Stantec

Memo

To:	Scott Fletcher, P.E. American Tower Corporation	From:	Michael T. Conaway, P.E. Jacob Poling, INCE Bd. Cert. Stantec, Minneapolis
Project/File:	227708180 – ATC Mount Royal Data Storage Facility	Date:	March 9, 2026

Reference: ATC Mount Royal Data Storage Facility, East Greenwich Township, NJ – Desktop Sound Assessment

Executive Summary

American Tower Corporation (ATC) contracted with Stantec Consulting Services Inc. (Stantec) to complete a desktop sound assessment for the Mount Royal Data Storage Facility (the Project), a proposed 4-megawatt (MW) data storage facility, located in East Greenwich Township, New Jersey. The purpose of the desktop sound assessment was to complete an evaluation of Project compliance with applicable noise regulations.

This analysis utilized site plan drawings provided by ATC dated February 2, 2026, as well as equipment information provided via email by ATC. The overall site plan drawing is attached at the end of this memo. Operational sound modeling was completed to estimate sound levels generated by Project equipment. Sound levels were estimated using the Datakustik CadnaA noise prediction software, configured to implement ISO 9613-2 environmental sound propagation algorithms. The modeling accounted for sound from the proposed Project noise sources. The sound modeling results demonstrate that the Project is expected to meet the applicable sound limits.

This sound assessment was based on the equipment selections and Project layout provided by ATC. It is recommended that the sound assessment be updated if the Project layout or equipment selections are changed.

Terminology

Sound is caused by vibrations that generate waves of minute pressure fluctuations in the surrounding air. Sound levels are measured using a logarithmic decibel (dB) scale. Human hearing ranges from 20 to 20,000 Hertz (Hz). Human hearing varies in sensitivity for different sound frequencies, and the frequency sensitivity changes based on the overall sound level. The ear is most sensitive to middle frequency sounds between 800 and 8,000 Hz and is least sensitive to low frequency sounds below 400 Hz and high frequency sounds above 12,500 Hz. Consequently, several different frequency weighting networks have been used to approximate the way the human ear responds to various frequencies at different sound levels. Of most common use is the A-weighting network. A-weighting discriminates against low frequency sounds similar to the response of the human ear at low to moderate sound levels, which is typical of environmental sources. A-weighted decibels, or dBA, are most widely used for regulatory requirements.

Broadband (overall) sound levels, which are expressed as a single number in decibels, account for acoustical energy across the frequency spectrum, including energy at low, middle, and high frequencies. To assess how much acoustical energy is present in different ranges of the frequency spectrum, sound can be separated into spectral (frequency) components using octave band filters. For environmental noise assessments, octave band sound levels are often expressed in unweighted decibels (dB) at octave band center frequencies from 31.5 to 8,000 Hz.

The sound power level (PWL or L_w) of a noise source is related to the acoustic energy that the source emits regardless of the environment in which it is placed (e.g., the way a light bulb has the same wattage regardless of location). Sound power is a property of the source, and therefore, is independent of distance. The radiating sound power then produces a sound pressure level (SPL or L_p) at a point where human beings can perceive audible sound. The sound pressure level is dependent on the acoustical environment and the distance from the noise source. Unless otherwise stated, sound levels in this report refer to sound pressure levels.

A change in sound levels of 3 decibels is generally considered to be the threshold of perception, whereas a change of 5 decibels is clearly perceptible. A change of 10 decibels is perceived as a doubling or halving of loudness. Each time the number of noise sources is doubled or halved, logarithmic addition (or subtraction) of decibels results in a 3 decibel change in sound levels.

Project Description

The Project is a proposed 4 MW data storage facility located on an existing ATC parcel in East Greenwich Township, Gloucester County, New Jersey. The Project site fronts on Mantua Road, northwest of the intersection of Mantua Road and the New Jersey Turnpike. Bordering the site to the northwest are 3-story multi-family residences. To the southwest is Mantua Road with single-family residences beyond. The New Jersey Turnpike right-of-way is southeast of the site with residences beyond. Wooded land and Mantua Creek are located to the northeast. The proposed Project location and surrounding area are shown in **Figure 1**. In **Figure 1**, the approximate Project property line is outlined in blue, while the proposed area to be developed is outlined in white. The focus of this desktop sound assessment are the nearby residences to the northwest, southwest, and southeast of the Project site.

Currently, the Project site contains an ATC tower and additional support buildings. A majority of the site is wooded land. The proposed data storage facility will be constructed northeast of the existing structures on the Project site. The Project will consist of a data storage building, a rooftop unit on the roof of the data storage building, five generators, five power modules with two wall-mounted HVAC units each, four sets of chiller equipment (two 500 kW chillers and five 125 kW chillers per set), two load banks, and five electrical transformers. The data storage building is approximately 14.5 feet tall and located parallel to the northwest property line, set back approximately 42 feet. The outdoor equipment is located on the southeast side of the data storage building in an equipment yard. **Appendix A** shows the proposed site plan layout.

The data storage facility's typical operations include the running of all chillers, power modules, and transformers during daytime and nighttime hours. A few times during the year, the generators will be tested during the daytime hours with the load banks. Only one generator will be operational and tested at a single time during generator testing. During an emergency, all generators will operate in addition to the typical operations of the data storage facility.

