

File #

1-B-21-VA



BOARD OF ZONING APPEALS APPLICATION

Click on [Meeting Schedule, Deadlines and Fees](#) for information on submitting an application to be heard at a monthly Board meeting.

APPLICANT INFORMATION	APPLICANT IS:	THIS PROPOSAL PERTAINS TO:
Name: Knoxville Utilities Board	Owner <input checked="" type="checkbox"/>	New Structure <input checked="" type="checkbox"/>
Street Address: 4505 Middlebrook Pike	Contractor <input type="checkbox"/>	Modification of Existing Structure <input type="checkbox"/>
City, State, Zip: Knoxville, TN 37921	Tenant <input type="checkbox"/>	Off Street Parking <input type="checkbox"/>
Phone Number: 865 558-2398	Other <input type="checkbox"/>	Signage <input type="checkbox"/>
Email: Daniel.Byrd@kub.org		Other: Future structures <input checked="" type="checkbox"/>

THIS IS A REQUEST FOR:

- Zoning Variance (Building Permit Denied)
 Extension of Non-Conforming Use/or Structure
 Appeal of Administrative Official's Decision
 Map Interpretation

PROPERTY INFORMATION

Street Address : 1500 Lyons Bend Pike *Pd.* City, State, Zip: Knoxville, TN 37919
 See KGIS.org for Parcel #: 121JB00507 and Zoning District: *I-H*

VARIANCE REQUIREMENTS

City of Knoxville Zoning Ordinance Article 16.3

The City of Knoxville Board of Zoning Appeals shall have the power and authority to grant variances from terms of this ordinance according to the procedure and under the restrictions set out in this section.

The purpose of the variance is to modify the strict application of the specific requirements of this ordinance in the case of exceptionally irregular, narrow, shallow or steep lots, or other exceptional physical conditions, whereby such strict application would result in practical difficulty or unnecessary hardship which would deprive an owner of the reasonable use of his land. The variance shall be used only where necessary to overcome some obstacle which is preventing an owner from using his property as the zoning ordinance intended.

DESCRIPTION OF APPEAL

Describe your project and why you need variances.

See attached letter

Describe hardship conditions that apply to this variance.

See attached letter

APPLICANT AUTHORIZATION

I hereby certify that I am the authorized applicant, representing ALL property owners involved in this request and that all owners have been notified of this request in writing.

APPLICANT'S SIGNATURE

Digitally signed by DBY06880
Date: 2020.12.14 08:05:42 -05'00'

DATE

File #

1-B-21-VA



CITY OF KNOXVILLE

BOARD OF ZONING APPEALS APPLICATION

*******OFFICE USE ONLY*******

Is a plat required? Yes No

Small lot of record/substandard lot

VARIANCE REQUEST(S) WITH ORDINANCE CITATION(S):

1. Decrease the minimum required floor elevation from 823.5 ft, one foot above the 500 year flood elevation, to 814.5 ft for the proposed improvements identified on the applicant's site plan. (Chapter 12 - Flood Damage Prevention and Control Ordinance: Article 3 Section 12-52 (2)).

