All flows for this system shall be controlled and monitored by the MVD (Smart) Panel. This monitoring shall considered the flow meter for this system.

4. The minimum horizontal separation between the closest two points of the water and sewer line is ten (10) feet. The minimum vertical separation between the closest two points of the water and sewer line shall be 18 inches, with waterlines being above sewer lines.

5. Contractor shall comply with the most current requirements, specifications, and detail drawings for the installation of STEP system collection lines as outlined in the WPC Design Criteria Section 2.4.1.

6. All trenches, pipe laying, and backfilling shall be in accordance with federal O.S.H.A. regulations.

7. Utility contractor shall have approval of all governing agencies having jurisdiction over this system prior to installation.

8. All tanks shall be one-piece, structurally sound, watertight tanks as manufactured by Jarrett concrete products, or approved equal.

9. Testing procedure for water tightness is as follows. Fill tank 2" into the riser. After a period of 24 hours, the water level should have lowered no more than ¼".

10. Collection forcemain shall be 2"ø, 3"ø, and 4"ø SDR21 purple PVC pipe. Forcemain shall be tested and rated for a 150 PSI working pressure.

Grading and Drainage Notes:
1. The site work contractor shall coordinate the installation of all underground utilities with his work. All underground utilities (water, storm sewer, and any other miscellaneous underground utilities, devices, or structures), shall be in-place prior to the placement of base course material.

2. The contractor shall verify horizontal and vertical location of all existing storm sewer structures, pipes and all utilities prior to construction.

3. Clearing and grubbing limits shall include all areas disturbed by grading operation.

4. Any graded or disturbed areas shall have 4 inches of topsoil, seed, mulch, fertilizer and water applied until a healthy stand of grass is obtained. The restoration shall closely follow construction.

5. All pipes entering storm sewer structures shall be grouted to assure connection at structure is water tight.

6. The soil materials on lots shown hereon may be disturbed by cutting or filling operations performed during or before development. Therefore, the builder of any proposed structure shall investigate the current conditions and consult with a geotechnical expert or other qualified person as he deems appropriate to assure himself that the design of the proposed foundation is adequate.

7. It is the responsibility of each residential builder to design and construct in accordance with a suitable grading and drainage plan which will convey surface water without ponding in the lot or under the house, from his building site to the drainage system constructed by the subdivision developer.

8. The property shown hereon is Tax Maps: Map 110, Parcel 24.00, in Van Buren County, as recorded in DB 390, Pg 700.

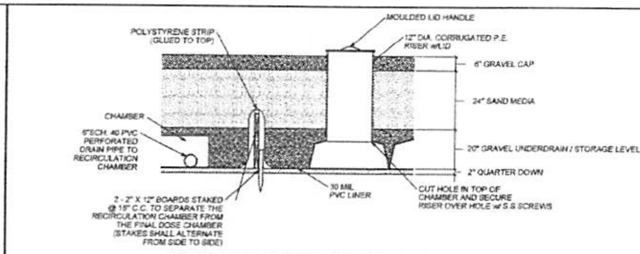
Erosion Control Notes:
1. The contractor is responsible for removing silt from site if not reusable on-site and assuring plan alignment and grade in all ditches at completion of construction.

2. The contractor is responsible for cleaning out all storm drainage structures, including flumes, pipes, etc, prior to completion of this project.

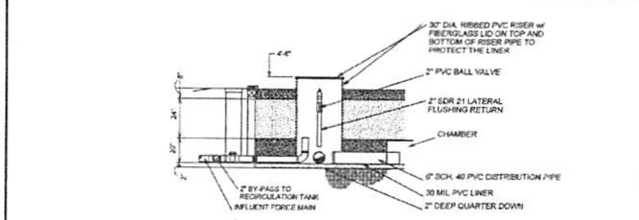
3. Erosion control shall be provided for all cut and fill operations within the limits of the construction site, throughout the construction period to provide the site with maximum protection from erosion at all times.

4. Erosion control measures are to be installed prior to any grading on-site and are to be maintained in place until stabilization of erodable soils has been accomplished.

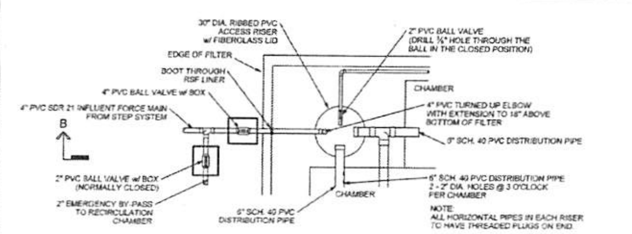
5. The contractor shall provide erosion control to minimize erosion in all areas being disturbed in accordance with the county regulations.



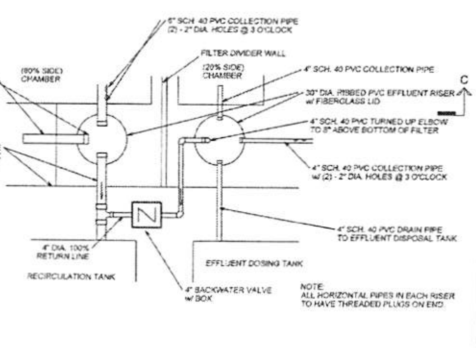
FILTER DIVIDER WALL - SECTION "C-C"
NOT TO SCALE



INFLUENT RISER - SECTION "B-B"
NOT TO SCALE



INFLUENT RISER - PLAN
NOT TO SCALE

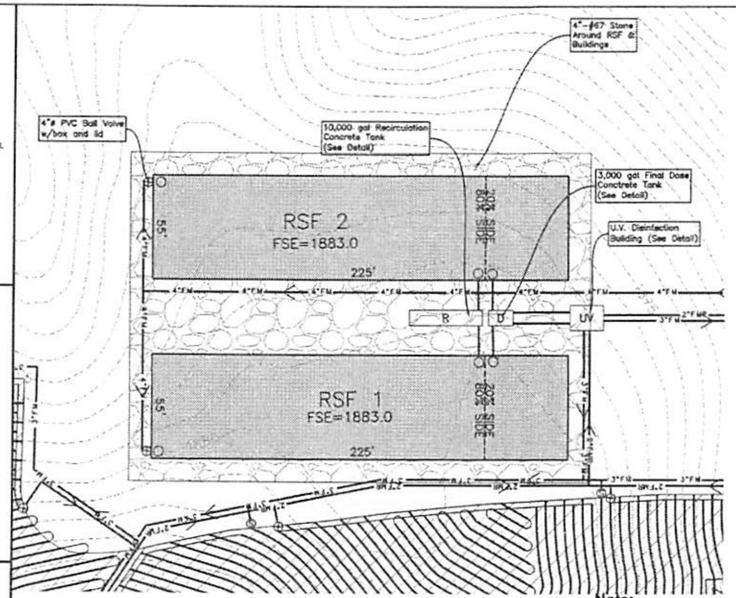


SAND GRADATION FOR FILTER SAND

SIEVE SIZE	PERCENT PASSING
3/8	100
4	80 - 100
8	7 - 75
16	0 - 5
30	0 - 3
50	0 - 2

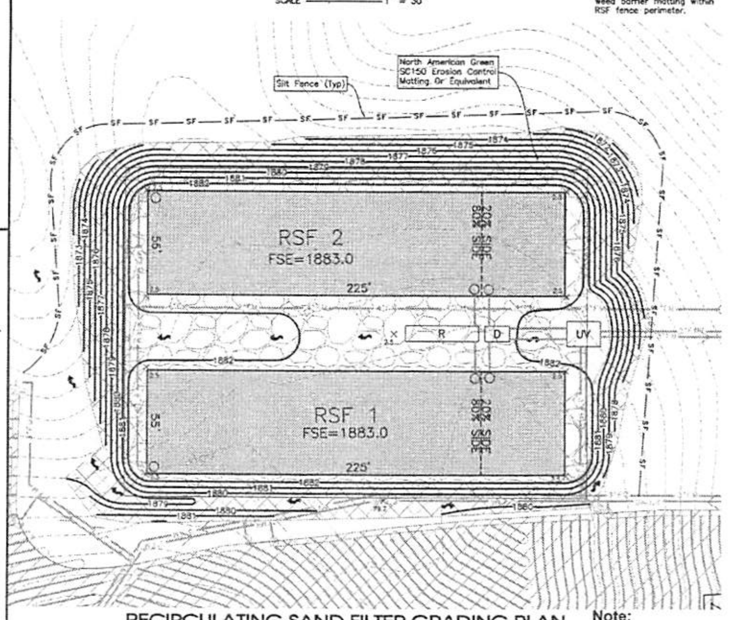
Cu = 1.5 TO 2.5
EFFECTIVE SIZE D_{10} = 1.5 TO 2.5 mm
SAND MUST BE WELL WASHED

EFFLUENT RISER - PLAN
NOT TO SCALE



RECIRCULATING SAND FILTER PLAN DIAGRAM
SCALE 1" = 30'

Note:
Add #67 Stone 4" min depth and Geotech weed barrier matting within RSF fence perimeter.



RECIRCULATING SAND FILTER GRADING PLAN
SCALE 1" = 30'

Note:
Add #67 Stone 4" min depth and Geotech weed barrier matting within RSF fence perimeter.

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

SEC, Inc. SITE ENGINEERING CONSULTANTS
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LANDSCAPE ARCHITECTURE
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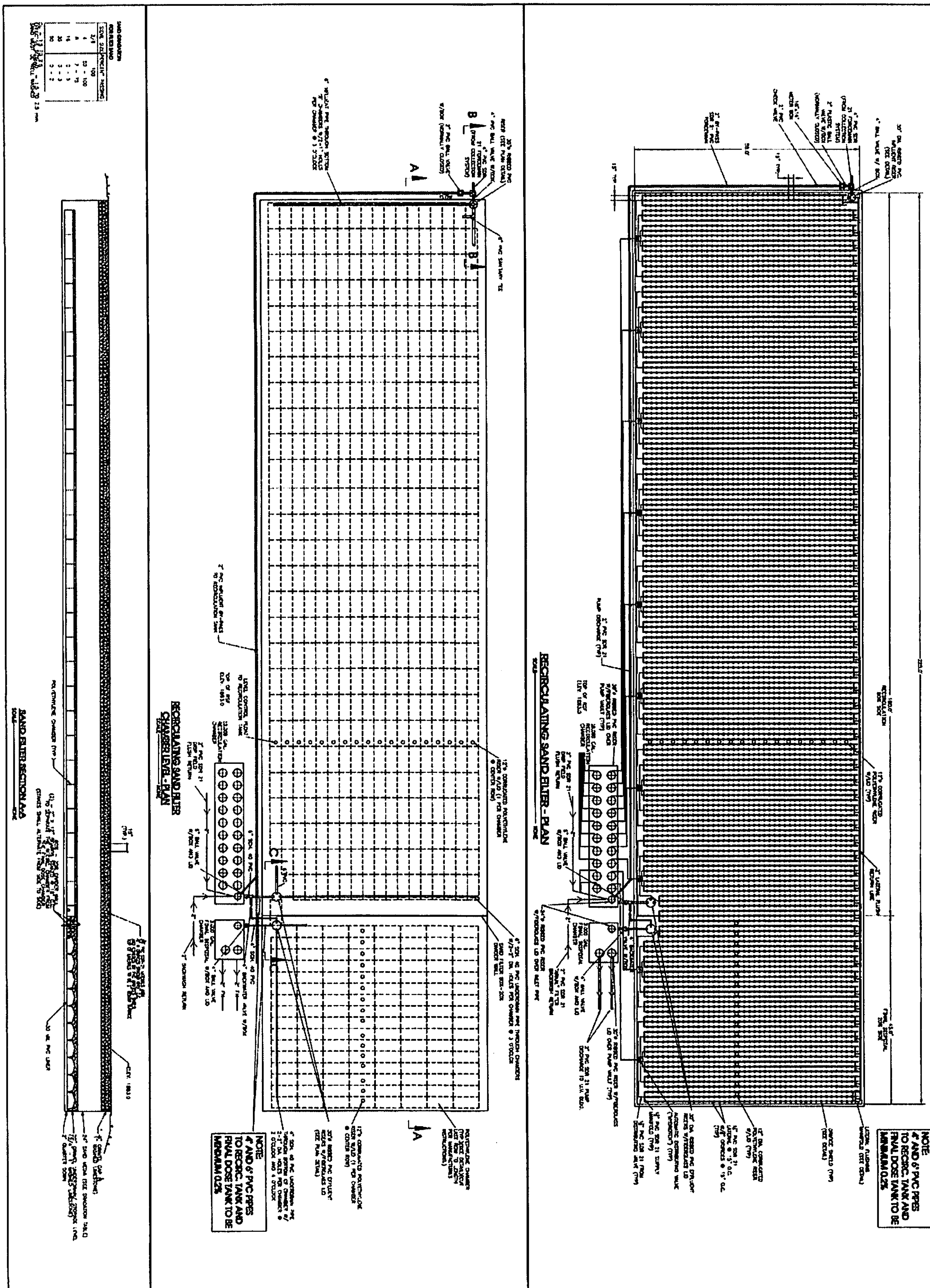
PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

JAMES F. REED III — STATE OF TENNESSEE

REVISED:
DRAWN: DRL
DATE: 2-13-2022
CHECKED: MAT
FILE NAME: 20060STEP
SCALE: None
JOB NO. 20060
SHEET: C3.0

Notes & Details



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JAMES F. REED III — STATE OF TENNESSEE

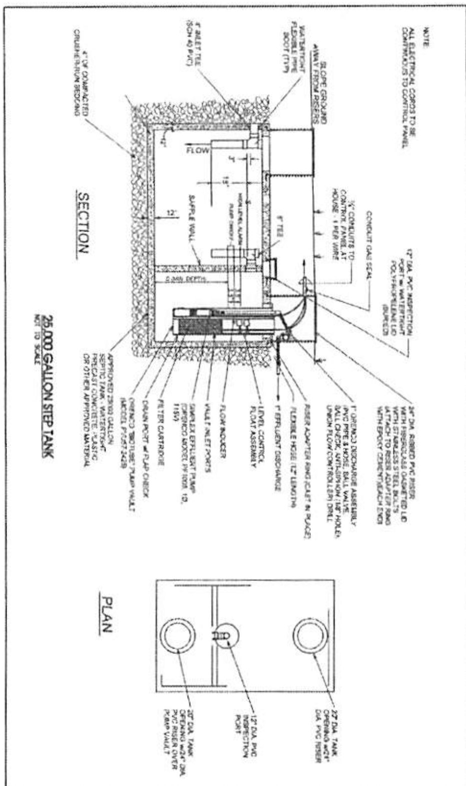
Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