Reference: **ATC Mount Royal Data Storage Facility, East Greenwich Township, NJ – Desktop Sound Assessment**

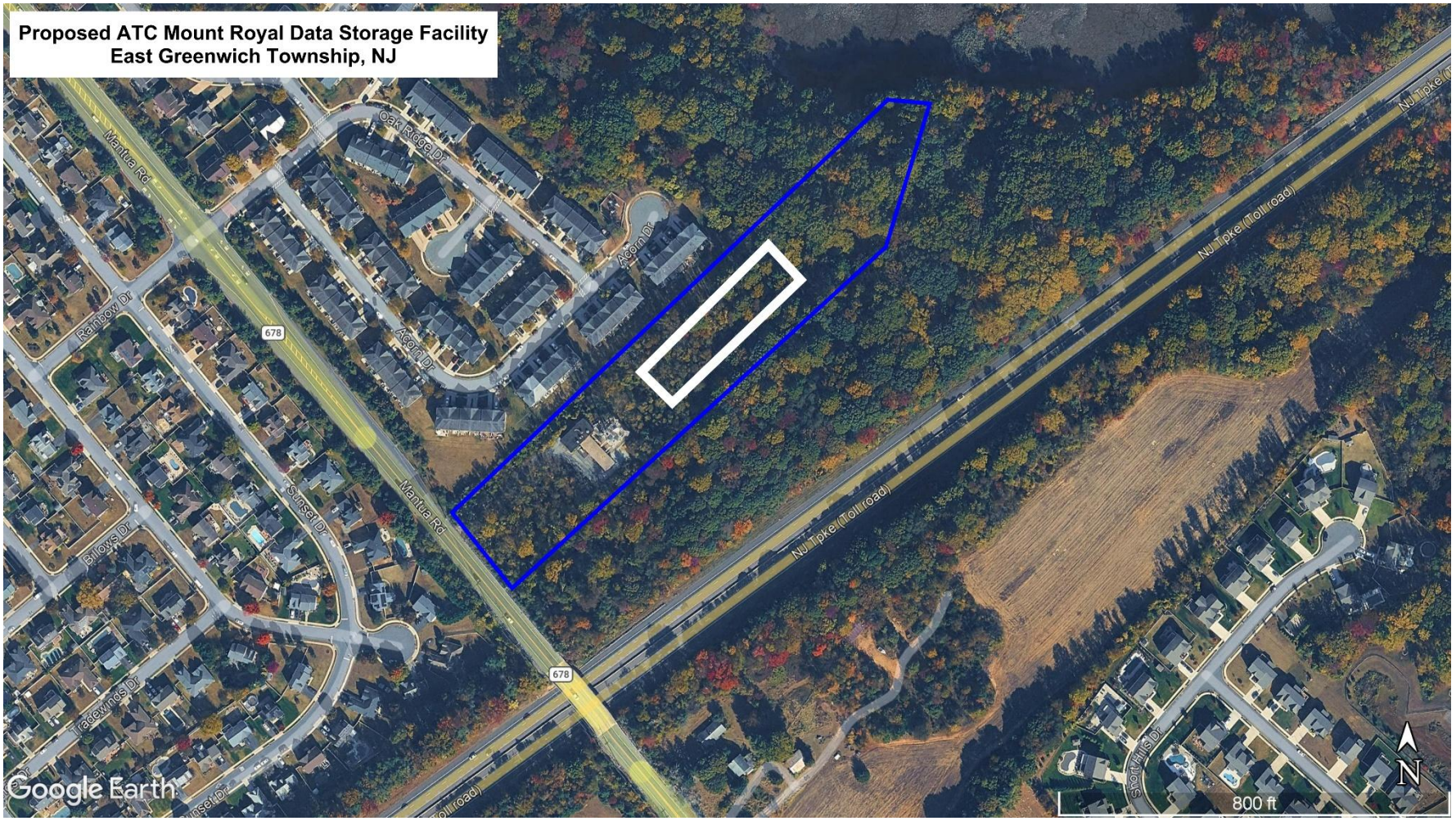

Figure 1 – Project boundary, nearby noise-sensitive receptors, and surrounding area. Approximate property line outlined in blue; approximate proposed developed area outlined in white.

Regulatory Environment and Criteria

Project noise is potentially regulated by State, County, and local regulations and ordinances. These regulations were reviewed for their applicability to Project noise.

The State of New Jersey (State) discusses noise in N.J.A.C. 7:29. This regulation limits continuous noise from commercial and industrial properties at neighboring residential and commercial properties. During the daytime hours between 7 AM and 10 PM, Project sound is limited to 65 dBA at or within the property line of any affected person. During the nighttime hours between 10 PM and 7 AM, the limit drops to 50 dBA. The State regulation also contains octave band sound limits that correspond to the A-weighted sound limits. The regulation further states that emergency generators are exempt from code limits during an electrical outage.

The State also issues guidelines on how to enforce the State noise regulation[1], referred to as the State Guidelines. These guidelines state that the point of compliance, where the limits need to be met, must be at a location where recreation, repose, or conversation would reasonably occur. During the daytime hours, this includes locations such as residential backyards, decks, pools, and patios. During the nighttime hours, the limit would logically apply at residential windows.

No Gloucester County noise regulations or ordinances could be found. However, Gloucester County states that they conduct activities on behalf of the New Jersey Department of Environmental Protection (NJ DEP). This means that the County can enforce the State noise regulation.

East Greenwich Township discusses noise in several sections of their ordinance. In Chapter 9.42, the ordinance states that no person shall make loud, unnecessary, or usual noise that may disturb others. Section 16.18.040.E states that sound levels from a facility should operate within the rules provided by the NJDEP. Lastly, in Section 16.55.140, East Greenwich Townships provides octave band limits that must be met. However, these limits are provided in old octave bands that have not been in use since 1960. The State Guidelines note that old octave band limits, such as these, must be replaced and do not need to be adhered to.