REVISED

PROJECT INFORMATION

Date Filed ~~2019-11-25~~ 12/14/2020

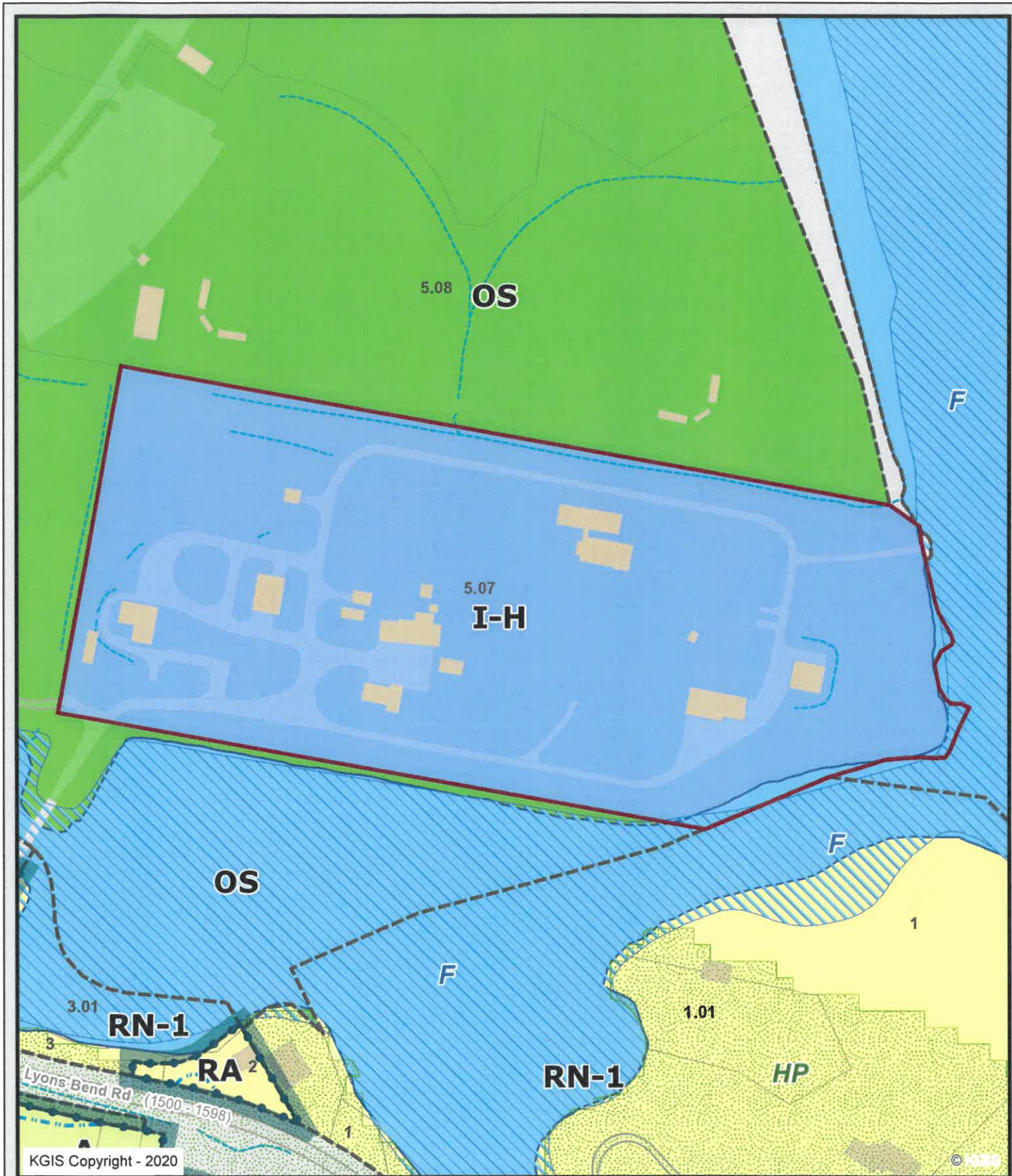
Fee Amount \$500

Council District 2

BZA Meeting Date 1/21/2021

PLANS REVIEWER A. Kohntopp

DATE 2021-01-07



1500 Lyons Bend Rd.

1-B-21-VA
KUB

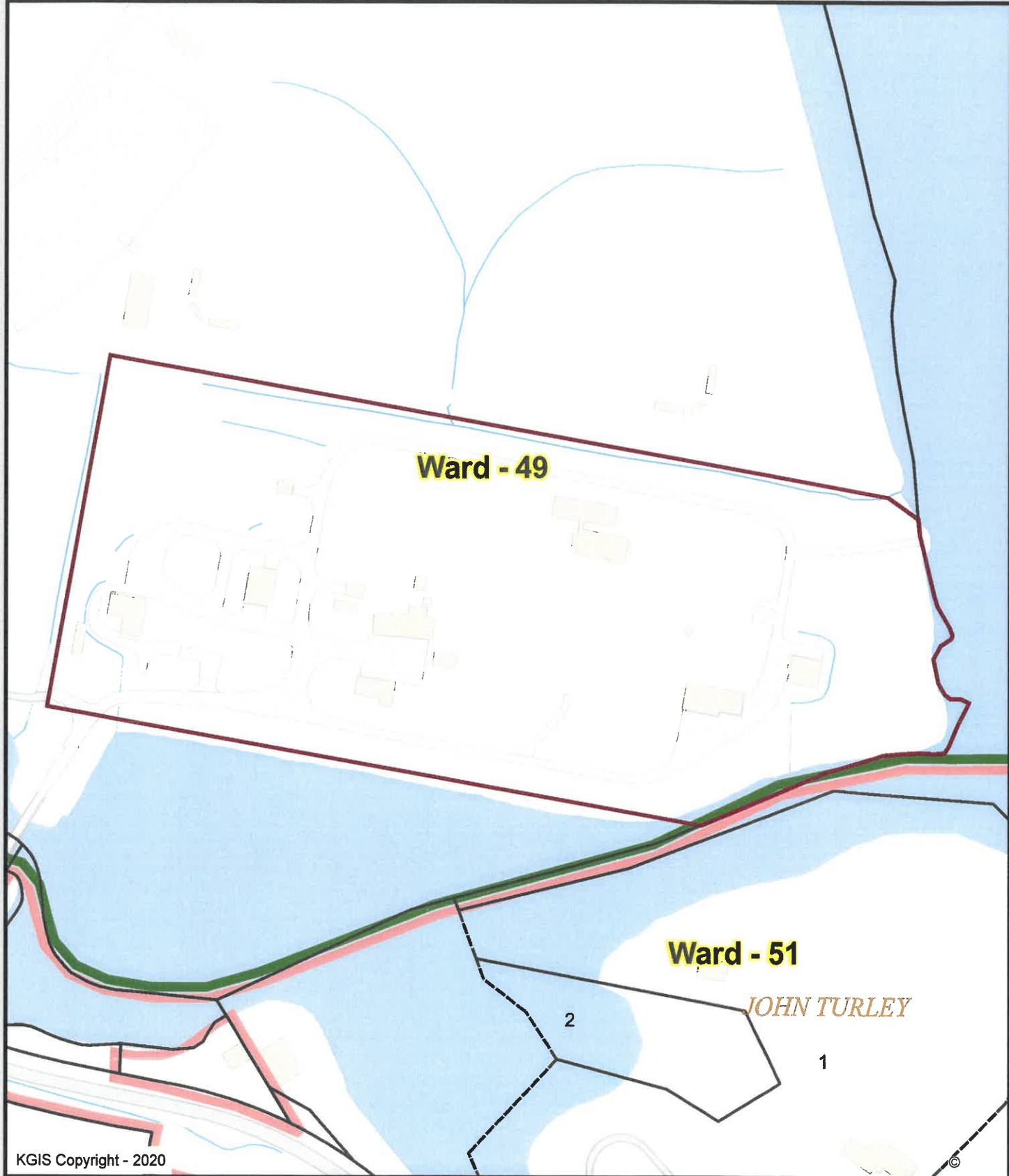
Knoxville - Knox County - KUB Geographic Information System



Printed: 12/21/2020 at 9:00:37 AM



KGIS makes no representation or warranty as to the accuracy of his map and its information nor to its fitness for use. Any user of this map product accepts the same AS IS, WITH ALL FAULTS, and assumes all responsibility for the use thereof, and futher covenants and agrees to hold KGIS harmless from any and all damage, loss, or liability arising from any use of this map product.



KGIS Copyright - 2020

1500 Lyons Bend Rd.

1-B-21-VA

KUB

Knoxville - Knox County - KUB Geographic Information System



Printed: 12/21/2020 at 9:01:12 AM



KGIS makes no representation or warranty as to the accuracy of his map and its information nor to its fitness for use. Any user of this map product accepts the same AS IS, WITH ALL FAULTS, and assumes all responsibility for the use thereof, and further covenants and agrees to hold KGIS harmless from any and all damage, loss, or liability arising from any use of this map product.



1500 Lyons Bend Rd.

1-B-21-VA

KUB

Knoxville - Knox County - KUB Geographic Information System



Printed: 12/21/2020 at 9:01:52 AM



KGIS makes no representation or warranty as to the accuracy of his map and its information nor to its fitness for use. Any user of this map product accepts the same AS IS, WITH ALL FAULTS, and assumes all responsibility for the use thereof, and futher covenants and agrees to hold KGIS harmless from any and all damage, loss, or liability arising from any use of this map product.



1500 Lyons Bend Rd.

1-B-21-VA
KUB

Knoxville - Knox County - KUB Geographic Information System



Printed: 12/21/2020 at 9:02:17 AM



KGIS makes no representation or warranty as to the accuracy of his map and its information nor to its fitness for use. Any user of this map product accepts the same AS IS, WITH ALL FAULTS, and assumes all responsibility for the use thereof, and further covenants and agrees to hold KGIS harmless from any and all damage, loss, or liability arising from any use of this map product.