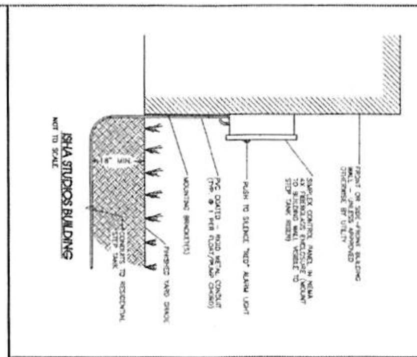
Details

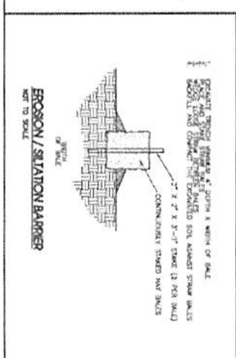
JOB NO. 20060

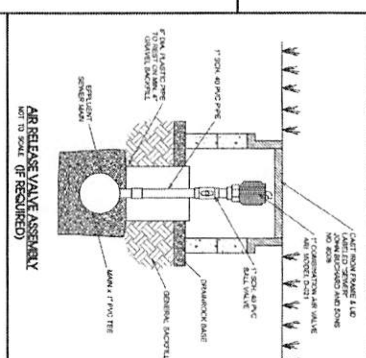
SCALE: None

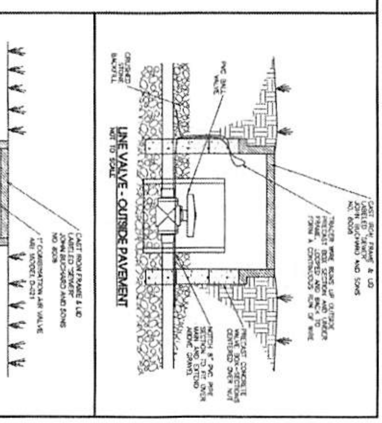
SHEET C3.1

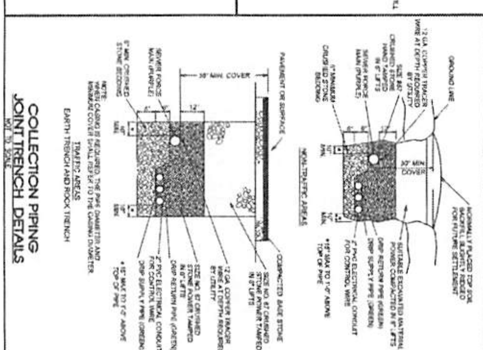


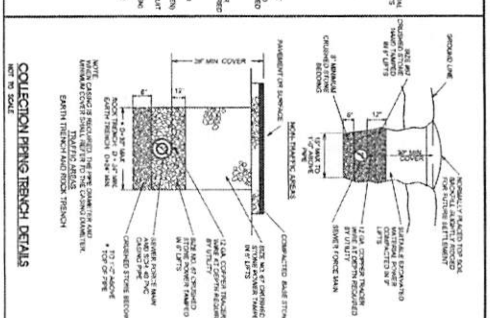












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JAMES F. REED III — STATE OF TENNESSEE

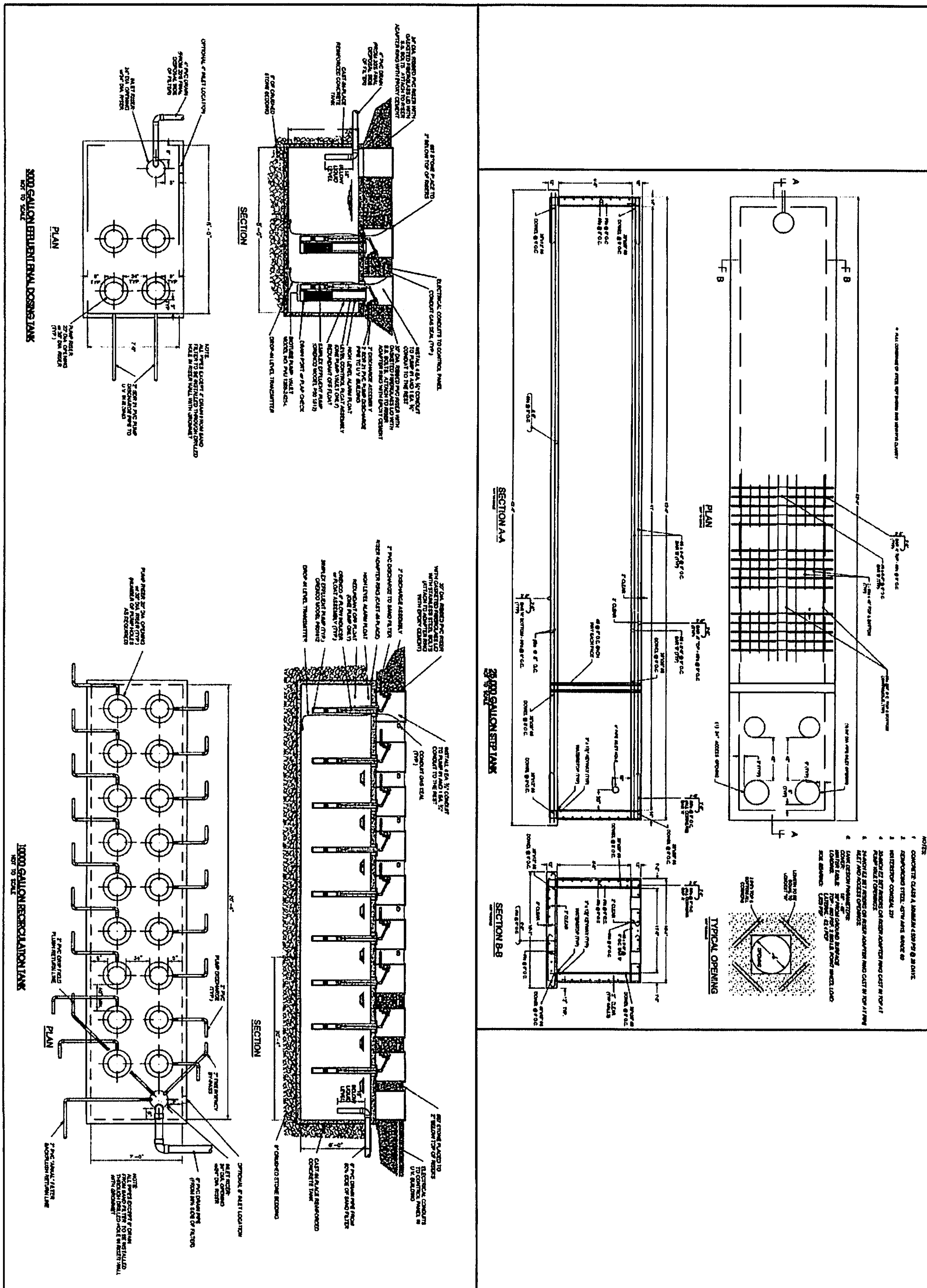
Isha Studios

Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans

Van Buren County, Tennessee

REVISED:
DRAWN: CRL
DATE: 2-10-2022
CHECKED:
FILE NAME: 20060STP
SCALE: None
JOB NO. 20060
SHEET C3.2

Details



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650 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129

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JAMES F. REED II — STATE OF TENNESSEE

Isha Studios

Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans

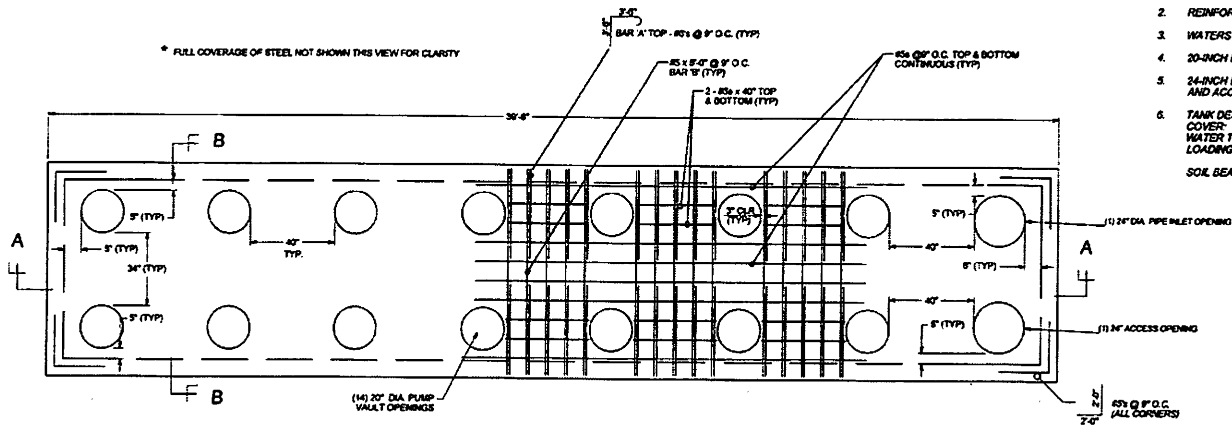
Van Buren County, Tennessee

Details

JOB NO. 2C060

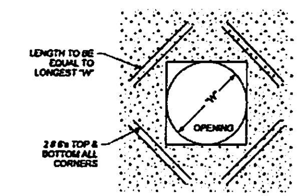
SCALE: None

SHEET: C3.3



PLAN

NOT TO SCALE

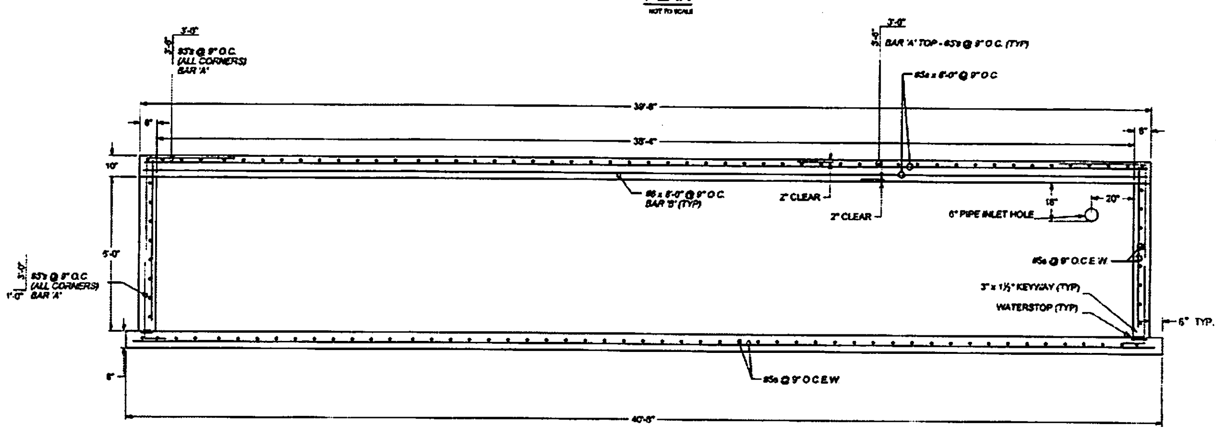


TYPICAL OPENING

NOT TO SCALE

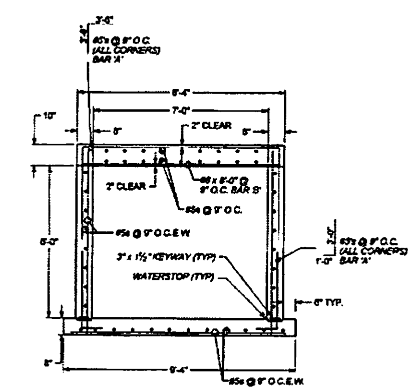
NOTES:

1. CONCRETE: CLASS A, MINIMUM 4,500 PSI @ 28 DAYS.
2. REINFORCING STEEL: ASTM A615, GRADE 60
3. WATERSTOP: CONSEAL 231.
4. 20-INCH EZ SET RISERS OR RISER ADAPTER RING CAST IN TOP AT PUMP VAULT OPENINGS.
5. 24-INCH EZ SET RISERS OR RISER ADAPTER RING CAST IN TOP AT PIPE INLET AND ACCESS OPENINGS.
6. TANK DESIGN PARAMETERS:
   - COVER: 18" - 48"
   - WATER TABLE: 36" FROM GROUND SURFACE
   - LOADING: TOP - 500 PSF, 2,500 LB. POINT WHEEL LOAD; LATERAL - 62.4 PCF
   - SOIL BEARING: 1,500 PSF



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

NOTE:
FOR USE OF ALTERNATE DESIGN SECTION
TOP AND SIDES MUST BE CAST MONOLITHICALLY

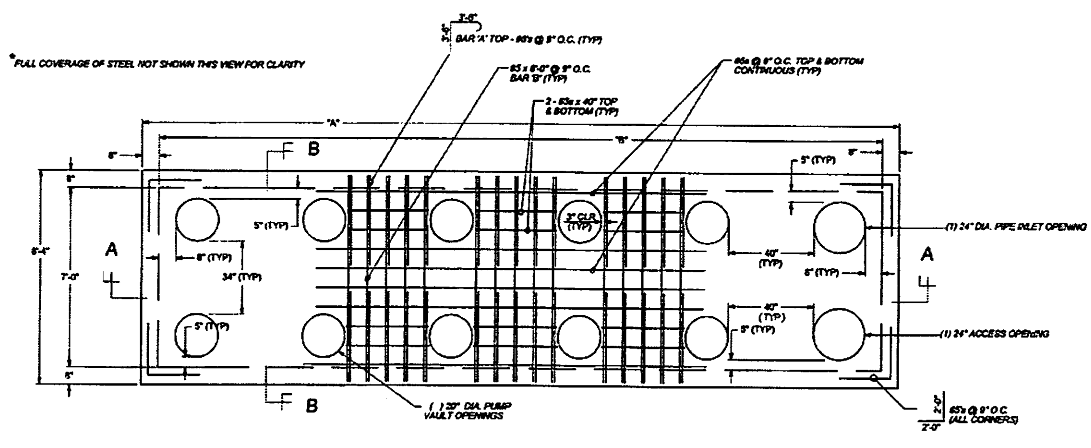
CONSOLIDATED UTILITY DISTRICT Rutherford County, Tennessee	10,000 GALLON RECIRCULATION TANK STRUCTURAL PLAN AND SECTIONS		STANDARD DRAWING No. SF-10A
	DATE MARCH 2022	SCALE NONE	