Overall, Project sound during typical operations must meet 50 dBA and the associated octave band sound limits at nearby residence, as typical operations occur during the nighttime period. During the daytime, when Project generators are being tested, Project sound must meet 65 dBA and the associated octave band sound level limits. During an electrical outage, there are no sound limits that need to be met.

Sound Modeling Methodology

A sound analysis was completed for comparison of Project noise to the applicable regulations. Operational sound levels from the proposed Project equipment were estimated using the Datakustik CadnaA noise prediction software, which utilizes the ISO 9613-2 standard[2] algorithms for outdoor sound propagation. The modeling accounted for the quantity and sound power levels of equipment along with sound attenuation due to distance, shielding from buildings, ground absorption, topography, and atmospheric absorption. A ground absorption value of 0.5 was used to represent a mix of acoustically hard and soft ground surfaces. No sound attenuation from vegetation (foliage) was included in the model to simulate a worst-case condition

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[1] "Guidelines for the Investigation of Noise Complaints Pursuant to the State of New Jersey *Noise Control* Regulation (N.J.A.C. 7:29) and the *Model Noise Control Ordinance*", January 14, 2025

[2] ISO 9613-2: 1996. Acoustics – Attenuation of sound during propagation outdoors. Part 2: General method of calculation.

when leaves have fallen off trees. In addition, meteorological conditions that are conducive to sound propagation, with all receptors located downwind of all noise sources, were assumed in the model. Therefore, the model is considered to conservatively estimate sound levels.

The model was developed by importing the proposed Project layout and aerial imagery. Neighboring buildings and structures as well as Project equipment were modeled as structures in the noise model according to their approximate heights. Buildings were assumed to be acoustically reflective. The proposed Project equipment manufacturer and model (if applicable), heights, and sound power levels (L_w) used for the sound assessment and in the noise model are presented in Error! Reference source not found. below. T he equipment noise sources were modeled as point sources within the model based on the provided Project layout.

The power modules do not produce significant noise themselves. However, the two wall-mounted condensing units along the façade of the power modules produce significant noise. The sound data for these units were estimated using data from similar types of equipment, as sound data from the manufacturer was not available. The proposed load bank L_w was also estimated. The NEMA TR-1 standard[3] and methods from the Electric Power Plant Environmental Noise Guide[4] were used to estimate the overall and octave band sound power levels of the transformer; the proposed transformer is specified to have a NEMA sound rating of 62 dBA.

Table 1: Equipment Information and Sound Power Levels in dBA

Equipment	Proposed Manufacturer/Model	L_w (dBA)	Height (feet)	Quantity
Data Storage Building	N/A	N/A	14.5	1
Rooftop Unit	Carrier 50GCQM07	81	4.5 (above roof)	1
Generators	Rehlko KD1750 with Level 2 sound enclosures	104	18.5	5
Power Module Structure	N/A	N/A	13	5
Power Module Condensing Units	Airsys UniCool 28V1B5	96	11	10
500 kW liquid-cooled Chiller	Munters SyCool SYS500	100	8.5	8
125 kW air-cooled Chiller	Munters SyCool SYS125C	94	8.5	20
Load Banks	Universal Load Banks ULB-R2000	98	9	2
Transformers	N/A	75	6.5	5

[3] National Electrical Manufacturers Association (NEMA) Standards Publication TR 1-2013 (R2019). Transformers, Step Voltage Regulators and Reactors.
[4] Edison Electric Institute. Electric Power Plant Environmental Noise Guide. Volume 1 2nd Edition.

Receptors were added into the model at the façade of nearby residential windows residences to the northwest, southwest, and southeast (R1 through R9) because people are indoors during typical nighttime operations. Receptors R1 through R4 simulate the location of a third-story window at 25 feet above grade, while R5, R8, and R9 simulate a second-story window at 15 feet above grade. R6 and R7 simulate first-floor windows and were modeled at 5 feet above grade.

The model produces estimated sound levels at the specified receptor locations as well as sound level contours as outputs. These outputs of the model are used to compare model results to the Project noise limit, as discussed in the next section. In the model, buildings are displayed as white, noise sources are displayed as dark blue lines, and receptors are displayed as black-and-white circles. Topography elevation contour lines are shown in teal.

This analysis was carried out in octave frequency bands, and results are displayed as the A-weighted sound level. Octave frequency band results for receptors are available upon request. The octave band results are consistent with the A-weighted sound level findings presented in this report.

Estimated Operational Sound Results

An operational sound analysis was completed for the Project noise sources. The modeled typical operational condition represents the running of all chillers, power modules, and transformers at full capacity. While generator testing only tests one generator at a time, a testing condition was analyzed with all generators and load banks operating in addition to typical operations. The estimated sound levels for both conditions represent the “worst-case” condition with facility equipment operating at full capacity, which is not expected to occur on a regular basis.

Sound level contours are displayed in **Figure 2** and **Figure 3**, which displays sound levels during typical operations and generator testing, respectively. Estimated A-weighted sound levels at each receptor location are shown in the figures. The sound level contours do not include the contribution of ambient sound levels. Note that the gray sound level contour line corresponds to the nighttime code limit of 50 dBA, while the red sound level contour line corresponds to the 65 dBA daytime code limit.