Hazen and Sawyer
800 S. Gay St.' Suite 700
Knoxville, TN 37929 • 865.766.4034

December 23, 2020

City of Knoxville
Board of Zoning Appeals
400 Main Street
Knoxville, TN 37902

**Re: Site Development Permit R20-1531
Fourth Creek WWTP Sodium Hypochlorite Conversion Design
Elevation Variance Request
1500 Lyons Bend Road**

To Whom it May Concern:

This letter is included with the attached BZA to provide additional information requesting an appeal for comment CON0284766 of the referenced site development permit, dated 11.30.2020 *“Proposed building is located in floodplain. The buildings FFE must be elevated to one foot above the BFE (822.5) or floodproofed per FEMA requirements”*. The purpose of this letter is to summarize the existing conditions of the site to justify relief of this requirement for the proposed structure associated with the referenced project and for the future projects at Fourth Creek Wastewater Treatment Plant (FCWWTP) indicated in the attached site map. This letter is prepared on behalf of our client, Knoxville Utilities Board (KUB).

Site Background:

The existing Fourth Creek Wastewater Treatment Plant (FCWWTP) was constructed in the 1950’s at this location adjacent to Fourth Creek and the Tennessee River (Ft. Loudon Lake). A levee surrounds the entire plant to protect the site from a 100-year flood event and the project site has its own dedicated stormwater pumping system that collects runoff within the plant and pumps into Ft. Loudon Lake. All of the existing structures have finished floor elevations between 814 and 816.

Project Background:

The proposed project includes the installation of chemical disinfection system for the FCWWTP. This system will eliminate the use of chlorine gas at the FCWWTP and enhance the overall safety of the plant and the surrounding community. This project represents a further step in KUB’s long term safety goal of eliminating the use of chlorine gas at any of their facilities.

In 2016 an elevation variance was granted for electrical upgrades that revised the minimum finished floor elevation to 814.5. **This request seeks the same variance elevation of 814.5.** The previous approved elevation variance is attached for reference as all the same issues apply to this project which include:

- The entire FCWWTP predates the City’s flood damage and prevention ordinance. All existing structures have FFE’s between 814 and 816.

Job no

- There are no locations on the site that would make it feasible for the proposed facility to be placed with an FFE of 822.5.
- All proposed structures as part of this project are within the extents of the existing levee and would not increase flood heights or floodway widths.
- The flood protection provided by the existing levee meets the requirements of the current (2020) Tennessee Department of Environment and Conservation *Design Criteria for Review of Sewage Works* by providing protection against the 100-year storm event. The elevation of the levee is set at the 100-year +1' elevation.

Please consider these issues and the attached previously approved elevation variance as justification to set the minimum required finished floor elevation for the indicated projects at the FCWWTP site to 814.50.

Please let me know if have any further questions on this request.