SEC, Inc. SITE ENGINEERING CONSULTANTS

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

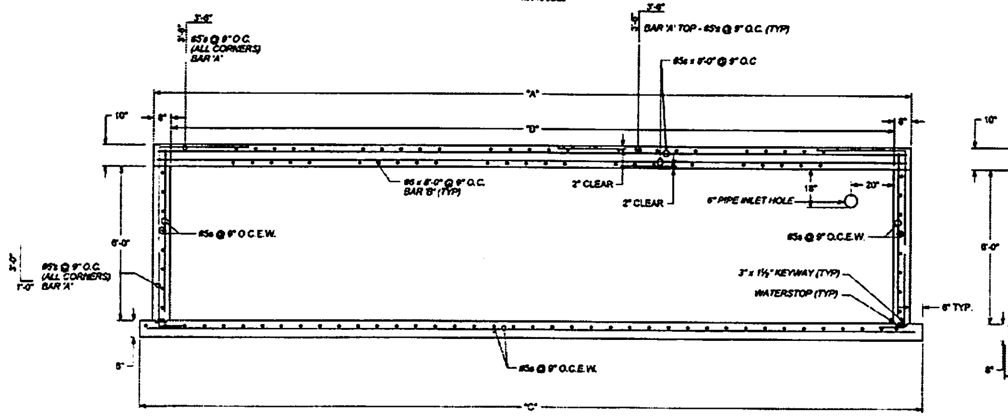
Details

DRAWN: DRL
DATE: 2-10-2022
CHECKED: MAT
FILE NAME: 20060STL*
SCALE: None
JOB NO. 20060
SHEET: C3.4



PLAN

NOT TO SCALE



SECTION A-A

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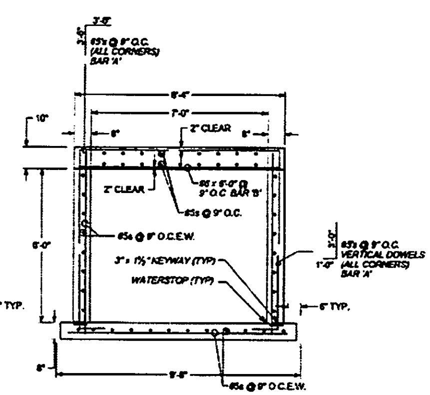

SECTION B-B

NOT TO SCALE

NOTES:

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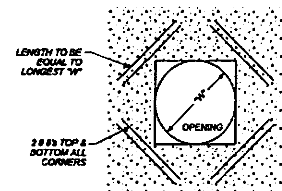
2. REINFORCING STEEL: ASTM A615, GRADE 60
3. WATERSTOP: CONSEAL 231.
4. 20-INCH EZ SET RISERS OR RISER ADAPTER RING CAST IN TOP AT PUMP VAULT OPENINGS.
5. 24-INCH EZ SET RISERS OR RISER ADAPTER RING CAST IN TOP AT PIPE INLET AND ACCESS OPENINGS.
6. TANK DESIGN PARAMETERS:
   COVER: 18" - 48"
   WATER TABLE: 36" FROM GROUND SURFACE
   LOADING: TOP - 500 PSF, 2,500 LB. POINT WHEEL LOAD; LATERAL - 62.4 PCF
   SOIL BEARING: 1,500 PSF

SIZE	DIM "A"	DIM "B"	DIM "C"
2000 GAL	9'-6"	8'-0"	10'-6"
3000 GAL	13'-6"	12'-0"	14'-6"
4000 GAL	17'-6"	16'-0"	18'-6"
5000 GAL	21'-0"	20'-4"	22'-0"
6000 GAL	24'-10"	24'-2"	25'-10"
8000 GAL	32'-10"	32'-2"	33'-10"



TYPICAL OPENING

NOT TO SCALE

NOTE:
FOR USE OF ALTERNATE DESIGN SECTION TOP AND SIDES MUST BE CAST MONOLITHICALLY

CONSOLIDATED UTILITY DISTRICT
Rutherford County, Tennessee

RECIRCULATION & DISPOSAL TANKS STRUCTURAL DETAILS

DATE: MARCH 2022 | SCALE: NONE

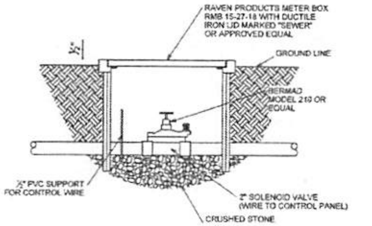
SF-9A

SITE ENGINEERING CONSULTANTS
SEC, Inc.

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

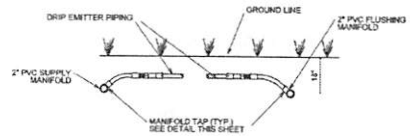
Details

DATE: 2-10-2022
SCALE: None
JOB NO: 20060
SHEET: C3.5



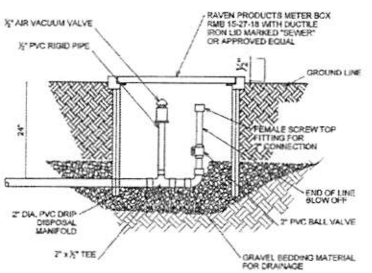
ELECTRIC SOLENOID VALVE

NOT TO SCALE



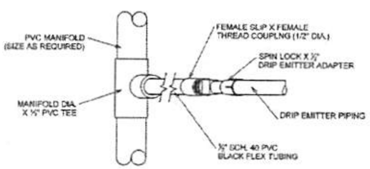
DRIP DISPOSAL PIPING END MANIFOLD ELEVATION

NOT TO SCALE



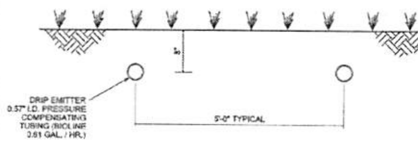
END OF SUPPLY LINE DRIP DISPOSAL AIR RELEASE VALVE AND BLOW-OFF ASSEMBLY

NOT TO SCALE



DRIP PIPING MANIFOLD TAP

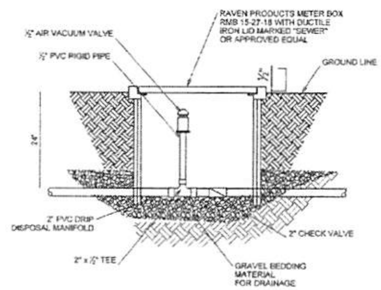
NOT TO SCALE



NOTE:
DRIP EMITTER PIPING SHALL BE PLOWED IN PLACE

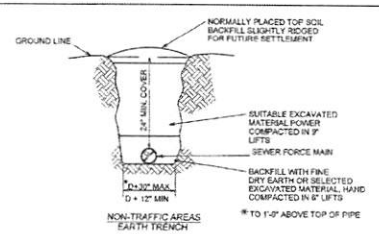
DRIP EMITTER PIPING

NOT TO SCALE



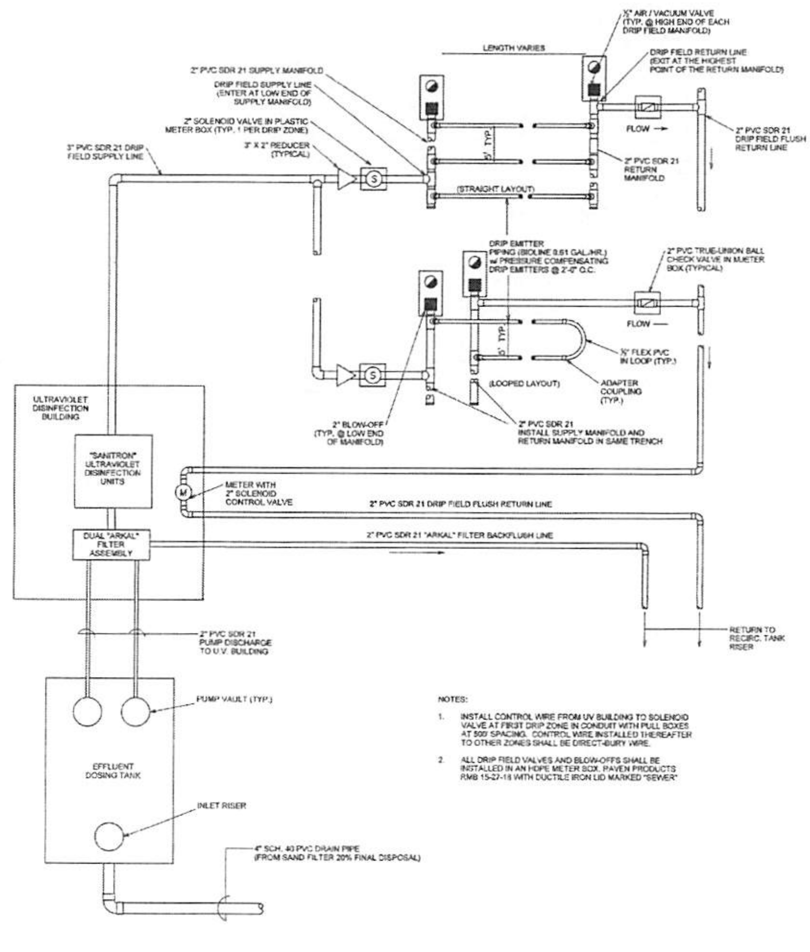
RETURN LINE AIR RELEASE AND CHECK VALVE ASSEMBLY

NOT TO SCALE



TRENCH DETAIL - DRIP ZONE SUPPLY & RETURN PIPING

NOT TO SCALE



NOTES:

1. INSTALL CONTROL WIRE FROM UV BUILDING TO SOLENOID VALVE AT FIRST DRIP ZONE IN CONDUIT WITH PULL BOXES AT 500' SPACING. CONTROL WIRE INSTALLED THEREAFTER TO OTHER ZONES SHALL BE DIRECT-BURY WIRE.
2. ALL DRIP FIELD VALVES AND BLOW-OFFS SHALL BE INSTALLED IN AN HDPE METER BOX, RAVEN PRODUCTS RMB 15-27-18 WITH DUCTILE IRON LID MARKED "SEWER"

DRIP FIELD EFFLUENT DISPOSAL - SCHEMATIC

NOT TO SCALE

CONSOLIDATED UTILITY DISTRICT Rutherford County, Tennessee	DRIP FIELD DISPOSAL DETAILS		SF-7
	DATE MARCH 2022	SCALE NONE	

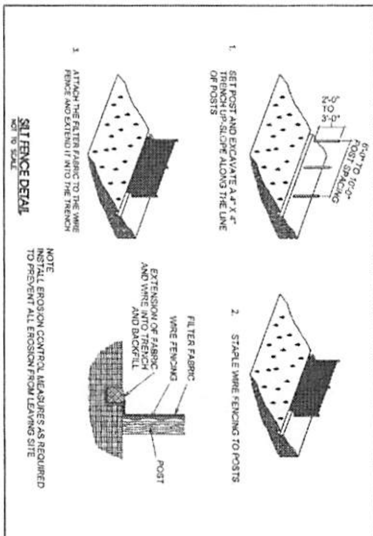
SEC, Inc. SITE ENGINEERING CONSULTANTS

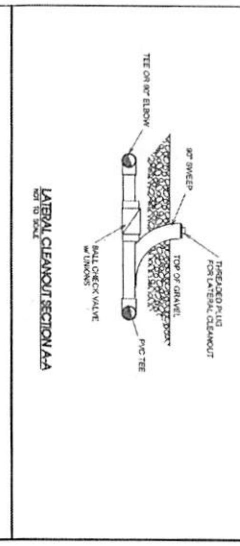
Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

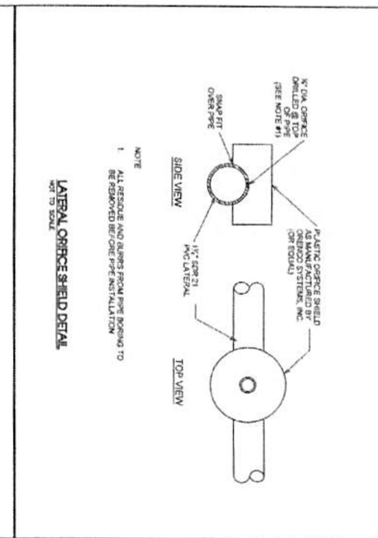
Details

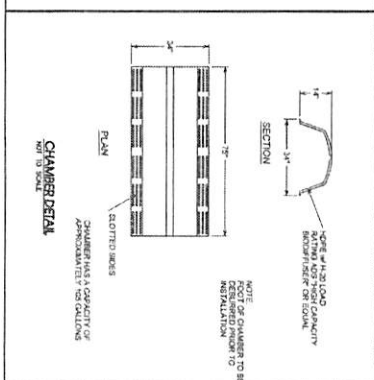
DATE: 2-10-2022
FILE NAME: 20060STEP
SCALE: None
JOB NO. 20060
SHEET:

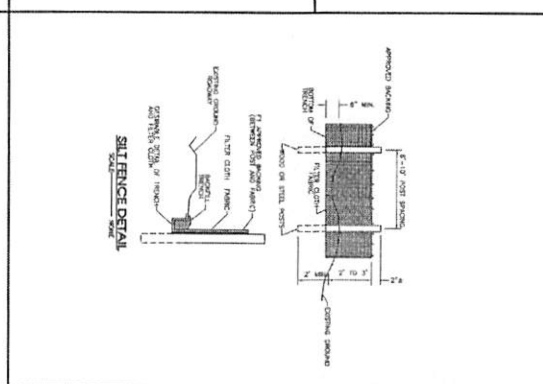
C3.6

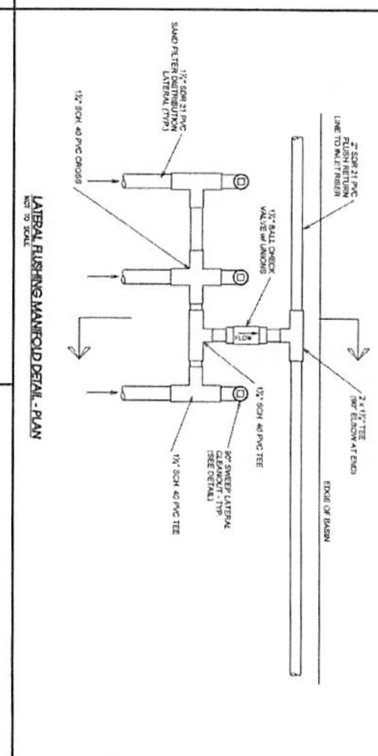


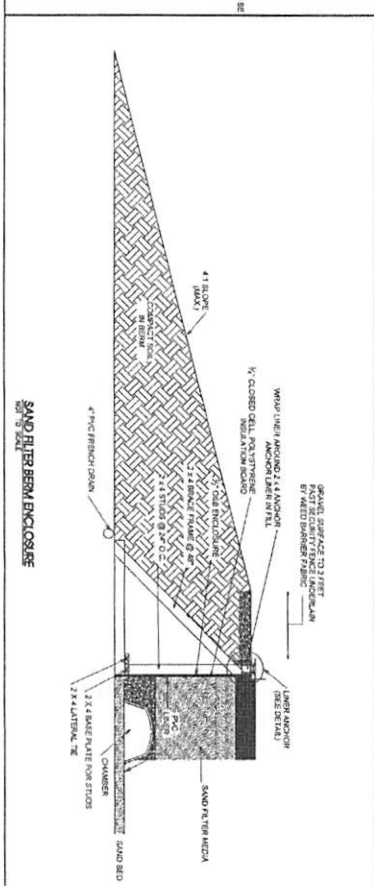


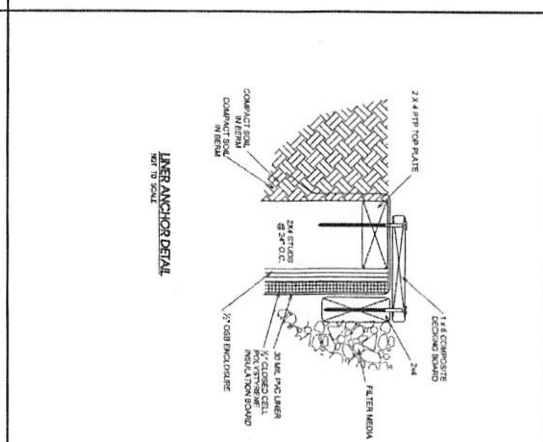


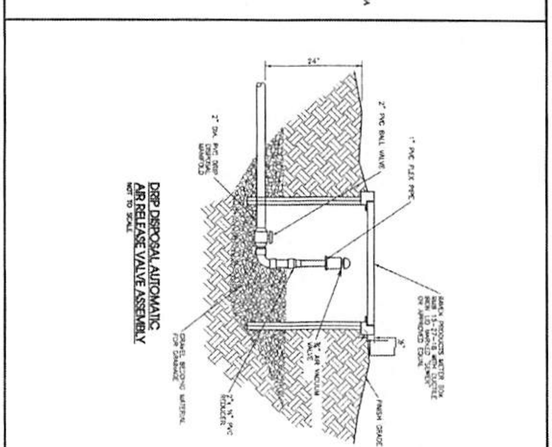


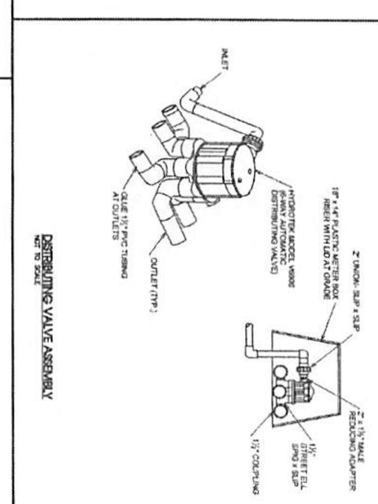












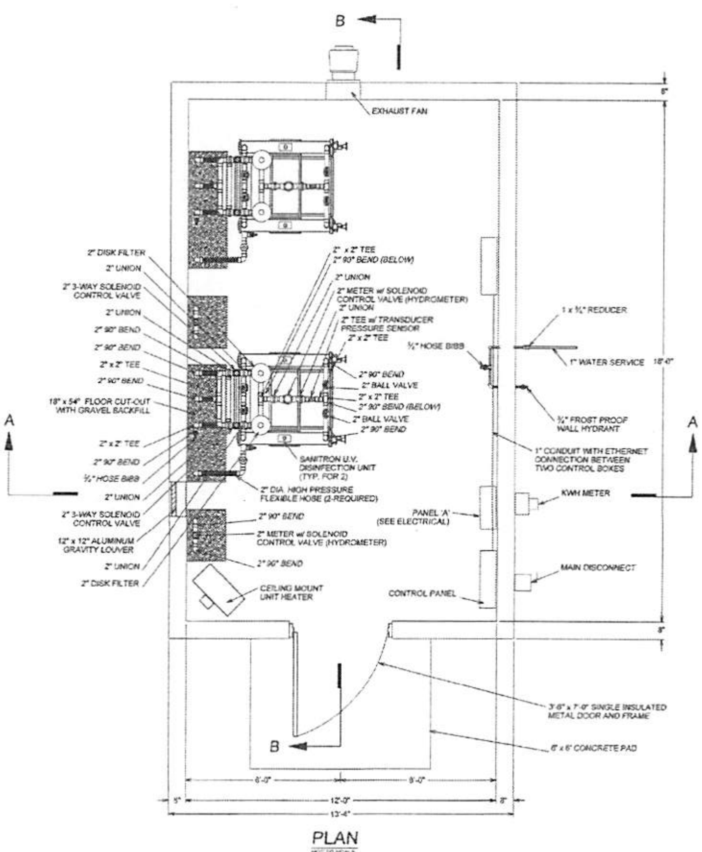
REVISED:	
DRAWN: GRL	
DATE: 2-10-2022	
CHECKED:	
WAT	
FILE NAME: 20060STEP	
SCALE: None	
JOB NO. 20060	
SHEET: C3.7	

Details

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

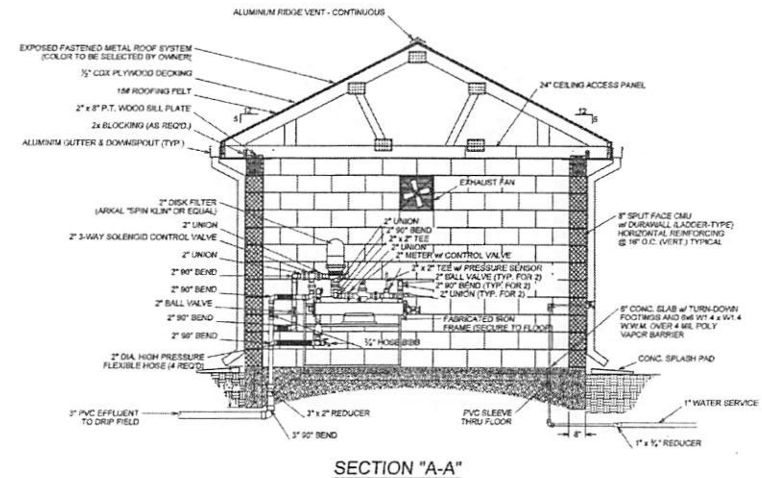
SEC, Inc.
SITE ENGINEERING CONSULTANTS
ENGINEERING • SURVEYING • LAND PLANNING
LANDSCAPE ARCHITECTURE
850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE: (615) 890-7901 E-MAIL: JREED@SEC-CIVIL.COM FAX: (615) 895-2567

The site as shown on these construction drawings is intended to achieve specific engineering design criteria and objectives. It is the sole responsibility of the owner/developer to ensure that the construction of the site shown on these construction drawings is in total accordance with the design as noted, described, and illustrated. The engineer assumes no administrative liability or responsibility in the assurance that the site is constructed in accordance with the construction plans.



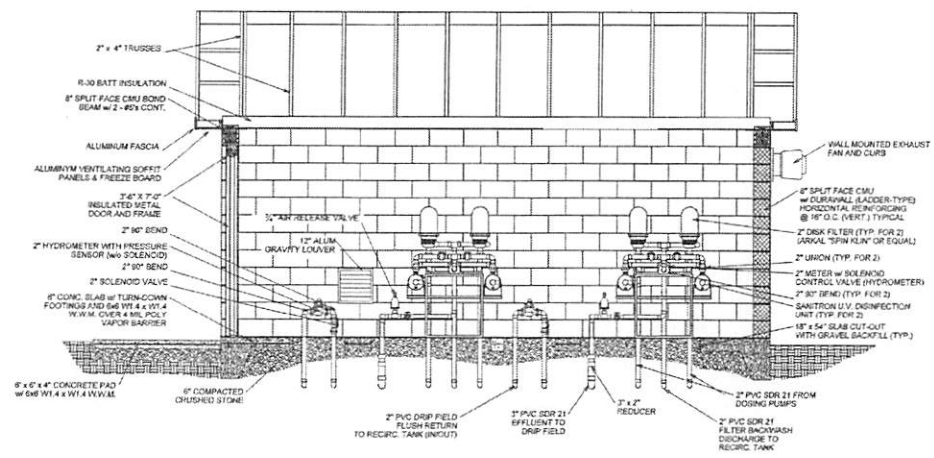
PLAN

NOT TO SCALE



SECTION "A-A"

NOT TO SCALE



SECTION "B"-"B"

NOT TO SCALE

GENERAL NOTES:

1. PIPING SHOWN IS FOR TWO (2) RECIRCULATING SAND FILTERS.
2. ALL BUILDING PRESSURE SEWER PIPING AND VALVES SHALL BE 2" SCH. 80 PVC.
3. CONTRACTOR SHALL LEAVE PIPE STUB-OUTS IN BUILDING IF FUTURE U.V. DISINFECTION UNITS ARE PLANNED.
4. ALLOW SUFFICIENT SPACE BETWEEN WALL AND END OF U.V. UNIT FOR REMOVAL OF BULB.
5. FILTER UNITS AND U.V. UNITS TO BE SUPPORTED BY CUSTOM-MADE WELDED ANGLE IRON FRAME. FRAME TO BE PAINTED WITH TWO COATS BLACK ENAMEL. FRAME TO BE STURDY AND LEVEL.
6. STRUCTURAL CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 4,000 psi @ 28-DAYS

CONSOLIDATED UTILITY DISTRICT Rutherford County, Tennessee	ULTRAVIOLET DISINFECTION BUILDING 2 UV UNIT		STANDARD DRAWING NO. SF-13
	DATE MARCH 2022	SCALE NONE	

SITE ENGINEERING CONSULTANTS

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JAMES F. REED III — STATE OF TENNESSEE

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

Details

REVISED:	
DRAWN: GRL	
DATE: 2-10-2022	
CHECKED:	
MAT	
FILE NAME:	20050STEP
SCALE:	None
JOB NO.:	20050
SHEET:	C3.8

ELECTRICAL SPECIFICATIONS

SECTION 16000 GENERAL PROVISIONS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. NFPA 70 NATIONAL ELECTRICAL CODE

B. NFPA 101 LIFE SAFETY CODE

C. ALL OTHER APPLICABLE STATE AND LOCAL CODES.

1.02 SUBMITTALS

A. SHOP DRAWINGS

1. SUBMIT FOR APPROVAL, PRIOR TO INSTALLATION, SIX COPIES OF COMPLETE DESCRIPTIVE DATA ON ALL EQUIPMENT AND SYSTEMS AS REQUIRED BY OTHER SECTIONS OF THIS SPECIFICATION. CLEARLY INDICATE ALL PROPOSED SUBSTITUTIONS AND DEVIATIONS FROM DRAWINGS AND SPECIFICATIONS.

2. CHECK ALL SUBMITTALS FOR CLEARANCES AND COORDINATION WITH OTHER TRADES. SUBMITTALS SHALL BE CERTIFIED BY THE CONTRACTOR'S APPROVAL STAMP, THAT ALL CONDITIONS HAVE BEEN CHECKED AND THAT NO CONFLICTS EXIST.

B. RECORD DRAWINGS

1. SUBMIT, TO THE OWNER, RECORD DRAWINGS SHOWING FIELD CHANGES MARKED IN RED.

1.03 COORDINATION

A. UTILITY COMPANIES

1. COORDINATE WITH UTILITY COMPANIES FOR SPECIFIC REQUIREMENTS FOR ELECTRICAL POWER.

2. INSTALL ELECTRICAL SERVICE IN ACCORDANCE WITH CURRENT UTILITY COMPANY REQUIREMENTS.

B. OTHER TRADES

1. COORDINATE WITH APPROVED SHOP DRAWINGS FOR POWER AND CONTROL REQUIREMENTS FOR THE SPECIFIC EQUIPMENT TO BE INSTALLED AND FOR EQUIPMENT FURNISHED FOR STARTERS AND DISCONNECT SWITCHES THAT MAY BE FURNISHED WITH THE EQUIPMENT.

1.04 WORK INCLUDED

A. THE WORK OF THIS SECTION INCLUDES FURNISHING OF LABOR AND MATERIALS AS REQUIRED FOR INSTALLATION OF A NEW ELECTRICAL DISTRIBUTION SYSTEM INCLUDING SERVICE, FEEDERS, PANELBOARDS, BRANCH CIRCUITS, LIGHTING, AND CONNECTIONS TO ALL EQUIPMENT REQUIRING ELECTRICAL POWER.

B. INSTALLATION OF CONDUIT FOR CONTROL AND SIGNAL WIRING.

C. TEMPORARY POWER AND LIGHTING FOR USE DURING CONSTRUCTION.

1.05 DRAWINGS

A. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND DO NOT SHOW IN DETAIL ALL REQUIRED FEATURES OF THE WORK NOR CONCEALED CONDITIONS. THEY SHALL BE SUPPLEMENTED BY THE CONTRACTOR'S KNOWLEDGE AND EXPERIENCE.

PART 2 PRODUCTS

2.01 GENERAL

A. ALL ELECTRICAL EQUIPMENT INSTALLED SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH EQUIPMENT.

2.02 GUARANTEE

A. FURNISH A WRITTEN GUARANTEE THAT ALL EQUIPMENT FURNISHED AND INSTALLED WILL BE FREE OF DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF ACCEPTANCE OF SAME BY THE OWNER. PROMPTLY REPLACE AND REPAIR ALL DEFECTIVE EQUIPMENT AND ALL OTHER EQUIPMENT DAMAGED THEREBY AT NO ADDITIONAL COST TO THE OWNER.

PART 3 EXECUTION

3.01 GENERAL

A. VISIT PROJECT SITE BEFORE SUBMISSION OF BID AND BECOME FAMILIAR WITH EXISTING CONDITIONS AND LOCATIONS OF EXISTING UTILITIES.

B. THE ENTIRE INSTALLATION SHALL BE MADE IN A NEAT MANNER BY PERSONS SKILLED IN THE ELECTRICAL TRADE AND SHALL BE IN ACCORDANCE WITH THE REFERENCE STANDARDS LISTED ABOVE.

C. MAKE POWER CONNECTIONS TO ALL EQUIPMENT FURNISH AND INSTALL ALL ASSOCIATED RECEPTACLES AND DISCONNECT SWITCHES. FUSE SIZES FOR DISCONNECT SWITCHES SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

D. FURNISH AND INSTALL CONDUIT AND WIRE FOR CONTROL AND SIGNAL SYSTEMS. SEE APPROVED EQUIPMENT SHOP DRAWINGS FOR LOCATIONS AND REQUIREMENTS.

3.02 WIRING

A. ALL SYSTEMS AND EQUIPMENT INSTALLED SHALL BE COMPLETELY TESTED AND SHALL BE LEFT IN GOOD WORKING ORDER.

SECTION 16050 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

NOT APPLICABLE

PART 2 PRODUCTS

2.01 RACEWAYS

A. RIGID STEEL CONDUIT

B. ELECTRICAL METALLIC TUBING

C. POLYVINYLCHLORIDE CONDUIT

2.02 WIRES AND CABLES

A. FEEDERS AND BRANCH CIRCUIT WIRES: COPPER, 600 VOLT, TYPE THWN INSULATION.

B. CONTROL CIRCUIT CABLES: COPPER CONDUCTOR, #14 AWG, TYPE THWN, OR AS REQUIRED BY EQUIPMENT MANUFACTURER.

2.03 WIRING DEVICES

A. WALL SWITCHES: AC GENERAL USE SNAP SWITCH WITH TOGGLE HANDLE, SPECIFICATION GRADE, 20 AMPERES, 120-277 VOLTS.

B. RECEPTACLES: TYPE 5-20R, SPECIFICATION GRADE, IVORY PLASTIC FACE.

C. COVERPLATES: GALVANIZED STEEL.

2.04 IDENTIFICATION

A. PROVIDE LAMINATED PLASTIC TAGS FOR ALL PANELBOARDS AND DISCONNECT SWITCHES. TAGS SHALL COMPLETELY IDENTIFY EQUIPMENT NAMED OR CONTROLLED.