Results from the analysis show that, during typical operations (**Figure 2**), the highest sound level is expected to be 50 dBA at five receptors. This meets the nighttime code limit of 50 dBA. All other nearby identified residences are expected to receive sound levels of 48 dBA or less, meeting the A-weighted code limit by 2 dB or more. There is also compliance in all octave bands at the nearby identified receptors. Therefore, Project-generated sound levels from typical operations are anticipated to meet the 50 dBA nighttime A-weighted and octave band sound level limits with the proposed site plan.

During the daytime testing of the generators, only one generator will be tested at a time. However, for a conservative model, all generators and load bands were modeled as operating for conservative results. Results from **Figure 3** show that the anticipated highest received sound level is 58 dBA at R1, which is 7 dB below the 65 dBA daytime code limit. Other identified receptors receive A-weighted sound levels that are 9 dB or more below the daytime code limit. In octave bands, there are margins of 5 dB or more below the applicable octave band code limits. Note that sound levels at the property lines of nearby residences are a maximum of 1 dB higher than the sound levels received at residential windows, leading to compliance with the 65 dBA limit at the residential property lines. In addition, the red, 65 dBA sound level contour line does not reach any of the nearby residences, further showing that the daytime limit will be met at nearby residences.

Sound levels for both situations compared to code limits are provided in **Table 2**. This analysis shows that, with the current site layout and equipment selections, Project-generated sound levels are expected to meet both the daytime and nighttime noise code limits at the nearby identified receptors.

Table 2: Expected Project-Generated Sound Levels and Applicable Noise Limits

Receptor	Typical Operations Sound Level (dBA)	Nighttime Code Limit (dBA)	Typical Operations with Generator Testing Sound Level (dBA)	Daytime Code Limit (dBA)
R1	50	50	58	65
R2	50	50	56	65
R3	50	50	55	65
R4	47	50	51	65
R5	43	50	47	65
R6	42	50	45	65
R7	48	50	51	65
R8	50	50	52	65
R9	50	50	53	65

Reference: **ATC Mount Royal Data Storage Facility, East Greenwich Township, NJ – Desktop Sound Assessment**

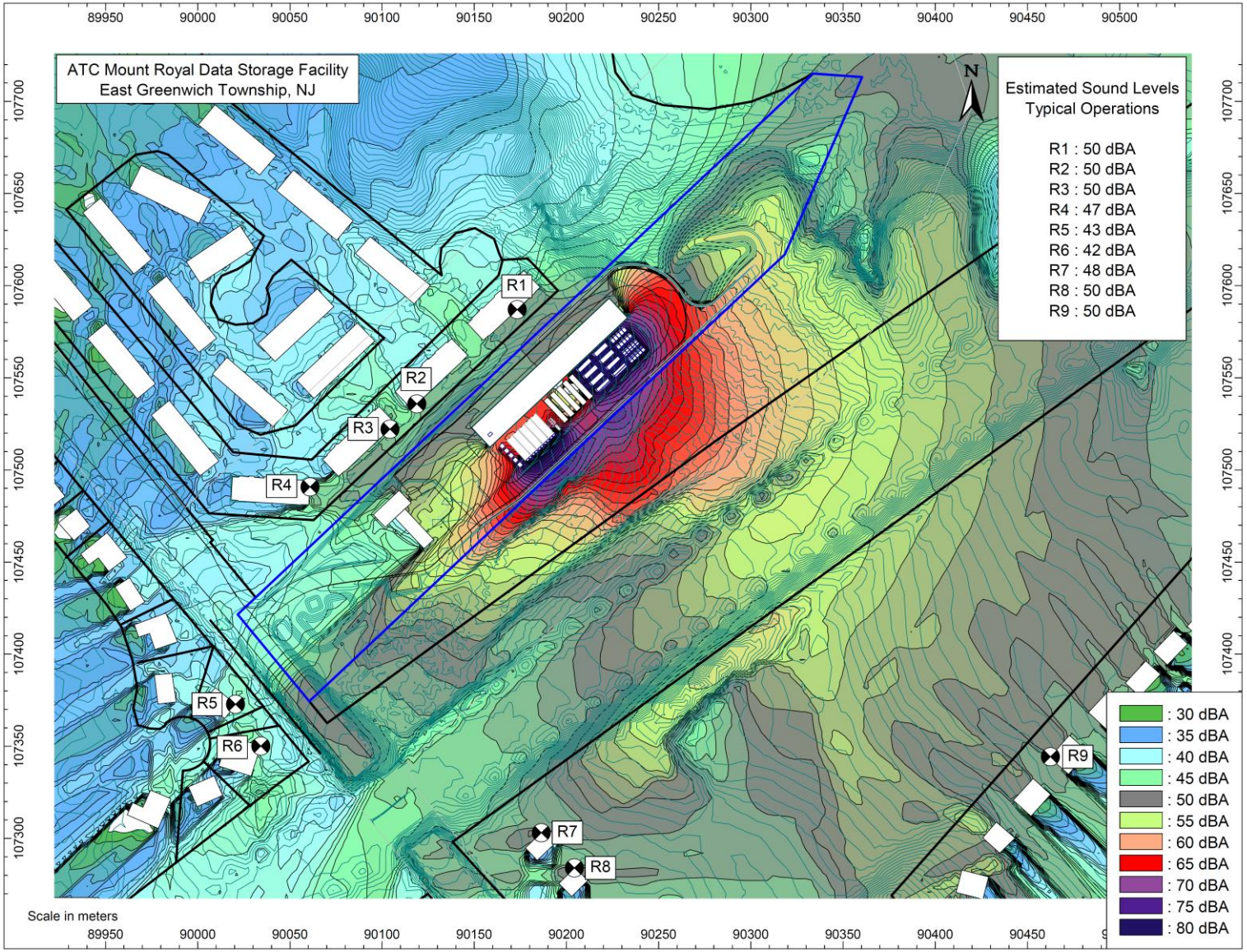


Figure 2 – Estimated Project-Generated Typical Operations Sound Levels (dBA) with the Proposed Layout