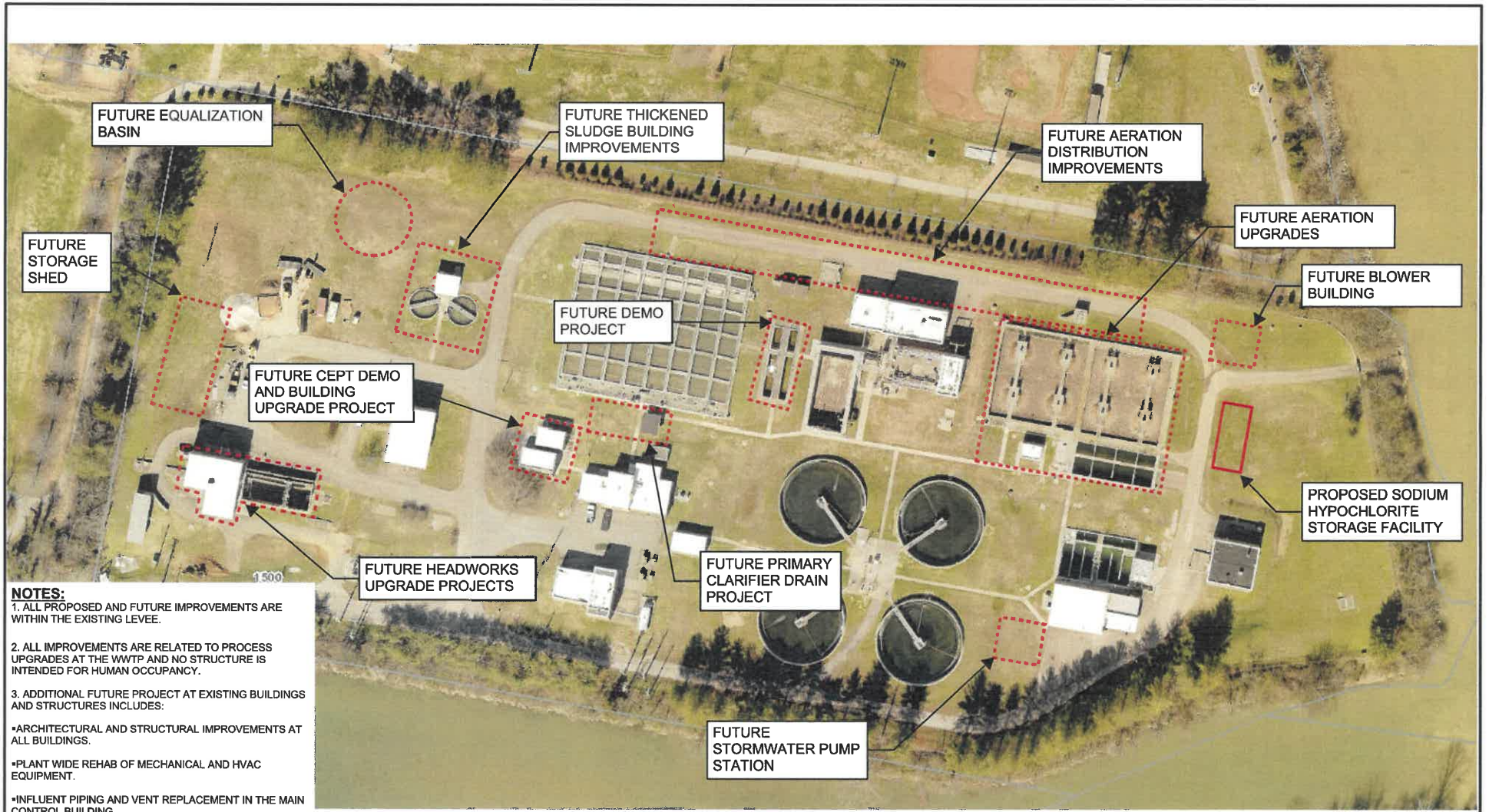
Sincerely,



Andrew Howe, PE
Project Manager

cc: Daniel Byrd, KUB Project Manager
Billie Jo McCarley, KUB Director of Engineering

REVISED



NOTES:
 1. ALL PROPOSED AND FUTURE IMPROVEMENTS ARE WITHIN THE EXISTING LEVEE.
 2. ALL IMPROVEMENTS ARE RELATED TO PROCESS UPGRADES AT THE WWTP AND NO STRUCTURE IS INTENDED FOR HUMAN OCCUPANCY.
 3. ADDITIONAL FUTURE PROJECT AT EXISTING BUILDINGS AND STRUCTURES INCLUDES:
 •ARCHITECTURAL AND STRUCTURAL IMPROVEMENTS AT ALL BUILDINGS.
 •PLANT WIDE REHAB OF MECHANICAL AND HVAC EQUIPMENT.
 •INFLUENT PIPING AND VENT REPLACEMENT IN THE MAIN CONTROL BUILDING.

PROPOSED PROJECT
 FUTURE PROJECT

 <small>HAZEN AND SAWYER 800 S. GAY ST., SUITE 700, KNOXVILLE, TN 37629</small>		NO.	DATE	REVISION	APPR.	SCALE As Shown	FOURTH CREEK WWTP BZA APPLICATION	HAZEN PROJECT NO.: 50034-012
								DATE: December, 2020

Previously Approved
BZA Application

BOARD OF ZONING APPEALS

NAME OF APPLICANT Knoxville Utilities Board **FILE NO.** 4-F-16-VA

The applicant is: Owner Tenant Contractor Other _____

This is a request for:

- Zoning Variance (Building Permit Denied) Extension of Non-Conforming Use
- Appeal of Administrative Official's Decision Map Interpretation

PROPERTY INFORMATION

Street Address 1500 Lyons Bend Rd		<input type="checkbox"/> Temporary <input checked="" type="checkbox"/> Official
Zoning District O-2	Zoning Map Number 121JB00507	
Ward and Block 49 and 49020	Lot/Parcel Unplatted / 005.07	

This proposal pertains to: New Structure Extension of Existing Structure Off-Street Parking
 Signage Other _____

Is a plat required? Yes No

DESCRIPTION OF PROPOSAL

This project consists of constructing a two new buildings to house electrical equipment at the Fourth Creek Wastewater Treatment Plant.