PART 3 EXECUTION

3.01 RACEWAYS

A. ALL RACEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.

B. PERMITTED USAGE

1. ALL INTERIOR RACEWAYS SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT) UL SCHEDULE 40 PVC WHERE NOT EXPOSED TO PHYSICAL DAMAGE.

2. RACEWAYS EXPOSED TO EXTERIOR SHALL BE GALVANIZED RIGID STEEL CONDUIT (RGS).

3. RACEWAYS UNDERGROUND OR CAST IN CONCRETE SHALL BE GALVANIZED RIGID STEEL CONDUIT (RGS) OR SCHEDULE 40 PVC.

C. INSTALLATION

1. BE LIBERAL IN ARRANGING RACEWAYS FURNISH AND INSTALL ALL PROPER NUMBER AND SIZE PULL BOXES TO FACILITATE REGULATION OF CONDUCTORS.

2. INSTALL SEPARATE GROUNDING CONDUCTOR IN EACH RACEWAY.

3. PROVIDE RIGID GALVANIZED STEEL ELBOWS AND VERTICAL RISERING FOR RUNS OF PVC CONDUIT ENTERING GROUND OR FLOOR IN UNPROTECTED LOCATIONS.

4. MINIMUM SIZE FOR CONDUIT SHALL BE 3/4" EXCEPT THAT 1/2" MAY BE USED WHERE ENCLOSURE SIZE DOES NOT PERMIT 3/4".

3.02 WIRES AND CABLES

A. ALL POWER WIRING SHALL BE INSTALLED IN CONDUIT.

SECTION 16400 SERVICE AND DISTRIBUTION

PART 1 GENERAL

1.01 SUBMITTALS

A. PANELBOARDS

B. DISCONNECT SWITCHES

C. FUSES

PART 2 PRODUCTS

2.01 PANELBOARDS

A. CIRCUIT BREAKER TYPE AS DESCRIBED IN GENERAL ELECTRICAL NOTES. PANELBOARDS SHALL BE RATED FOR THE SHORT CIRCUIT INTERRUPTING CAPACITY INDICATED AND SERIES COMBINATION RATINGS MUST BE UL RECOGNIZED. LOAD CENTER TYPE PANELBOARDS ARE NOT ACCEPTABLE. APPROVED MANUFACTURERS ARE EATON-CUTLER HAMMER, ABB-GENERAL ELECTRIC, SIEMENS AND SQUARE D.

2.02 DISCONNECT SWITCHES

A. FUSIBLE OR NONFUSIBLE QUICK-MAKE, QUICK-BREAK, LOAD INTERRUPTER ENCLOSED CAM SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING DOOR" EXCEPT WITH SWITCH IN "OFF" POSITION. APPROVED MANUFACTURERS ARE EATON CUTLER HAMMER, ABB-GENERAL ELECTRIC, SIEMENS, AND SQUARE D.

2.03 FUSES

A. FUSES RATED ABOVE 600 AMPS SHALL BE UL CLASS L EQUAL TO BUSSMAN LOW-PEAK KRP-C. FUSES RATED AT 600 AMPS AND BELOW SHALL BE UL CLASS RK1 EQUAL TO BUSSMAN LOW-PEAK LPN-RK (250 VOLT) OR LPS-RK (600 VOLTS).

PART 3 EXECUTION

3.01 GENERAL

A. MAINTAIN CODE REQUIRED WORKING CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT. COORDINATE INSTALLATION WITH ARCHITECTURAL FEATURES, PIPING LOCATIONS, AND DUCTWORK.

B. ELECTRICAL EQUIPMENT SUCH AS PANELBOARDS, CONTROL PANELS, AND METER SOCKET ENCLOSURES, THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC HAZARDS PER NEC 110.16. THE MARKING SHALL BE LOCATED AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

3.02 PANELBOARDS

A. INSTALL NEW PANELBOARDS AS INDICATED.

B. ALL PANELS SHALL HAVE ENGRAVED PLASTIC LABELS AND TYPEWRITTEN DIRECTORIES. DIRECTORIES SHALL DESCRIBE LOAD FOR EACH BRANCH CIRCUIT.

SECTION 16500 LIGHTING

PART 1 GENERAL

1.01 SUBMITTALS

A. LIGHTING FIXTURES

PART 2 PRODUCTS

2.01 GENERAL

A. PROVIDE LIGHTING FIXTURES AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE OF SIZE, TYPES, WATTAGE, AND WITH FEATURES INDICATED. SUBSTITUTIONS SHALL BE EQUAL AS PERFORMANCE AND APPEARANCE TO FIXTURES LISTED.

B. SUBSTITUTE LIGHTING FIXTURES SHALL NOT INCREASE TOTAL LIGHTING LOAD IN WATTS.

C. FIXTURES SHALL BE COMPLETE WITH LAMPS, DRIVERS, BALLASTS, AND ALL PARTS, HARDWARE, AND ACCESSORIES FOR INSTALLATION AND PROPER OPERATION.

2.02 LAMPS

A. LIGHT EMITTING DIODE (LED) LAMPS

1. LUMEN OUTPUT ASSOCIATED WITH LED LIGHT FIXTURES SHALL BE MEASURED BY IESNA STANDARD LM-79-08 OR AN ACCREDITED LAB. EXACT RATED LUMEN OUTPUT SHALL BE CLEARLY NOTED ON SUBMITTALS.

2. INDIVIDUAL LEDS SHALL BE CONNECTED SUCH THAT CATASTROPHIC LOSS OR THE FAILURE OF ONE LED WILL NOT RESULT IN THE LOSS OF THE ENTIRE LUMINAIRE.

2.24 EMERGENCY LIGHTING BATTERY UNITS

A. MINIMUM 1500 LUMENS

PART 3 EXECUTION

3.01 GENERAL

A. INSTALL FIXTURES AS INDICATED ON DRAWINGS. REFER TO REFLECTED CEILING PLAN FOR EXACT LOCATIONS.

END OF ELECTRICAL SPECIFICATIONS

GENERAL ELECTRICAL NOTES

1. ARE PROJECT SITE BEFORE SUBMISSION OF BID AND BECOME FAMILIAR WITH EXISTING CONDITIONS AND LOCATIONS OF UTILITIES.

2. COORDINATE INSTALLATION OF NEW 120/240 VOLT, SINGLE PHASE, 3-WIRE, 200AMP UNDERGROUND ELECTRICAL SERVICE WITH LOCAL ELECTRIC UTILITY COMPANY. PROVIDE TRANSFORMER, CONDUIT, METER BASE, AND OTHER ITEMS AS REQUIRED.

3. CONTROL PANEL IS TO INCLUDE ALL MOTOR STARTERS, CONTROL RELAYS, TERMINAL STRIPS AND OTHER DEVICES AS REQUIRED.

4. VERIFY ELECTRICAL POWER REQUIREMENTS FOR ALL EQUIPMENT. ARRANGE CIRCUITS AND PANELS TO BE IN ACCORDANCE WITH SMALLEY'S/EQUIPMENT RECOMMENDATIONS.

5. PROVIDE SURGE PROTECTIVE DEVICES (SPD) AT PANELBOARDS AS INDICATED. SPD EQUIPMENT TO BE RATED FOR VOLTAGE PHASE TO NEUTRAL AND PHASE TO PHASE AT SERVICE ENTRANCE AND 80,000 AMPS PER MODE SURGE AT OTHER PANELBOARDS. CLAMPING VOLTAGE TO BE 400 VOLTS.

6. PROVIDE A 120/240V, SINGLE PHASE PANELBOARD WITH 225A MAIN BREAKER, SERVICE ENTRANCE RATED, EQUAL TO SQUARE D, OR APPROVED EQUAL. MOUNT FLUSH IN WALL. COORDINATE REQUIRED NO. BREAKERS WITH ENGINEER. PANEL SHALL INCLUDE (1) 100A 2-POLE BREAKER FOR CONTROL PANEL, (1) 20A 2-POLE BREAKER FOR ELMCE PROTECTION DEVICE, (1) 20A, 2-POLE BREAKER FOR UNIT HEATER, (1) 15A, SINGLE POLE BREAKER FOR EXHAUST FAN AND (16) 20A, SINGLE POLE BREAKERS FOR RECEPTACLES, LIGHTS AND UV UNITS. PROVIDE ADDITIONAL BREAKERS AS REQUIRED.

7. INTERIOR LIGHTING FIXTURES SHALL BE LED, 4 FEET LONG, 3000 LUMENS, 3000K, MEDIUM DISTRIBUTION, NON-METALLIC HOUSING, BRUSHED AND LOCK, LITHONIA FOR SERIES OF APPROVED EQUAL. STEM MOUNT FIXTURES AT 8'-0" ABOVE FLOOR.

8. EXTERIOR LIGHTING FIXTURES SHALL BE LED, 1470 LUMENS, 5000K, WALL MOUNTED, INTEGRAL PHOTOSENSOR, LITHONIA THE LED SERIES OR APPROVED EQUAL. MOUNT FIXTURES AT 8'-0" ABOVE FLOOR WITH ONE FIXTURE OVER DOOR AND ONE FIXTURE ON SIDE OF BUILDING FACING SAND FILTER.

9. PROVIDE WEATHERPROOF WAYDAY ON EXTERIOR OF BUILDING. POWER CONDUITS FOR PUMPS AND CONTROL CONDUITS ASSOCIATED WITH EXTERIOR RECIRC. TANK AND EFFLUENT TANK TO BE ROUTED TO THIS WAYDAY. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROLS FROM WAYDAY TO CONTROL PANEL. SEAL WAYDAY AS REQUIRED.

10. PROVIDE (2) #12, #12G IN 3/4" CONDUIT TO 20A, SINGLE POLE BREAKER IN PANEL "A".

11. PROVIDE (3) #12, #12G IN 3/4" CONDUIT TO 20A, SINGLE POLE BREAKER IN PANEL "A" TO EACH OF THE (2) RECEPTACLES FOR UV UNITS.

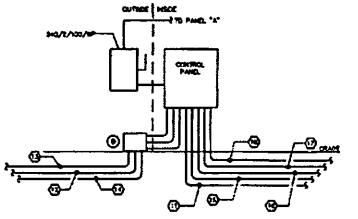
12. PROVIDE (3) #12, #12G IN 3/4" CONDUIT TO 15A, SINGLE POLE BREAKER IN PANEL "A". COORDINATE INTERLOCKING BETWEEN EXHAUST FAN AND INTAKE LOUVER WITH APPROVED SHOP DRAWINGS.

13. PROVIDE (3) #12, #12G IN 3/4" CONDUIT TO 20A, 2-POLE BREAKER IN PANEL "A".

14. PROVIDE (3) #3, #8G IN 1-1/4" CONDUIT FROM CONTROL PANEL TO 100A, 240V, 2-POLE, WEATHERPROOF DISCONNECT MOUNTED ON EXTERIOR OF BUILDING.

15. PROVIDE (3) #3, #8G IN 1-1/4" CONDUIT FROM 100A, 240V, 2-POLE, WEATHERPROOF DISCONNECT TO 80A, 2-POLE BREAKER IN PANEL "A".

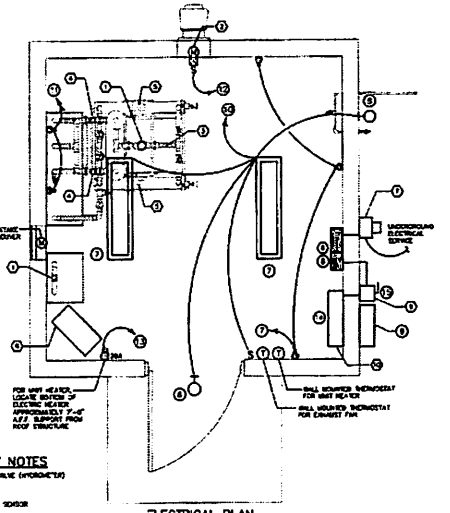
16. INSTALL AND BOND TOGETHER, (2) GROUND RODS ARRANGED IN A TRIANGLE SPOT, APART (DRIVE GROUND RODS ON BENDS IN AIR UNCONCRETE, UNPAVED AREA AS NEAR AS POSSIBLE TO ELECTRICAL SERVICE ENTRANCE. ALL BONDS SHALL BE EXOTHERMIC TYPE 2 SEAL CONFORMS PREVENT INSTALLATION OF GROUND RODS COORDINATE WITH ENGINEER.



CONTROL PANEL DETAIL
NO SCALE

ELECTRICAL LEGEND

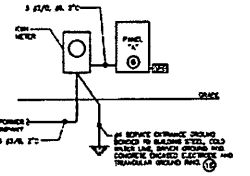
- CONDUIT RUN CONCEALED IN WALL, CEILING, OR FLOOR
- CONDUIT RUN, CONCEALED IN FLOOR OR UNDERGROUND
- HOMERUN TO PANEL INDICATED
- RECEPTACLE, DUPLEX, 120V, 15A. UNO, @ 18" AFF TO BOTTOM
- SWITCH, SINGLE POLE, 120/277V, 20A, 45" AFF TO BOTTOM
- DISCONNECT SWITCH, NON-FUSED, DESIGNED BY: VOLTAGE RATING/NO. OF POLES/SWITCH SIZE IN AMPS
- DISCONNECT SWITCH, FUSED, DESIGNED BY: VOLTAGE RATING/NO. OF POLES/FUSE SIZE IN AMPS
- MOTOR, MOTOR STARTING, MANUAL, SIZE AS NECESSARY
- MOTOR STARTER, MAGNETIC, SIZE AS REQUIRED
- MOTOR, SEE PANEL SCHEDULE FOR SIZE AND SERVICE
- SOLENOID VALVE, BY OTHERS.
- LIGHTING FIXTURES SEE FIXTURE SCHEDULE
- REFER TO NOTE INDICATED
- SURGE PROTECTION DEVICE
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- EF EXHAUST FAN
- GFI GROUND FAULT INTERRUPTER
- UH HEATING UNIT



ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

CONTROL PANEL KEY NOTES

1. 2" METER WITH SOLENOID CONTROL VALVE (HYDROMETER)
2. EXHAUST FAN
3. 2" TEE WITH TRANSDUCER PRESSURE SENSOR
4. 2" 3-WAY SOLENOID CONTROL VALVE
5. SANITRON UV DISINFECTION UNIT
6. CEILING MOUNTED UNIT HEATER
7. KWH METER
8. PANEL "A"
9. PUMP CONTROL PANEL DISCONNECT
10. PUMP CONTROL PANEL
11. (1) 3/4"C, WITH (2) #4, #4G, TO DISCHARGE FLOW METER.
12. (NO) 3/4"C, EACH WITH PULL-STRINGS FOR RECIRC. PUMPS 1-6 AND DOSING PUMPS 1,2.
13. (3) 1"C, EACH WITH (3) #4, #4G TO SOLENOID VALVES ON DOSING LINE.
14. (2) 3/4"C, EACH WITH PULL-STRINGS FOR FLOAT SWITCHES IN EFFLUENT DOSING TANK AND RECIRC. TANK.
15. (1) 1"C, EACH WITH (4) #4, #4G TO (3) SOLENOID VALVES IN VICINITY OF U.V. DISINFECTION UNIT.
16. (1) 3/4"C WITH 2/C #16 STP TO PRESSURE SENSOR
17. (2) 3/4"C, EACH WITH (2) #12, #12G TO DISINFECTION UNIT POWER CONNECTION.
18. (1) 3/4"C WITH (3) #4, #4G TO DRIP FIELD FLUSH SOLENOID CONTROL VALVE.