Reference: **ATC Mount Royal Data Storage Facility, East Greenwich Township, NJ – Desktop Sound Assessment**

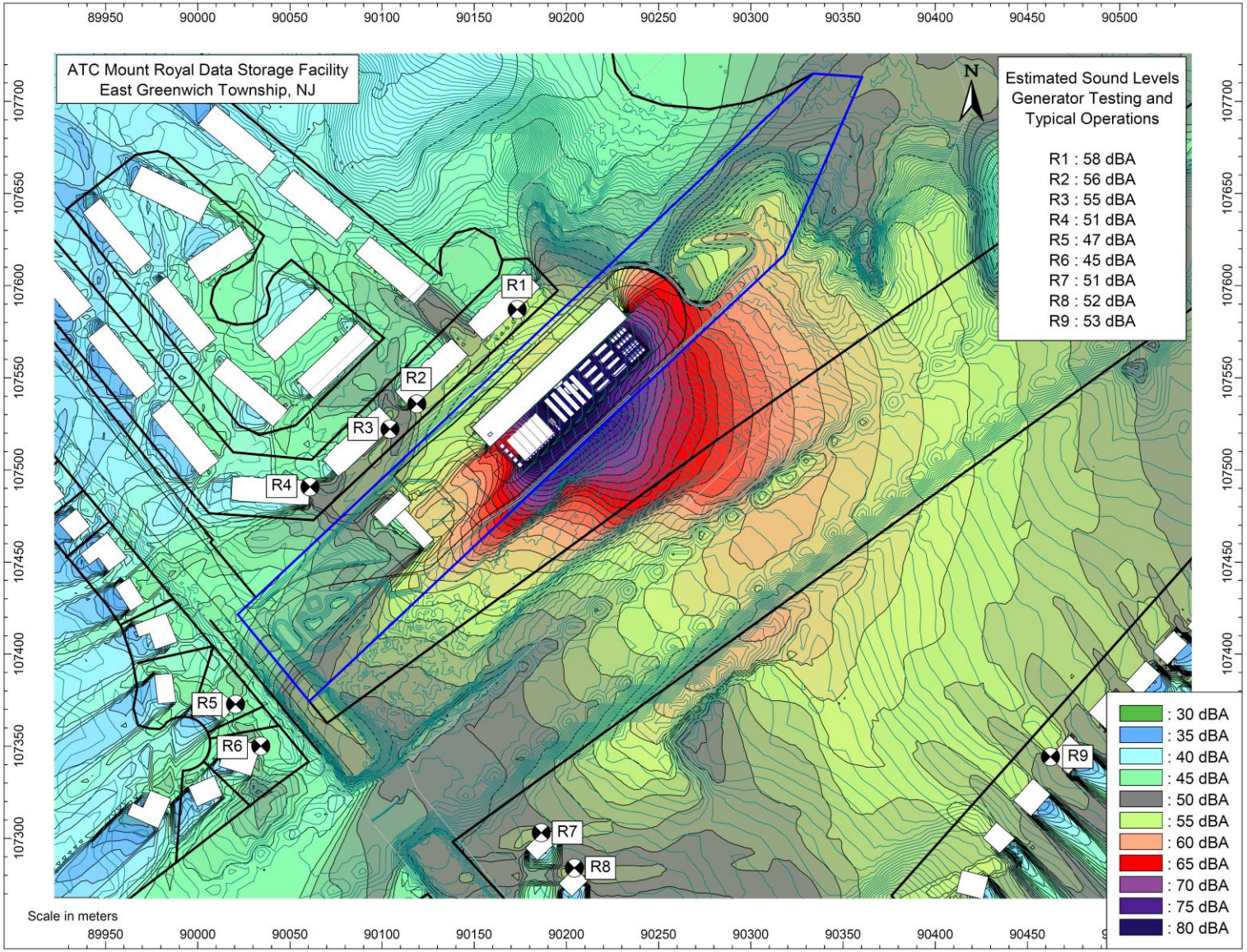


Figure 3 – Estimated Project-Generated Typical Operations with Generator Testing Sound Levels (dBA) with the Proposed Layout

Reference: **ATC Mount Royal Data Storage Facility, East Greenwich Township, NJ – Desktop Sound Assessment**

Conclusion

This pre-construction sound assessment was completed to evaluate compliance of the ATC Mount Royal Data Storage Facility with applicable noise regulations. Simply put, the State of New Jersey limits noise from the Project to 65 dBA during the daytime and 50 dBA during the night at nearby residences. Gloucester County and East Greenwich Township do not have specific noise limits, but both defer to the State noise limits. The Project is located along the New Jersey Turnpike adjacent to multi-story residences. There are also residences located southwest of the Project. These residences were the main focus of this study.

A conservative operational noise model was developed and utilized to estimate the sound levels generated by Project equipment, including sound from the proposed generators, cooling equipment, and electrical equipment. The noise modeling results demonstrated that, during typical operations, Project-generated sound levels are expected to meet the State nighttime sound level limits on an A-weighted basis and in octave bands. In a conservative generator testing situation when all generators are tested simultaneously, estimated Project-generated sound levels are anticipated to meet the daytime A-weighted and octave band sound level limits by an appropriate margin.