Describe specific ways in which this proposal fails to meet the requirements of the City of Knoxville Zoning Ordinance (please reference Section/Article of the Ordinance): _____

1. Decrease the minimum required floor elevation from 823.5, one foot above the 500-year elevation, to 814.5.
Reference: Flood Damage Protection and Control Ordinance: Article III, Section 12-52 (2)

CITY OF KNOXVILLE BUILDING INSPECTOR Mark Johnson **DATE** 3/21/16

Previously Approved
BZA Application

APPLICANT'S HARDSHIP

Which special circumstance(s) of the property do not apply generally in the zoning district?

Size Elevation Slope Shape Soil Subsurface Other _____

What legal hardship(s) prevents any reasonable use of your land under the terms of the Zoning Ordinance?

See attached letter.

I affirm that the hardship described above was not created by anyone having an ownership interest in the property since 1962. Yes No If answering no, explain: _____

Are the conditions on your property the result of other man-made changes (such as the relocation of a road or highway)? No Yes If answering yes, describe: _____

APPLICANT'S AUTHORIZATION

I hereby certify that I am the authorized applicant, representing ALL property owners involved in this request or holders of options on same, as listed below.

Signature: [Handwritten Signature]

Address to which all correspondence should be mailed regarding this application:

Name (Print) Street Address City State Zip Telephone
Charles Robinson 1100 Marion St., Suite 300 Knoxville, TN 37921
865-963-4300

Names of all property owners or holders of option on same must be listed here:

Name (Print) Street Address City State Zip Telephone
Knoxville Utilities Board 4505 Middlebrook Pike, Knoxville, TN 37921
865-524-2911

Date Filed: 3/21/2016	Fee Paid: 250. ⁰⁰
Councilmanic District: 2	MPC Planning Sector: SW County
General Location Description: N side Lyons Bend Rd., SE corner of Lake Shore Park	
Size: Acres 15	Size: Sq. Ft.
METROPOLITAN PLANNING COMMISSION	DATE 3/21/2016



Previously Approved
BZA Application

1100 Marion Street, Suite 300
Knoxville, Tennessee 37921
tel: (865) 963-4300

March 21, 2015

Mr. Mark Johnson
Plans Review & Inspections
City of Knoxville
400 Main Street, Room 505
Knoxville, TN 3902

Subject: Site Development Permit Number: DSD16-0067
Fourth Creek Wastewater Treatment Plant Electrical Upgrades
1500 Lyons Bend Road, Knoxville, TN

Dear Mr. Johnson:

On behalf of our client, Knoxville Utilities Board (KUB), CDM Smith is requesting approval of a variance associated with CON0179801 (Dated 3/7/2016) "All proposed structures must have a finished floor elevation a minimum of 12 inches above 500-year flood elevation" identified during the Site Development Permit review for the above referenced project. In order to comply with this requirement all new structures located on the site would need to have a finished floor elevation of 823.5 or above. The purpose of this letter is to summarize the circumstances associated with this project and outline our justifications for seeking relief from this requirement. Other projects are also mentioned in order to provide a complete picture of KUB's planned major upgrades for this site.

Background Information

The Fourth Creek Wastewater Treatment Plant (FCWWTP) was constructed by the City of Knoxville at its present location in the 1950's. The current treatment capacity of FCWWTP is approximately 34 MGD, though only about 17 MGD can receive full secondary treatment. FCWWTP is located on Ft. Loudoun Lake at the confluence of Fourth Creek and the Tennessee River. Ft. Loudoun Lake is a reservoir that is regulated by the Tennessee Valley Authority (TVA). There is a levee around the perimeter of the site to protect the plant from the 100-year flood event in the reservoir, which is elevation 818.3 according to the "Flood Insurance Study for Knox County, Tennessee and Incorporated Areas" published by FEMA (August 2013). Information on the TVA website indicates that the minimum winter water surface elevation in the reservoir is 807 and the typical summer operating elevation is between 812 and 813. The highest recorded stage in Ft. Loudoun Lake since the completion of the TVA system occurred on March 28, 1994 which resulted in a water surface elevation of approximately 819 at FCWWTP (FEMA). The 500-year flood elevation at FCWWTP is approximately 822.5 (FEMA).

All of the ten existing buildings that make up the plant facility have finished floor elevations that are between 814 and 816. All plant areas inside the levee drain to a dedicated stormwater wet





Mr. Mark Johnson
March 21, 2016
Page 2

well. Pumped stormwater runoff is then combined with treated effluent and discharged to Ft. Loudoun Lake through the plant's 54" outfall pipe.