POWER RISER DIAGRAM
NO SCALE

COORDINATE WITH LOCAL UTILITY AND CODES DEPARTMENT FOR EXACT SERVICE REQUIREMENTS. PROVIDE METER SOCKET/NOTCH AND EXTERIOR SERVICE DISCONNECTS AS NEEDED.

UNIT HEATER SCHEDULE

EQUIP. NO.	SERVICE	MANUFACTURER, MODEL	MOUNTING		SIZE IN	VOLTS/PH	FAN HP	INPUT KW (MBH)	COMMENTS/NOTES
			A" / FLOOR	B" / CEILING					
EUH-1	VT BUILDING	TPE 4TB0812	8.0	9.0	8in	240/1	1/2 HP	12	NOTES 1,2,3,4,5,6,7,8,9,10,11,12

NOTES: 1. MOUNT PER MANUFACTURER'S RECOMMENDATIONS AND MANUFACTURER'S RECOMMENDATIONS. 2. INTERNAL DISCONNECT PROVIDED FACTORY WILL INSTALL BY OTHERS.

SHUTTER/LOUVER SCHEDULE

EQUIP. NO.	SERVICE	MANUFACTURER, MODEL	SIZE (W'-I" x H'-I")	CFM	VELOCITY / PRESS. DROP	FREE AREA (%)	COMMENTS/NOTES
L1	MAIN LOUVER-27-1	YCH MD 50 ALUM.	12'-0" x 12'-0"	3,00 10 4000	900/025	50%	NOTES 1,2,3,4,5,6,7,8,9,10,11,12

NOTES: 1. PROVIDE WITH SCREEN FOR BIRDS AND AIR BORNE INSECTS. 2. PROVIDE WEATHER LOUVER. 3. PROVIDE CHEMICALLY RESISTANT PAINT FINISH.

EXHAUST & SUPPLY FAN SCHEDULE

EQUIP. NO.	SERVICE	MANUFACTURER, MODEL	CFM	HP	VOLTS/PH	BACKDRAFT DAMPER	WEIGHT (LBS)	COMMENTS/NOTES
EF-1	MY BUILDING	GREEN TURBINES	300	1/6	120/1	YES	20	NOTES 1,2,3,4,5,6,7,8,9,10,11,12

NOTES: 1. PROVIDE HEAVIER PAINT TO BE SCRIPE WALL BRAND TEAM

SAND FILTER PROTOTYPICAL PLAN (REVISED 3/29/19)

DESIGNED	DVR
DRAWN	DVR
CHECKED	AJP
DATE	MAR. 2019
SCALE	AS NOTED
PROJECT NO.	07182
SHEET	E1

SITE ENGINEERING CONSULTANTS
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SEC, Inc.
830 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
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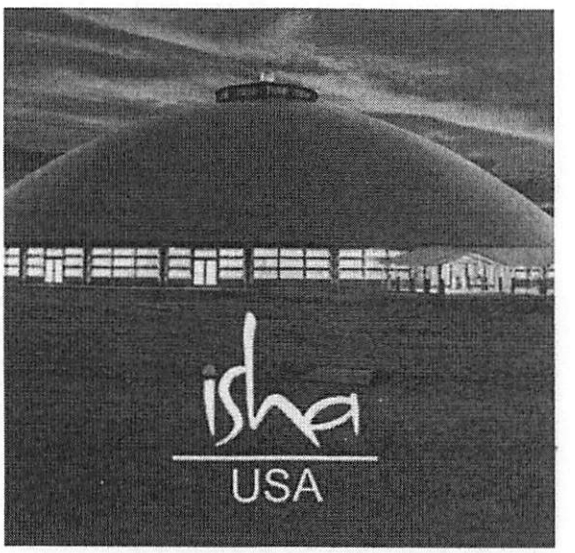
JAMES F. REED III — LICENSED PROFESSIONAL ENGINEER — STATE OF TENNESSEE

Isha Studios
Wastewater Treatment, STEP System, Collection, & Drip Dispersal Plans
Van Buren County, Tennessee

Details

DESIGNED	
DRAWN	
CHECKED	
DATE	7-10-2022
CHECKED	
BAT	
FILE NAME	20060STEP
SCALE	None
JOB NO.	20060
SHEET	C3.9

EXHIBIT C
APPLICATION FOR DRAFT STATE OPERATING PERMIT



STATE OPERATING PERMIT APPLICATION SOP

ISHA Studios Treatment Facility
Recirculating Media Filter & Drip Dispersal
951 ISHA Lane

IRM Utility
Van Buren County, TN

Updated 6-16-22

SEC, Inc.
SITE ENGINEERING CONSULTANTS
ENGINEERING • SURVEYING • LAND PLANNING
850 MIDDLE TENNESSEE BLVD • MURFREESBORO, TENNESSEE 37129
PHONE (615) 890-7901
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JAMES F. REED III
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 109038
STATE OF TENNESSEE
5-5-22

SEC Project No. 20060

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1.0 SOP Permit Application

Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102
(615) 532-0625

APPLICATION FOR A STATE OPERATION PERMIT (SOP)

Type of application: ☒ New Permit ☐ Permit Reissuance ☐ Permit Modification

Permittee Identification: (Name of city, town, industry, corporation, individual, etc., applying, according to the provisions of Tennessee Code Annotated Section 69-3-108 and Regulations of the Tennessee Water Quality Control Board.)

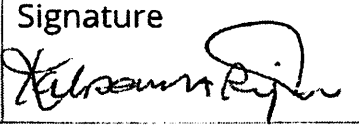
Permittee Name (applicant):	**ISHA Foundation**
Permittee Address:	**951 ISHA Lane, McMinnville, TN**

Official Contact: **Saran Subramanian**	Title or Position:		
Mailing Address: **951 Isha Lane**	City: **McMinnville**	State: **TN**	Zip: **37110**
Phone number(s): **931-636-3087**	E-mail: **saran@ishausa.org**		

Optional Contact: **Jeffrey W. Cox Jr.**	Title or Position: **Vice President**		
Address: **7709 Edwards Pl Blvd**	City: **Corryton**	State: **TN**	Zip: **37721**
Phone number(s): **865 712 4307**	E-mail: IRMUtility@gmail.com		

Application Certification (must be signed in accordance with the requirements of Rule 0400-40-05-.05)

I certify under penalty of law that this document and all attachments were prepared 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, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Name and title; print or type	Signature	Date
KALPANA H. RAJDEV. PRESIDENT		6-21-2022

Permit Number: SOP-_____

Facility Identification:		**Existing Permit No.**	
Facility Name:	**ISHA Studio Treatment Facility**	County:	**Van Buren**
Facility Address or Location:	**951 Isha Lane, McMinnville, TN**	Latitude:	**35º 34' 10"**
		Longitude:	**-85º 34' 04"**

Name and distance to nearest receiving waters: **Spring Creek**

If any other State or Federal Water/Wastewater Permits have been obtained for this site, list their permit numbers:
N/A

Name of company or governmental entity that will operate the permitted system: **IRM Utility Inc.**

Operator address: **3444 Saint Andrews Drive, Baneberry, TN**

Has the owner/operator filed for a Certificate of Convenience & Necessity (CCN), or an amended CCN, with the Tennessee Regulatory Authority (TRA) (may be required for collection systems and land application treatment systems)? ☐ Yes ☐ No ☒ N/A

If the applicant listed above does not yet own the facility/site or if the applicant will not be the operator, explain how and when the ownership will be transferred or describe the contractual arrangement and renewal terms of the contract for operations.
N/A

Complete the following information explaining the entity type, number of design units, and daily design wastewater flow:

Entity Type	Number of Design Units		Flow (gpd)
☐ City, town or county	No. of connections:		
☐ Subdivision	No. of homes:	Avg. No. bedrooms per home:	
☐ School	No. of students:	Size of cafeteria(s): No. of showers:	
☐ Apartment	No. of units:	No. units with Washer/Dryer hookups: No. units without W/D hookups:	
☐ Commercial Business	No. of employees:	Type of business:	
☐ Industry	No. of employees:	Product(s) manufactured:	
☐ Resort	No. of units:		
☐ Camp	No. of hookups:		
☐ RV Park	No. of hookups:	No. of dump stations:	
☐ Car Wash	No. of bays:		
☒ Other		**Res studios apts & community bldg**	**115,250gpd**

Describe the type and frequency of activities that result in wastewater generation.
Regional Treatment Facility - Typical Residential Sanitary Sewer

Permit Number: SOP-_____

Engineering Report (required for collection systems and/or land application treatment systems):	☐ N/A
☐ Prepared in accordance with Rule 0400-40-05-.03 and Section 1.2 of the State of Tennessee Design Criteria for Sewage Works ☒ Attached, or ☐ Previously submitted and entitled: Approved? ☐ Yes. Date: ☐ No Operation and Maintenance Inspection Schedule Submitted: Approved? ☐ Yes. Date: ☐ No	

Wastewater Collection System:	☐ N/A
System type (i.e., gravity, low pressure, vacuum, combination, etc.): Septic tank effluent with small diameter gravity/pressure collection	
System Description: SDR 17 PVC pressure pipe ranging from 3"Ø to 8"Ø and required fittings	
Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.): Cellular Telemetry Notification	
In the event of a system failure describe means of operator notification: Cellular Telemetry Notification	
List the **emergency** contact(s) (name/phone): Billy Cox - 865 712 4307	
For low-pressure systems, who is responsible for maintenance of STEP/STEG tanks and pumps or grinder pumps (list all contact information)? **IRM Utility Inc**	
Approximate length of sewer (excluding private service lateral): As required	
Number/hp of lift stations: As required/0.5 HP Number/hp of lift pumps /	
Number/volume of low pressure and or grinder pump tanks / Number/volume septic tanks as needed/varies	
Attach a schematic of the collection system. ☒ Attached	
If this is a satellite sewer and you are tying into another sewer system complete the following section, listing tie-in points to the sewer system and their location (attach additional sheets as necessary):	

Tie-in Point	Latitude (xx.xxxx°)	Longitude (xx.xxxx°)
N/A		

Permit Number: SOP-_____

Land Application Treatment System:	☐ N/A
Type of Land Application Treatment System: ☒ Drip ☐ Spray ☐ Other, explain:	
Type of treatment facility preceding land application (recirculating media filters, lagoons, other, etc.): Recirculating Media Filter	
Attach a treatment schematic. ☒ Attached	
Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.): Cellular Telemetry Notification	
For New or Modified Projects: Name of Developer for the project: ISHA. c/o Mr. Saran Subramanian	
Developer address and phone number: 951 ISHA Lane, McMinnville, TN 37110 Saran 931-636-3087	
For land application, list: Proposed acreage involved: 20.0± Acres Inches/week gpd/sq.ft loading rate to be applied: 0.2 GPD/SF	
Is wastewater disinfection proposed?	
☐ Yes Describe land application area access:	
☒ No Describe how access to the land application area will be restricted: Fence	

Attach required additional Engineering Report Information (see website for more information)

☒ Topographic map (1:24,000 scale presented at a six inch by six-inch minimum size) showing the location of the project including quadrangle(s) name(s) GPS coordinates, and latitude and longitude in decimal degrees should also be included.

☒ Scaled layout of facility showing the following: lots, buildings, etc. being served, the wastewater collection system routes, the pretreatment system location, the proposed land application area(s), roads, property boundaries, and sensitive areas such as streams, lakes, springs, wells, wellhead protection areas, sinkholes and wetlands.

☒ Soils information for the proposed land disposal area in the form of a Water Resources Soils Map per Chapter 16 and 17 State of Tennessee Design Criteria for Sewage Work. The soils information should include soil depth (borings to a minimum of 4 feet or refusal) and soil profile description for each soil mapped.

☒ Topographic map of the area where the wastewater is to be land applied with no greater than ten-foot contours presented at a minimum size of 24 inches by 24 inches.

☐ Describe alternative application methods based on the following priority rating: (1) connection to a municipal/public sewer system, (2) connection to a conventional subsurface disposal system as regulated by the Division of Groundwater Protection, and/or (3) land application.