This sound assessment was based on the equipment selections and Project layout provided by ATC. It is recommended that the sound assessment be updated if the Project layout and equipment selection change.

Sincerely,

Stantec Consulting Services Inc.

Michael T. Conaway P.E.
Senior Acoustical Engineer/Noise Consultant
Phone: (763) 252-6822
Mobile: (612) 669-1325
mike.conaway@stantec.com

Jacob Poling INCE Bd. Cert.
Associate, Senior Acoustician
Phone: (763) 252-6965
Mobile: (952) 495-7858
jacob.poling@stantec.com

stantec.com

Attachment: Appendix A – Proposed ATC Mount Royal Data Storage Facility Site Plan

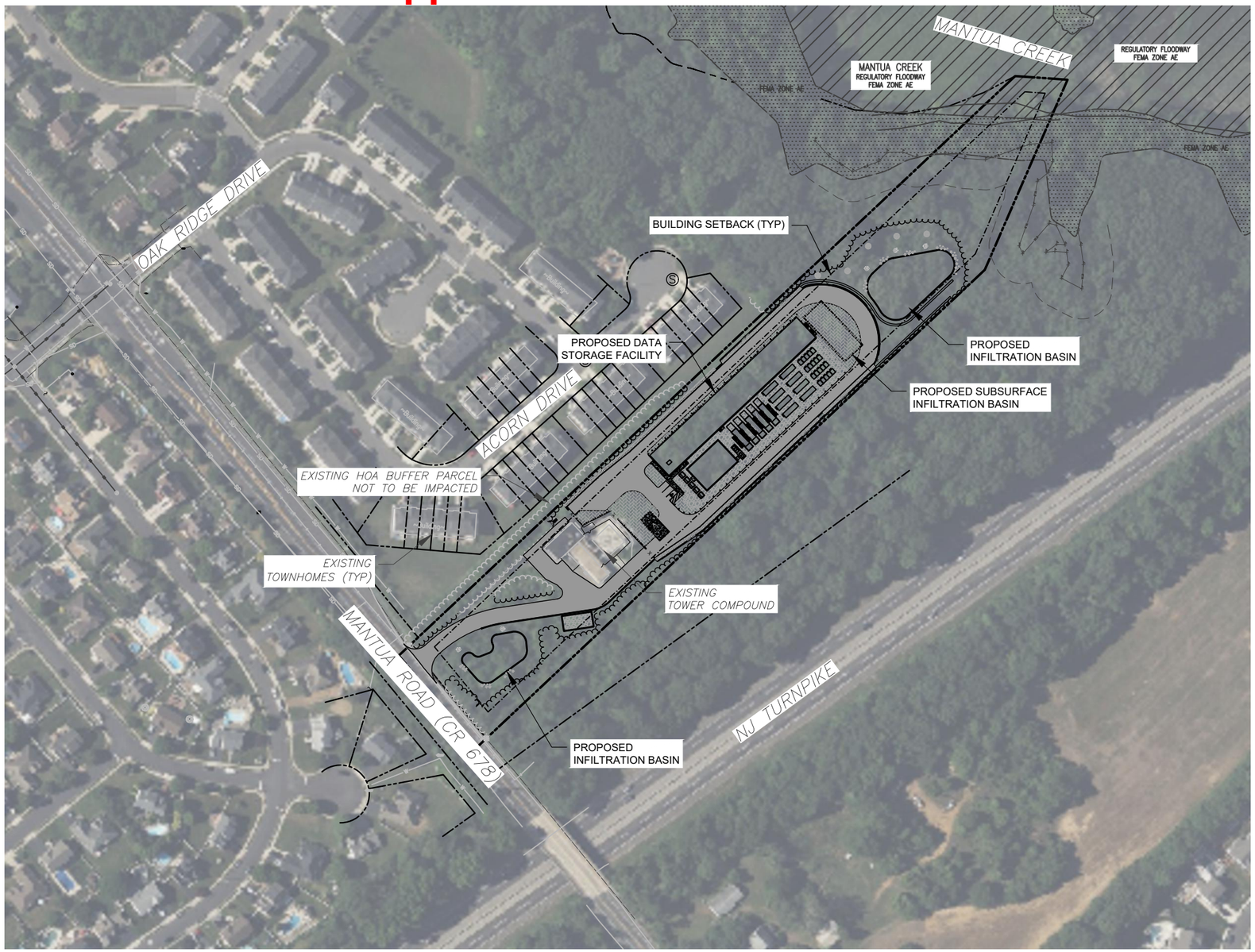
Appendix A

LEGEND

- EXISTING PROPERTY
- EXISTING ADJ. PROPERTY
- EXISTING SETBACK
- EXISTING RIGHT OF WAY
- EXISTING EASEMENT
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING TREELINE
- EXISTING CHAINLINK FENCE
- EXISTING BUILDING
- EXISTING STORM DRAIN
- EXISTING ROAD (DIRT)
- EXISTING ROAD (STONE)
- EXISTING ROAD (PAVED)
- EXISTING ROAD CENTERLINE
- EXISTING CONCRETE
- EXISTING LEASE AREA
- EXISTING OVERHEAD WIRE
- EXISTING SANITARY SEWER LINE
- EXISTING NATURAL GAS LINE
- EXISTING WATERLINE
- EXISTING UNDERGROUND POWER
- EXISTING UNDERGROUND TELCO
- EXISTING STREAM
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING FLOODWAY
- EXISTING FLOODPLAIN
- EXISTING UTILITY POLE
- LT. POLE EXISTING LIGHT
- CO EXISTING CLEAN OUT
- EXISTING SANITARY MANHOLE
- EXISTING STORM DRAIN MANHOLE
- CB EXISTING STORM DRAIN INLET
- WV EXISTING WATER VALVE
- FH EXISTING FIRE HYDRANT