Much of the plant electrical equipment, other than components that were replaced in 2013-2014 under Phase 1 of the consent decree mandated Composite Correction Program (CCP), has reached its useful life expectancy and needs to be replaced. A study was completed in 2015 and KUB has initiated a two phase program to replace aging electrical equipment that is no longer considered to be reliable due to age and other factors.

Under the Phase I project (subject of the reference permit application) KUB is seeking to replace motor controls that are needed to operate the aeration system, a critical part of the plant's biological treatment process. The existing outdoor equipment is located on top of the aeration basin deck (approximate elevation 819). Exposure to high humidity levels and splashing from the aeration basin has resulted in significant corrosion of the existing equipment and temporary emergency backup measures are currently in place. KUB is seeking to construct a new building on-site to permanently house and protect the replacement electrical equipment, which they have already purchased. A new building will provide increased security, enhance worker safety, and prolong equipment life. This project is being fast-tracked due to the critical need to restore the reliability of power supply for the aeration process.

Phase II of the electrical upgrade also features a small new electrical building for replacement motor controls. The justification for locating the new equipment in a new building is similar to that for the Phase I building. In addition, the building that houses the existing electrical equipment does not meet current codes for electrical equipment and an upgrade would be very expensive.

Additionally, KUB currently has Phase 2 of the consent decree mandated CCP under design. This project includes a new aeration basin, however, the top of the walls will be above the 500-year flood elevation.

Justifications for Variance Approval

1. FCWWTP pre-dates both the City's Flood Damage Prevention and Control Ordinance and the first flood hazard boundary maps issued for Knoxville in 1981. The very purpose of a wastewater treatment plant makes it necessary for this facility to be situated in a waterfront location.
2. The existing electrical equipment could be replaced in its current location without a Site Development Permit. However, the new equipment would also be located below the 500-year flood elevation and it would still be exposed to damaging corrosive factors.
3. There are no locations inside existing structures at the plant which are suitable to relocate the equipment to. Even if a suitable location were to be identified, none of the existing structures on the site have finished floor elevations above 823.5.





Previously Approved
BZA Application

Mr. Mark Johnson
March 21, 2016
Page 3

4. FCWWTP provides an important and necessary public works service to the community. Replacing the existing electrical equipment is critical to ensuring reliable plant operation. Providing dedicated, climate controlled buildings for electrical equipment will improve the safety, security and longevity of the new motor control equipment.
5. The level of protection provided by the existing levee (100-year event) meets the requirements of the current "Design Criteria for Sewage Works" published by TDEC Division of Water Pollution Control (March 2016). Raising the levee to provide protection from the 500-year event is a capital improvement project that KUB is considering as part of the FCWWTP Facilities Plan, however the electrical upgrades have been identified as an immediate priority due to concerns over the existing equipment including recent component failures, lack of available spare parts, etc.
6. The proposed buildings are compatible with the existing use of the property as a wastewater treatment plant. They have been designed to occupy the least amount of space necessary for the proposed use. The combined footprint of both structures will be less than 1,000 SF. The presence of these buildings will have a negligible impact on the site and surrounding areas in the event of a 500-year flood.
7. All proposed improvements associated with this project will be constructed within the portion of the plant that is already protected by the levee. Therefore, granting the requested variance will not result in increased flood heights or floodway widths or result in any additional threats to public safety.
8. Failure to grant this variance would result in exceptional hardship that would negatively impact KUB's ability to maintain and operate FCWWTP.

Please don't hesitate to contact me if you have any questions or require any further information associated with this request.