Permit Number: SOP-_____

For Drip Dispersal Systems Only: Unless otherwise determined by the Department, sewage treatment effluent wells, i.e, large capacity treatment/drip dispersal systems after approval of the SOP Application, will be issued an UIC tracking number and will be authorized as Permit by Rule per UIC Rule 0400-45-06-.14(2) and upon issue of a State Operating Permit and Sewage System Construction Approval by the Department. Describe the following:	☒ N/A
The area of review (AOR) for each Drip Dispersal System shall, unless otherwise specified by the Department, consist of the area lying within a one-mile radius or an area defined by using calculations under 0400-45-06-.09 of the Drip Dispersal System site or facility, and shall include, but not be limited to general surface geographic features, general subsurface geology, and general demographic and cultural features within the area. Attach to this part of the application a general characterization of the AOR, including the following: (This can be in narrative form)	
☐ A general description of all past and present groundwater uses as well as the general groundwater flow direction and general water quality.	
☐ A general description of the population and cultural development within the AOR (i.e. agricultural, commercial, residential or mixed)	
☐ Nature of injected fluid to include physical, chemical, biological or radiological characteristics.	
☐ If groundwater is used for drinking water within the area of review, then identify and locate on a topographic map all groundwater withdrawal points within the AOR, which supply public or private drinking water systems. Or supply map showing general location of publicly supplied water for the area (this can be obtained from the water provider)	
☐ If the proposed system is located within a wellhead protection area or source water protection area designated by Rule 0400-45-01-.34, show the boundary of the protection area on the facility site plan.	
☐ Description of system, Volume of injected fluid in gallons per day based upon design flow, including any monitoring wells	
☐ Nature and type of system, including installed dimensions of wells and construction materials	

Pump and Haul:	☒ N/A
Reason system cannot be served by public sewer:	
Distance to the nearest manhole where public sewer service is available:	
When sewer service will be available:	
Volume of holding tank: gal.	
Tennessee licensed septage hauler (attach copy of agreement):	
Facility accepting the septage (attach copy of acceptance letter):	
Latitude and Longitude (in decimal degrees) of approved manhole for discharge of septage:	
Describe methods to prevent and respond to any bypass of treatment or discharges (i.e., power failures, equipment failures, heavy rains, etc.):	

Permit Number: SOP-_____

Holding Ponds (for non-domestic wastewater only):	☒ N/A
Pond use: ☐ Recirculation ☐ Sedimentation ☐ Cooling ☐ Other (describe):	
Describe pond use and operation:	
If the pond(s) are existing pond(s), what was the previous use?	
Have you prepared a plan to dispose of rainfall in excess of evaporation? ☐ Yes ☐ No	
If so, describe disposal plan:	
Is the pond ever dewatered? ☐ Yes ☐ No	
If so, describe the purpose for dewatering and procedures for disposal of wastewater and/or sludge:	
Is(are) the pond(s) aerated? ☐ Yes ☐ No	
Volume of pond(s): gal. Dimensions:	
Is the pond lined (Note if this is a new pond system it must be lined for SOP coverage. Otherwise, you must apply for an Underground Injection Control permit.)? ☐ Yes ☐ No	
Describe the liner material (if soil liner is used give the compaction specifications):	
Is there an emergency overflow structure? ☐ Yes ☐ No	
If so, provide a design drawing of structure.	
Are monitoring wells or lysimeters installed near or around the pond(s)? ☐ Yes ☐ No	
If so, provide location information and describe monitoring protocols (attach additional sheets as necessary):	

Permit Number: SOP-_____

Mobile Wash Operations: ☒ N/A

☐ Individual Operator ☐ Fleet Operation Operator

Indicate the type of equipment, vehicle, or structure to be washed during normal operations (check all that apply):

☐ Cars
☐ Trucks
☐ Trailers (Interior washing of dump-trailers, or tanks, is prohibited.)
☐ Other (describe):
☐ Parking Lot(s): sq. ft.
☐ Windows: sq. ft.
☐ Structures (describe):

Wash operations take place at (check all that apply):

☐ Car sales lot(s)
☐ Private industry lot(s)
☐ County(ies), list:
☐ Public parking lot(s)
☐ Private property(ies)
☐ Statewide

Wash equipment description:

☐ Truck mounted
☐ Rinse tank size(s) (gal.):
☐ Collection tank size(s) (gal.):
☐ Trailer mounted
☐ Mixed tanks size(s) (gal.):
Number of tanks per vehicle:

Pressure washer: psi (rated) gpm (rated)
☐ gas powered ☐ electric

Vacuum system manufacturer/model: Vacuum system capacity: inches Hg

Describe any other method or system used to contain and collect wastewater:

List the public sewer system where you are permitted or have written permission to discharge waste wash water (include a copy of the permit or permission letter):

Are chemicals pre-mixed, prior to arriving at wash location? ☐ Yes ☐ No

Describe all soaps, detergents, or other chemicals used in the wash operation (attach additional sheets as necessary):

Chemical name:	Manufacturer:	Primary CAS No. or Product No.

APPLICATION FOR A STATE OPERATION PERMIT (SOP)
INSTRUCTIONS

Purpose of this form A completed SOP application must be submitted to obtain SOP coverage. This permit is required to operate a sewage, industrial waste or other waste collection and/or treatment system that does not have a point source discharge to any surface or subsurface waters. This form must be submitted at least 180 days before starting any new activity, before an existing permit expires, or when renewing a permit.

Complete the form Type or print clearly, using black or blue ink; not markers or pencil. Answer each item or enter "N/A," for not applicable. If you need additional space, attach a separate piece of paper to the SOP application. Applicants may be required to submit engineering reports, plans and specifications. Contact the division for the applicable items, or refer to Appendix 1-D of the state Design Criteria for Sewage Works for more information. **The application will be considered incomplete without supplying all of the required information, Engineering Reports, and an original signature.**

Permittee Identification/Facility Identification Describe and locate the project, use the legal or official name of the facility or site. Provide the latitude and longitude (expressed in decimal degrees) of the center of the site, which can be located on USGS quadrangle maps. The quadrangle maps can be obtained at 1-800-USA-MAPS, or at the Census Bureau world wide web site: http://www.census.gov/cgi-bin/gazetteer. Attach a copy of a portion of a 7.5-minute quad map, showing location of site, with boundaries at least one mile outside the site boundaries. If business is mobile give the owner of operations' home, or business office address, and list all current areas of operation by city and county.

Wastewater Collection System These types of systems require engineering reports, refer to Appendix 1-D of the state Design Criteria for Sewage Works for more information.

Land Application Treatment System These types of systems require engineering reports, refer to Appendix 1-D of the state Design Criteria for Sewage Works for more information. Public access to the treatment area must be restricted, if disinfection is not part of the treatment. Applicants completing this section of the application must also complete the Wastewater Collection System section.

Pump and Haul These types of systems may require engineering reports, refer to Appendix 1-D of the state Design Criteria for Sewage Works for more information.

Holding Ponds Given that annual rainfall onto open ponds exceeds annual evaporation (in Tennessee), the permittee must develop a written plan (to be retained on site and be available to the division upon request) that addresses how excess rainfall will be disposed of in compliance with the no discharge requirement of this permit. Treatment ponds are not to be used for stormwater treatment or storage. All new and existing point source industrial stormwater discharges associated with industrial activity require coverage under the

APPLICATION FOR A STATE OPERATION PERMIT (SOP)
INSTRUCTIONS - CONTINUED

Tennessee industrial stormwater multi-sector general permit TMSP, refer to the website for more information. Describe the system for re-routing surface runoff away from ponds in the rainfall disposal plan.

Mobile Wash Operations Indicate whether the operation is run by an individual or a corporation with a fleet of vehicles equipped to wash and collect waste waters. If a corporation, indicate the home office as the "Official Contact". Indicate if operations take place at specific sites and list those counties that apply. Note that this permit covers operations for all of Tennessee. Operations indicated as "statewide" generally apply as a fleet type operation and each office location shall be individually permitted. Equipment may be truck or trailer-mounted, or both, indicate all that applies. Soaps, detergents, and other chemicals used should be non-toxic and biodegradable. All "chemically enhanced" (soaps, detergents, and other chemicals) waste-wash waters must be collected for proper disposal. If no chemically enhanced washwaters are used, clear-wash waters may travel by sheet flow to a gravel or grassy area where there is no opportunity to enter waters of the state. There should be no discharge to a storm water inlet, ditch, conveyance, stream, etc. If you are unsure of your wash area drainage, contact the area Environmental Field Office (EFO) prior to setting up your wash operation.

Fees Refer to the TDEC-DWR Environmental Protection Fund Fee Rule 0400-40-11-.02. Links to publications are available on Department of Environment and Conservation, Division of Water Resources webpage and the webpage for the Tennessee Secretary of State.

Submitting the form and obtaining more information Note that this form must be signed by the chief executive officer, owner, or highest-ranking elected official. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit a complete application electronically to water.permits@tn.gov (preferred) or to the appropriate EFO for the county(ies) where the facility is located, addressed to **Attention: DWR, Permit Section.** Please keep a copy for your records.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Barlett	38133	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Dr	38305-4316	Chattanooga	1301 Riverfront Parkway Suite 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

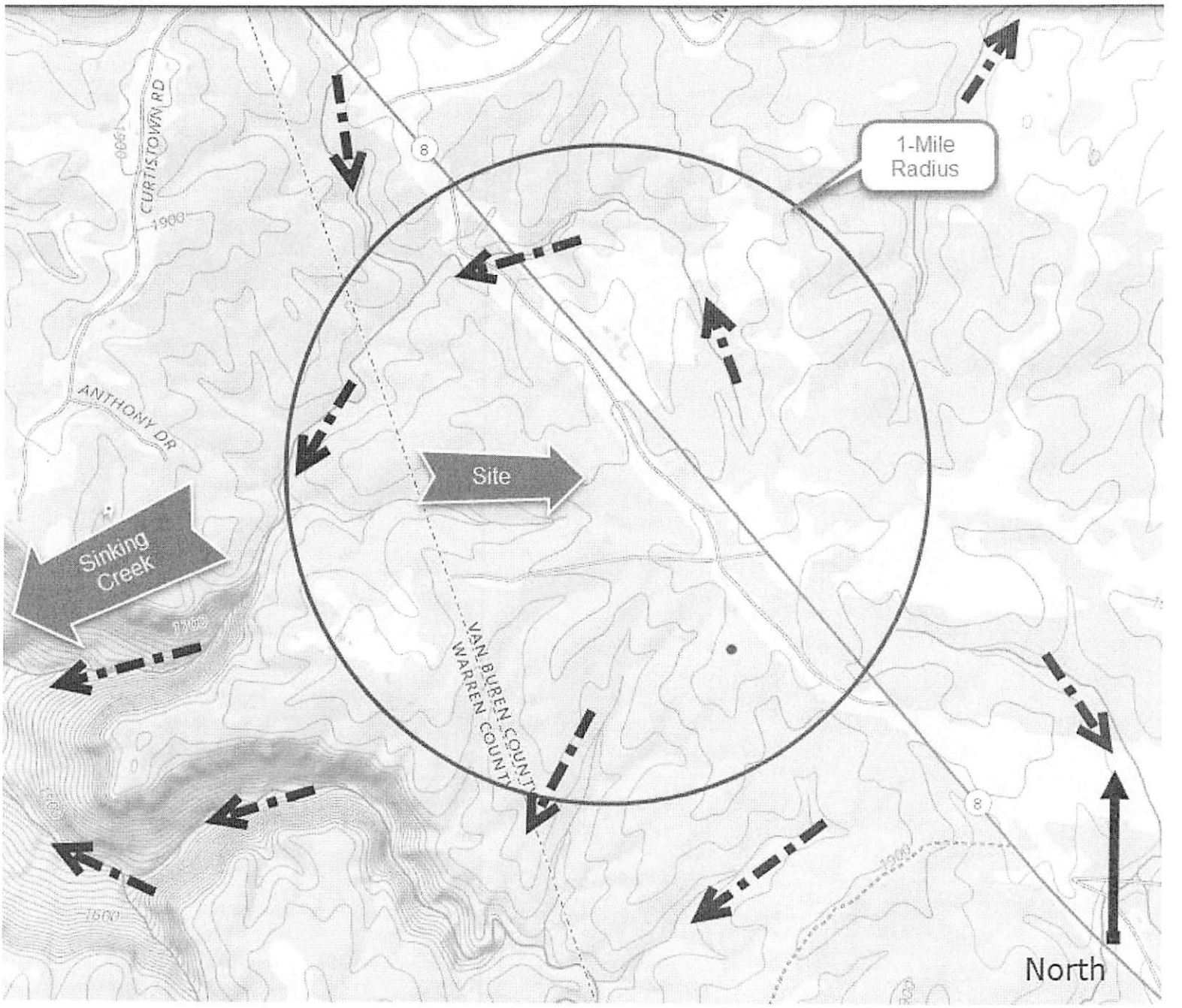
APPLICATION FOR A STATE OPERATION PERMIT (SOP)
INSTRUCTIONS - CONTINUED

Upon receipt of the required items, the division conducts a review of the material, and the applicant is notified of any deficiencies. When all the deficiencies have been corrected, the division makes a determination of whether to publish a draft permit. When a draft permit is generated, a public notice is issued and published in a local newspaper. The draft permit is then reviewed by the applicant, and division field staff. The general public also has an opportunity to review the permit. Based on public response, a public hearing may be held. After considering public comments and a final review, the permit may be issued. The entire process normally takes from five (5) to nine (9) months. Permits are normally valid for five (5) years, except those for pump and haul systems, which are generally valid for one (1) year.

The division has the right to inspect a facility when deemed necessary. In addition, the division has the right to revoke or suspend any permit for violation of permit conditions or any other provisions of the Tennessee Water Quality Control Act and other water pollution control rules.

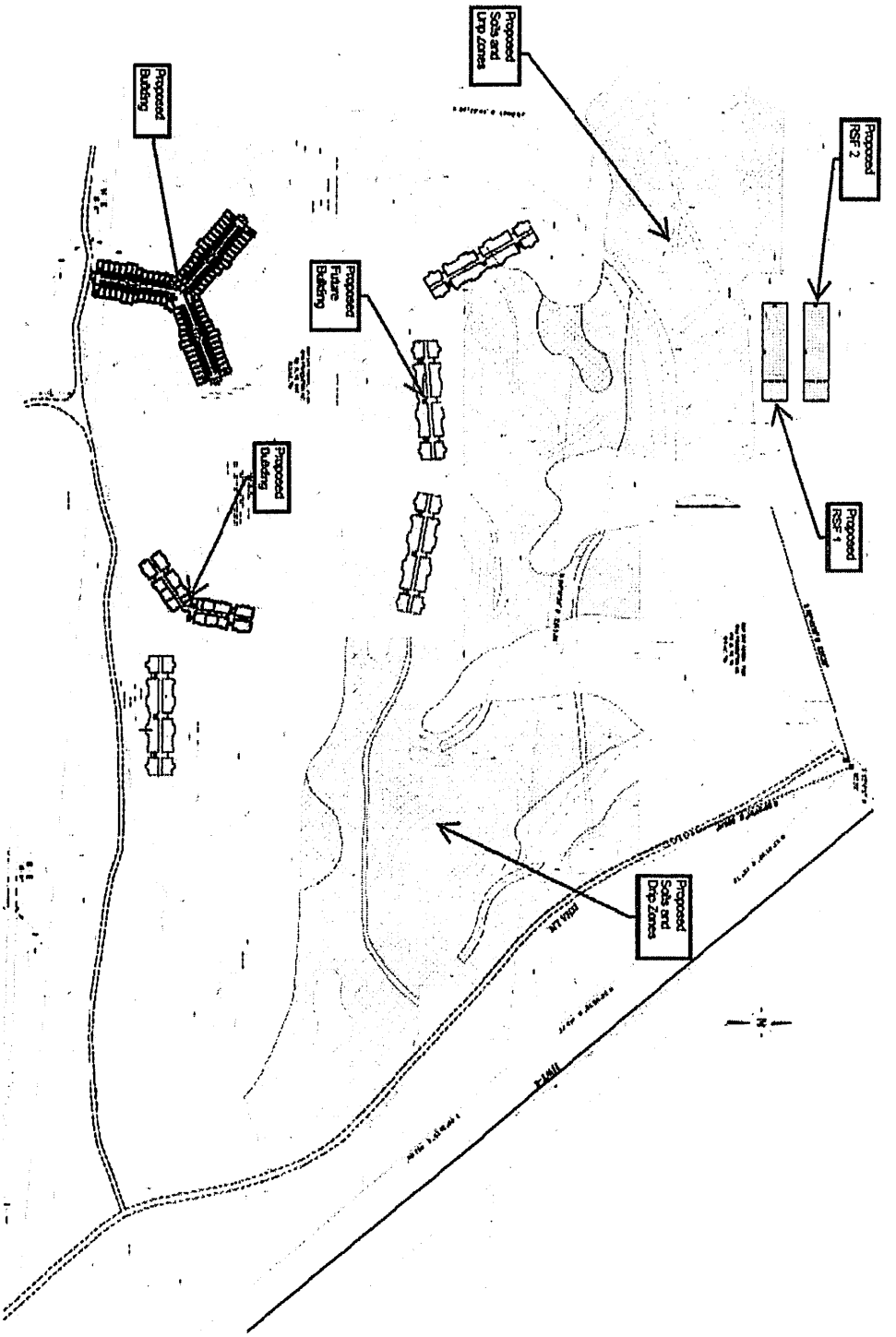
The division is responsible for regulating any activity, which involves a potential discharge in order to protect waters of the State from pollution and to maintain the highest possible standards in water quality.