CIVIL LEGEND

- PROPOSED EASEMENT
- PROPOSED ROAD
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED EDGE OF CLEARING
- PROPOSED CONTOUR (MINOR)
- PROPOSED CONTOUR (MAJOR)
- PROPOSED FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED FIRE HOSE PULL
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED POWER
- PROPOSED ELECTRICAL FEEDERS
- PROPOSED TREE CONSERVATION AREA
- PROPOSED DITCH
- PROPOSED STORMPIPE
- PROPOSED GRAVEL
- PROPOSED MULCH



1 OVERALL SITE PLAN

0 200' 400'

SCALE: 1"=200' (11X17)
1"=100' (22X34)

AMERICAN TOWER®
ATC TOWER SERVICES, LLC
1 FENTON MAIN STREET
SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
COA: 24GA28099400

REV.	DESCRIPTION	BY	DATE
A	PRELIM	DBG	02/02/26

ATC SITE NUMBER:
211805

ATC SITE NAME:
MT. ROYAL

DATA STORAGE FACILITY

SITE ADDRESS:
114 MANTUA RD, BLOCK 1402.01, LOT 120
MT ROYAL (EAST GREENWICH TWP), NJ 08061

SEAL:

PRELIMINARY: NOT FOR CONSTRUCTION

DATE DRAWN:	02/02/26
ATC JOB NO:	14145732
OPS JOB NO:	----
ATC LEGACY #:	----

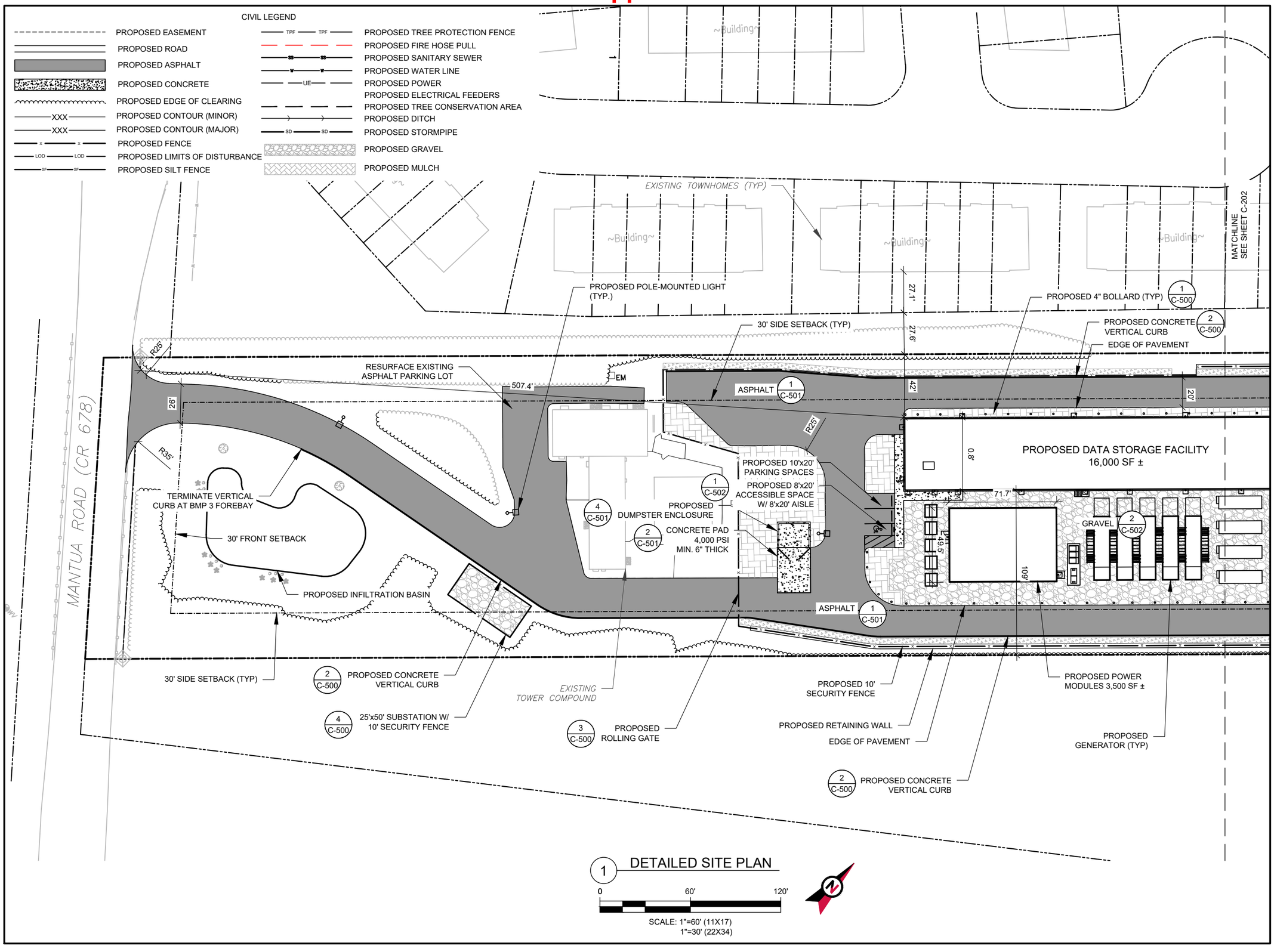
OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C-200	A