Sincerely,

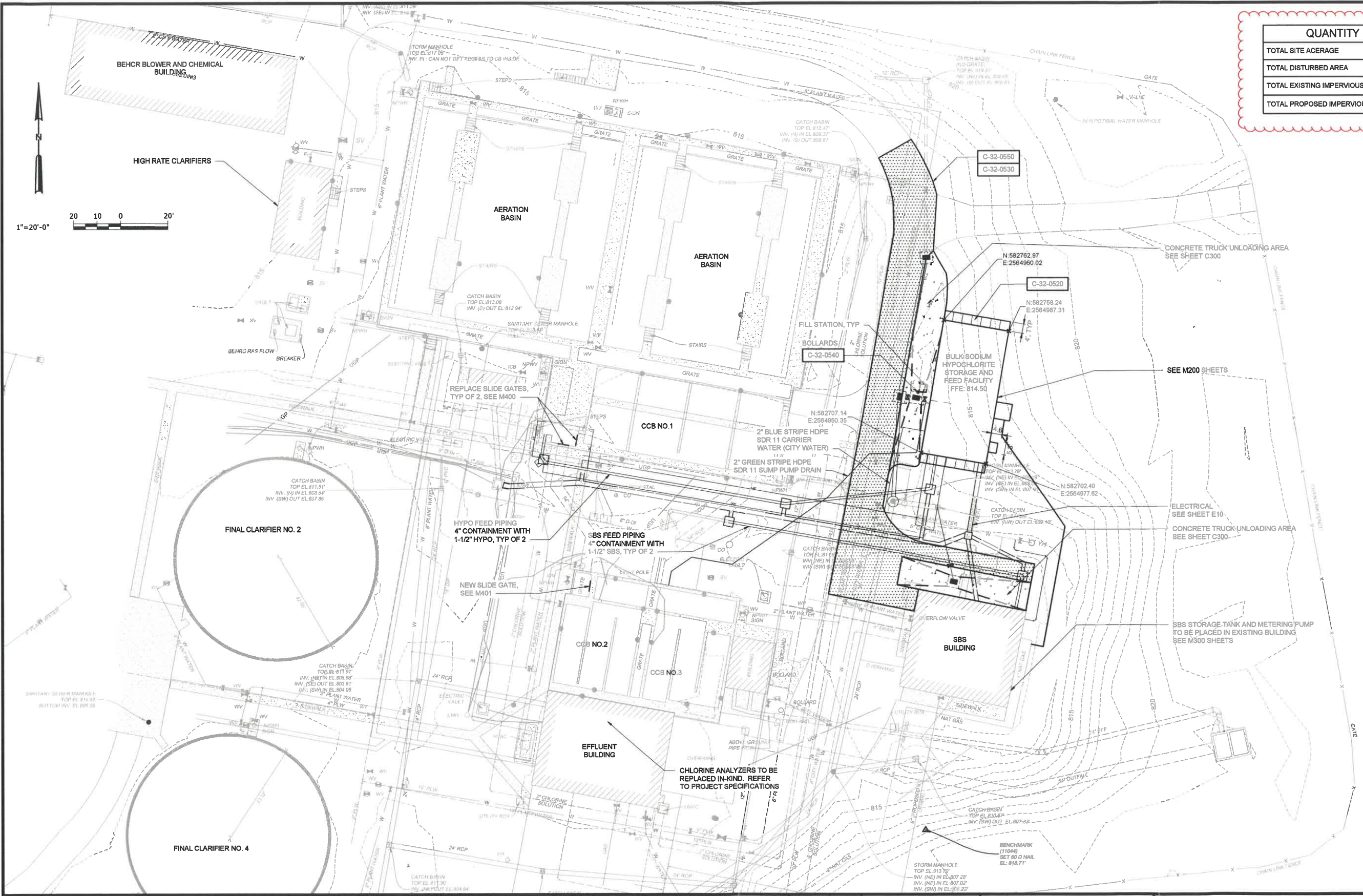


Bernard F. Maloy, PE
Senior Project Manager
CDM Smith Inc.

cc: Mr. Derwin Hagood, Knoxville Utilities Board
Ms. Jennifer Osgood, CDM Smith, Inc.



QUANTITY	AREA (AC.)
TOTAL SITE ACERAGE	2.67
TOTAL DISTURBED AREA	0.36
TOTAL EXISTING IMPERVIOUS AREA	0.11
TOTAL PROPOSED IMPERVIOUS AREA	0.18



Hazen
HAZEN AND SAWYER
800 S. GAY ST., SUITE 700,
KNOXVILLE, TN 37929

PERMIT REVIEW SET
DO NOT USE FOR
CONSTRUCTION

DESIGNED
P. MOORE
DRAWN
J. WALKER
CHECKED
S. ALPERT

NO.	DATE	REVISION	APPR.
1	12/2020	PERMIT REVIEW SET	A. HOWE

SCALE
AS SHOWN
DATE
OCTOBER 2020

ENGINEERING DIVISION

FOURTH CREEK WWTW
CIVIL
OVERALL SITE PLAN

HAZEN PROJECT NO.:
50034-012
C200
SHEET ### OF ###

1-B-21-VA

File: C:\HAZEN\PROJECTS\2020\2020012000.dwg Plot Date: 10/20/20 8:53 AM 817 - JAWALKER