2.0 Area of Review



Area of Review

SEC Project No. 20060

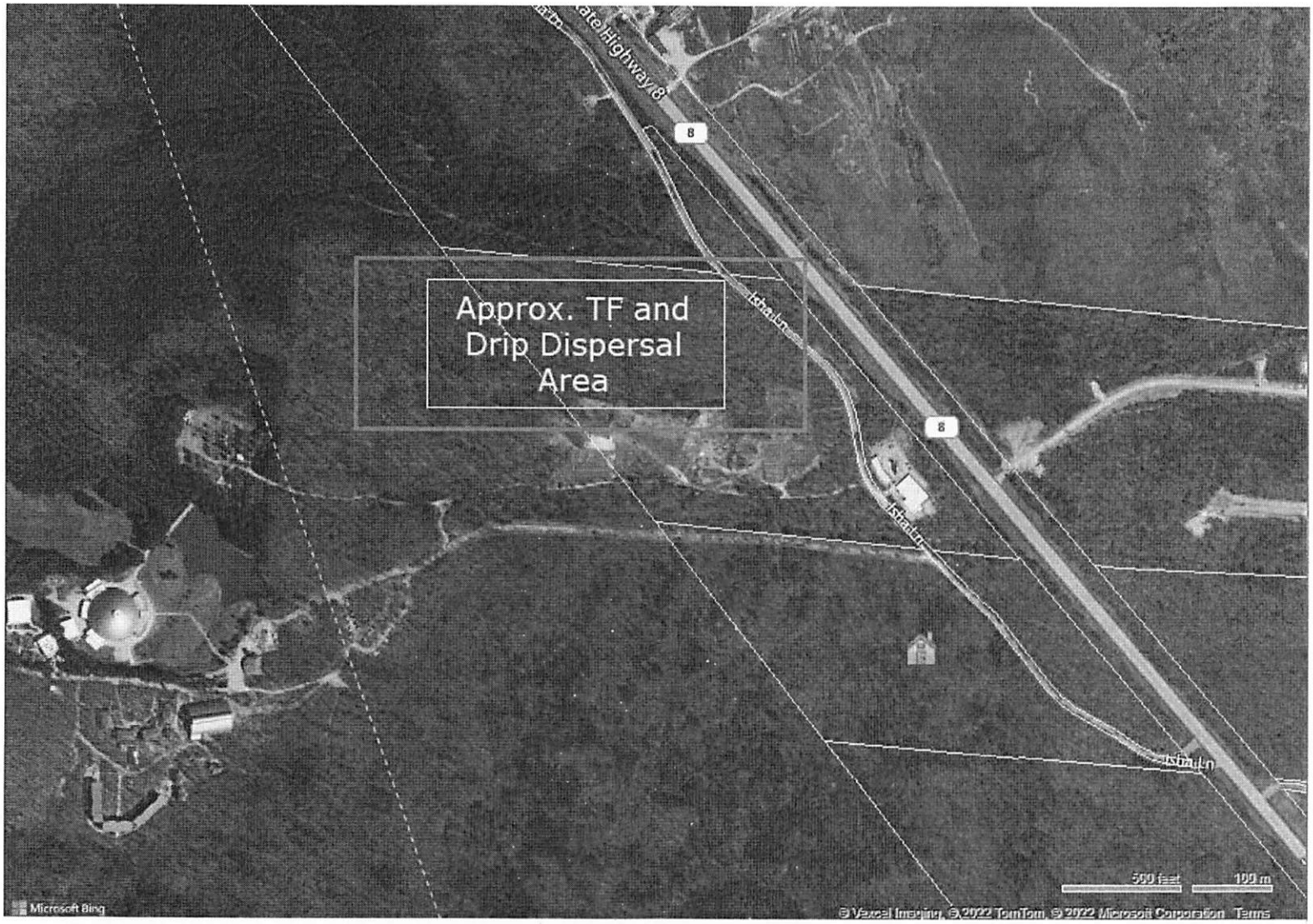


Master Plan With Lidar Top

SEC Project No. 20060

FEMA MAP
100-Year Floodplain

SEC Project No. 20060



Aerial Map

SEC Project No. 20060

3.0 Groundwater General Description

The attached USGS maps indicate the ISHA Studio Drip Dispersal Expansion area drainage flow path is to the southwest to Spring Creek watershed. See attached maps.

4.0 Population General Description

The majority of the Area of Review is agricultural land used primarily for pasture and large lot residential. Sparse residential subdivisions have been developed but remain spread out due to the lack of wastewater service. See attached aerial map of property.

5.0 Nature of Fluid

ISHA Studio TF is currently designed to accommodate typical residential sanitary wastewater effluent after primary treatment has been accomplished by the interceptor tank(s) at the source.

ISHA Studio TF Drip Dispersal Expansion will have a peak design discharge of approximately 115,250 gpd.

6.0 General Location of Publicly Supplied Water

Warren County Utility District supplies public drinking water within the AOR.

Warren County Utility District
4034 Sparta Hwy, McMinnville, TN 37110
Warren County Utility District Information (931) 668-4175

7.0 Description of System

Treated wastewater approximately 115,250 gpd is pumped and distributed to HDPE drip lines with pressure compensating emitters. The drip lines are to be installed on 5-foot centers along the contours with the emitters spaced at 2-foot centers along the drip lines. Drip lines are plowed into the soils that have been approved by a certified soil scientist and placed at an approximate depth of 7-8 inches below the ground surface. Distribution of the treated wastewater is managed through solenoid valves and controlled by a programmable PLC.

Daily Flow	
5 -126 Bedroom Condo Design Flow	
Number of Bedrooms	630.0 bedrooms
Daily Flow for 3-BR	100 gpd/br
Design Daily Flow	63,000 gpd
Studio 3 - 500 rooms	
Number of Bedrooms	500.0 bedrooms
Daily Flow for 3-BR	100 gpd/br
Design Daily Flow	50,000 gpd
Total Design Daily Flow	113,000 gpd
Admin Bldg - 10,000 sf - 50 persons	
Number of emploees / quest	50.0 person
Daily Flow per person	15 gpd/person
Design Daily Flow	750 gpd
Total Design Daily Flow	113,750 gpd
Welcome Center - 10,000 sf	
Number of emploees / quest	100.0 person
Daily Flow per person	15 gpd/person
Design Daily Flow	1,500 gpd
Total Design Daily Flow	115,250 gpd

Land Application Area

Land Application Area	0.2 gal/sf/day*
Total Area Required	576250 s.f.
or	13.23 acres

* assummed soil absorption rate

Number of Required Zones

Length per zone (@ 5' o.c.)	3840 L.F.
Number of Zones	30.0 Zones
Total Length	115250 L.F.

Land Reserve Area	
Area per lot	50% S.F./lot
Total Area Required	288125 acres
or	6.61 acres
Total Area Required	864375 s.f.
Total Area Required	19.84 acres

Sand Filter Size

5 gal/S.F./day	
115,250 gpd	
Area Req'd	23,050 S.F.
Use Filter No.	2-55' x 225'

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8.0 Nature and Type of System

The ISHA Studio TF designed for 115,250 GPD wastewater treatment capacity. A Recirculating Media Filter (RMF) 2-(225'x55') will be added as the primary treatment.

Disposal Capacity: This application is proposing to allow for drip disposal soils for land application for approximately 115,250 LF of drip disposal lines (30 zones at 3,840 LF per zone)

9.0 Flow Schematic

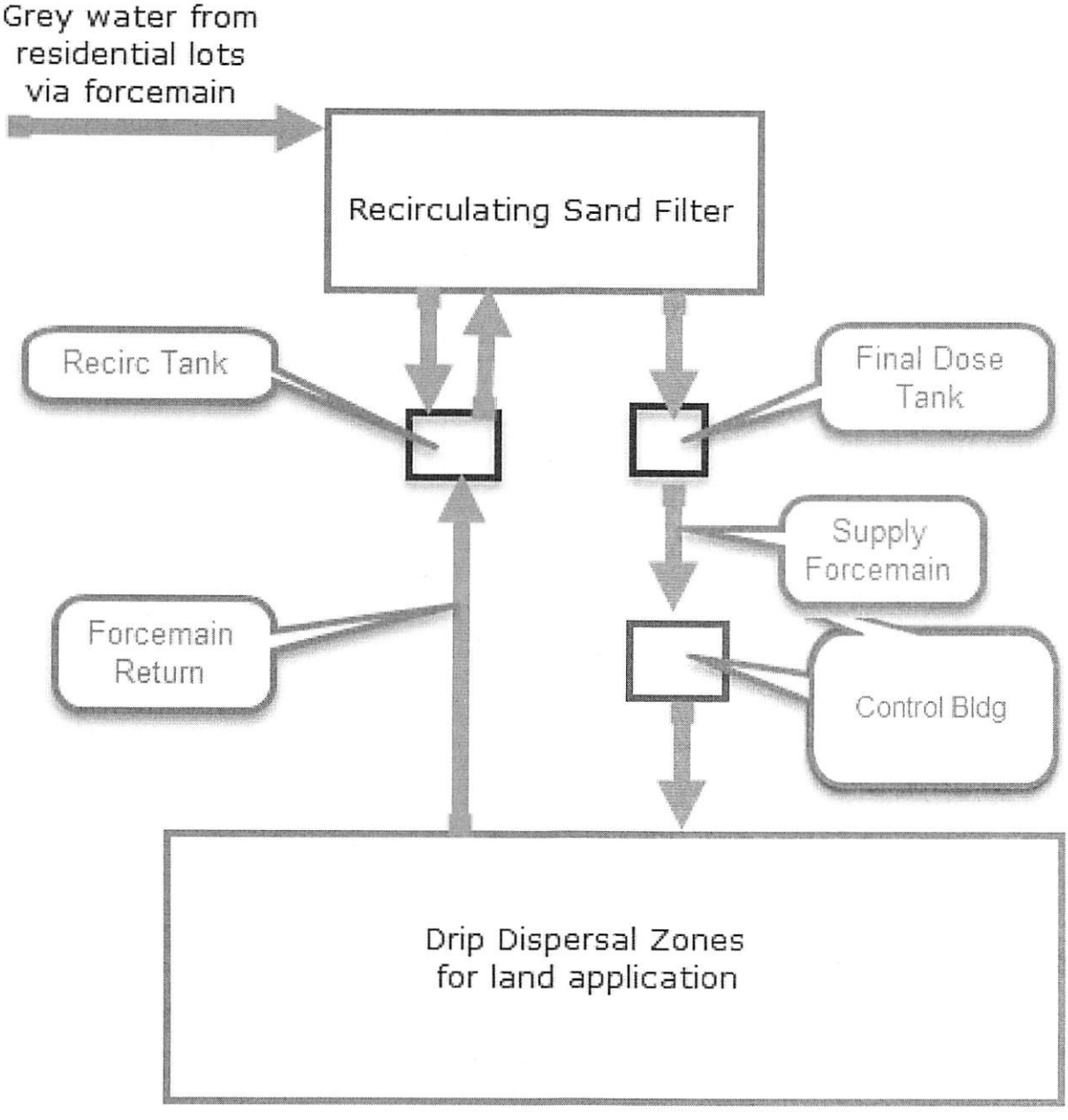

EXHIBIT D

LETTER FROM JAMIE REED P.E., R.L.S. DATED OCTOBER 12, 2022

Preliminary Project Discussion for Sewage Works Construction Projects

Background Information

Engineer/ Owner

Project Name: **ISHA Studios TF**

NPDES or SOP Number (if existing):

A. Identification of parties
   a. Applicant **ISHA Foundation**
   b. Permittee **IRM Utilities Inc**
   c. Consulting Engineer **Jamie Reed P.E., R.L.S.**
   d. Funding Agencies (if applicable) None

B. Entity to sign off on compliance with local codes (i.e. building inspector) **IRM Utilities Inc**

C. Project Purpose and Objectives

The ISHA Studios Treatment Facility is located at 951 Isha Lane, McMinnville, TN. The ISHA Studios Treatment Facility is designed with an effluent limit of 115,250 gpd. It is the intention of Tennessee Wastewater to install a Recirculating Media Filter (RMF) Treatment System, 10,000-gal recirculation tank, 3,000-gal final dose tank, control building and 30 zones at 3840 LF/ per zone of drip dispersal as the land application for a total of 20 acres, to be installed on the existing treatment facility property. This facility will be designed to serve the sewage needs of the ISHA Studios service territory.

D. Map of general service area (see attached service territory map)
   a. Probable site and construction area **see pdf of plans**
   b. Adjacent properties **see pdf of plans**
   c. Significant waters of the State **See PER**
   d. Geological features **see pdf of plans**
   e. Property boundaries **see pdf of plans**

E. Existing Inflow and Infiltration **(see above) Proposed drip dispersal design flow 115,250 GPD**

F. Influent characteristics
   f. Last 12 MORs (if applicable) **none**
   g. Industrial dischargers **none**

G. System capacity
   h. Hydraulic
      i. Average Daily Dry Weather Flow – ADDWF
      ii. Average Daily Flow - ADF
      iii. Peak Flow **0.115 MGD**
      iv. Design Flow **0.115 MGD**
   i. Nutrient

i. Influent loads
   1. Average Daily Dry Weather Flow - ADDWF
   2. Average Daily Flow – ADF **0.115 MGD**
   3. Design Flow **0.115 MGD**

j. Treatment/ Conveyance
   i. Accommodation of variability of loads **drip dispersal no direct discharge**

H. Procurement methodology
   k. Design-bid-build **No**
   l. Design build **No**
   m. Preselection of equipment/processes **IRM Utilities Inc will install per construction plans**
   a. Relationships of various agencies involved **Van Burren County Planning (planning authority), Warren County Utility District, TDEC (approvals)**
   n. How and when ownership/access/easements will be transferred to wastewater operational entity **currently exist**

I. Reliability class of components and electrical service
   o. Operator certification level **IRM Utilities Inc**
   p. Manpower requirements **1 person**

J. Proposed project schedule **projected start date July 2022**

K. Provide copy of PER if already prepared PDF **sent**

This 12th day of October, 2022

DocuSigned by:
James F Reed III
A6488EC885EC427...

Jamie Reed, P.E, R.L.S