Appendix A

CIVIL LEGEND

- PROPOSED EASEMENT
- PROPOSED ROAD
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED EDGE OF CLEARING
- PROPOSED CONTOUR (MINOR) — XXX
- PROPOSED CONTOUR (MAJOR) — XXX
- PROPOSED FENCE — x x
- PROPOSED LIMITS OF DISTURBANCE — LOD LOD
- PROPOSED SILT FENCE — SF SF
- PROPOSED TREE PROTECTION FENCE — TPF TPF
- PROPOSED FIRE HOSE PULL
- PROPOSED SANITARY SEWER — SS SS
- PROPOSED WATER LINE — W W
- PROPOSED POWER — UE
- PROPOSED ELECTRICAL FEEDERS
- PROPOSED TREE CONSERVATION AREA
- PROPOSED DITCH
- PROPOSED STORMPIPE — SD SD
- PROPOSED GRAVEL
- PROPOSED MULCH



1 DETAILED SITE PLAN

0 60' 120'

SCALE: 1"=60' (11X17)
1"=30' (22X34)

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A	PRELIM	DBG	02/02/26

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ATC SITE NAME:
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DATA STORAGE FACILITY

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SEAL:

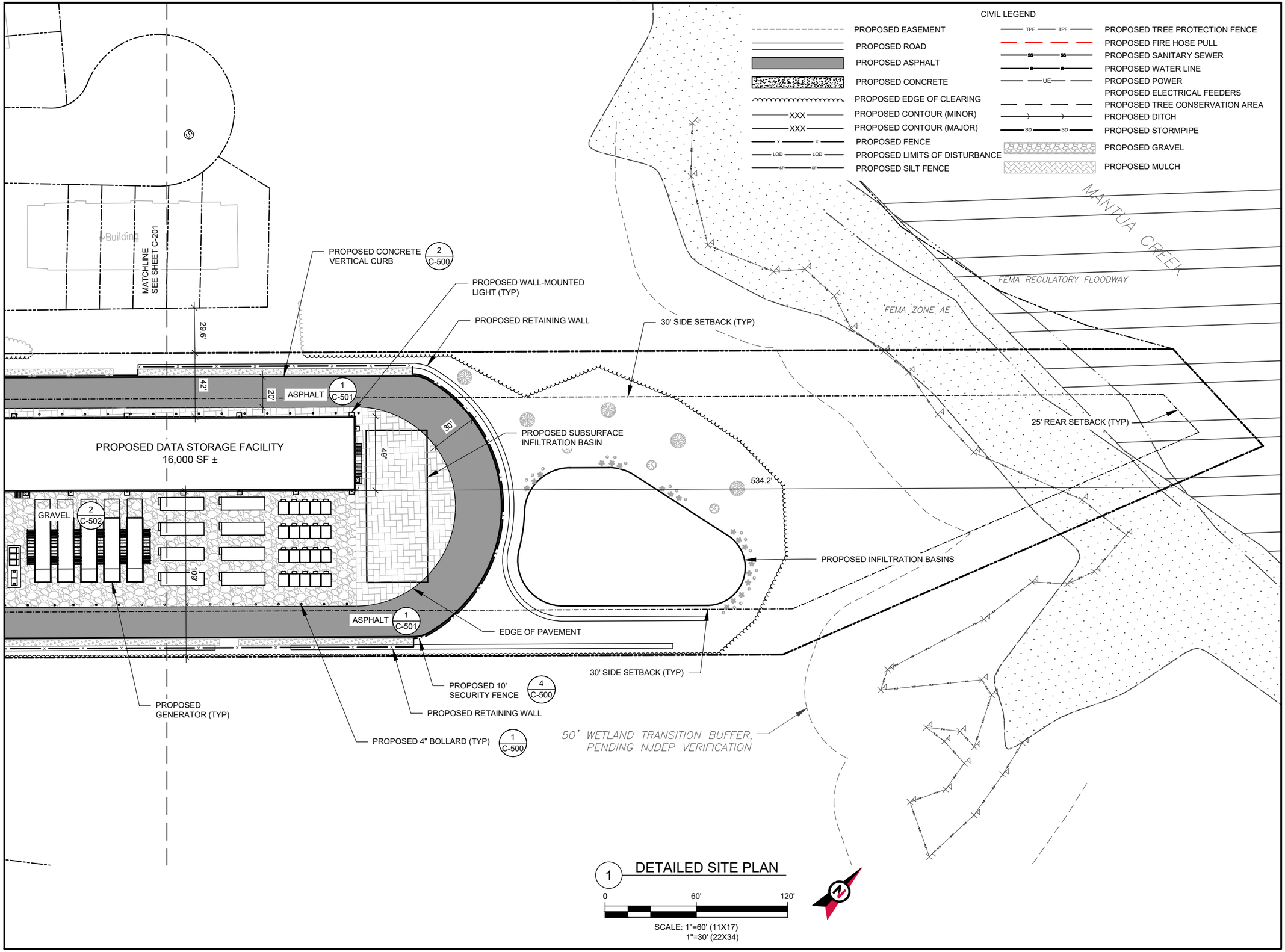
PRELIMINARY: NOT FOR CONSTRUCTION

DATE DRAWN:	02/02/26
ATC JOB NO:	14145732
OPS JOB NO:	----
ATC LEGACY #:	----

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-201	A

Appendix A



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ATC JOB NO:	14145732
OPS JOB NO:	----
ATC LEGACY #:	----

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-202	A