Village/Town of Mount Kisco Building Department
104 Main Street
Mount Kisco, New York 10549
Ph. (914) 864-0019-fax (914) 864-1085

March 25, 2024

Anthony Cutri
137 Croton Avenue
Mount Kisco, NY 10549

Re: Notice of Denial
137 Croton Avenue
Mount Kisco, NY 10549
(SBL) 69.63-2-2

To Whom It May Concern:

Your recent Building Permit application for the proposed garage addition has been denied for the following reasons:

1. The property is located within the RS-12 (Low Density-One Family Residence) Zoning District where the required side yard setback is 15 feet and the proposed building is located 10.0 feet from the south side yard property line. Therefore; a 5.0 ft. side yard setback variance is required as per *§110-8 C (1) (f) [3] of the Village/Town of Mount Kisco Code.*

You have the right to appeal this decision within 60 days.

Sincerely,

Peter J. Miley,
Building Inspector

\mkr

O'BRIEN
ARCHITECTURE • LLC

4.24 .24

The Mount Kisco Zoning Board

re: Cutri Building One-Car Garage Variance

Dear Chairman Spector and Zoning Board Members,

We are seeking a side yard variance appeal based on Section 110-8.C.1.1.3. We are proposing a one-car garage addition at 137 Croton Avenue where there is currently one existing garage bay. The side yard setback requirement in this zone is 15'.
Our addition will be constructed 10' from the property line, requiring a 5'variance.

The hardship is that the older couple, who have lived there for decades, both need an interior garage.

This small addition will have very little impact on the community but will add great value for the family.

Please feel free to contact me if you have any questions or need more information.

Sincerely,

Thomas O'Brien

POST ROAD STUDIOS 640 OLD POST ROAD BEDFORD NEW YORK 10506

914-646-7691 TOMOBRIENARCH@GMAIL.COM OBRIENARCHITECTURE.COM

Date: _____ RECEIVED Case No.: _____

Fee: _____ APR 26 2024 Date Filed: _____

Zoning Board of Appeals
Village/Town of Mount Kisco

Village/Town of Mount Kisco
Municipal Building
104 Main Street, Mt. Kisco, NY 10549

Zoning Board of Appeals
Application

Appellant: BARBARA & ANTHONY CUTRI
Address: 137 CROTON AVE, MT. KISCO, NY.
Address of subject property (if different): _____

Appellant's relationship to subject property: ✓ Owner ____ Lessee ____ Other

Property owner (if different): _____
Address: _____

TO THE CHAIRMAN, ZONING BOARD OF APPEALS: An appeal is hereby taken from the decision of the Building Inspector, PETER J. MILEY dated MARCH 25, 24 Application is hereby made for the following:

____ Variation **or** ____ Interpretation of Section 110-8C-1.F-3 of the Code of the Village/Town of Mount Kisco,

to permit the: ____ Erection; ____ Alteration; ____ Conversion; ____ Maintenance of A ONE CAR GARAGE INTO A TWO CAR GARAGE

_____ in accordance with plans filed on (date) 3.24.24
for Property ID # _____ located in the R5-12 Zoning District.
The subject premises is situated on the EAST side of (street) CROTON AVE
_____ in the Village/Town of Mount Kisco, County of Westchester, NY.
Does property face on two different public streets? Yes/No NO
(If on two streets, give both street names) _____

Type of Variance sought: ____ Use ✓ Area

Is the appellant before the Planning Board of the Village of Mount Kisco with regard to this property? NO

Is there an approved site plan for this property? _____ in connection with a _____ Proposed or _____ Existing building; erected (yr.) _____

Size of Lot: 106.92 feet wide 164.76 feet deep Area 0.380A 16,547 ☐

Size of Building: at street level 14' feet wide 22' feet deep

Height of building: 17' Present use of building: SINGLE FAMILY HOME

Does this building contain a nonconforming use? NO Please identify and explain: ___

Is this building classified as a non-complying use? NO Please identify and explain: ___

Has any previous application or appeal been filed with this Board for these premises? Yes/No? NO

Was a variance ever granted for this property? NO If so, please identify and explain:

Are there any violations pending against this property? NO If so, please identify and explain: _____

Has a Work Stop Order or Appearance Ticket been served relative to this matter? NO Yes or ___ No Date of Issue: _____

Have you inquired of the Village Clerk whether there is a petition pending to change the subject zoning district or regulations? _____

I submit the following attached documents, drawings, photographs and any other items listed as evidence and support and to be part of this application:

The following items MUST be submitted:

a) **Attached hereto is a copy of the order or decision (Notice of Denial) issued by the Building Inspector or duly authorized administrative official issued on** MARCH 25, 2024 **upon which this application is based.**

b) **Copy of notice to the administrative official that I have appealed, setting forth the grounds of appeal and have requested the application to be scheduled for a public hearing.**

c) **A typewritten statement of the principal points (facts and circumstances) on which I base my application with a description of the proposed work.**

d) **Ten (10) sets of site plans, plat or as-built survey drawings professionally signed and sealed (as may be required).**

e) **A block diagram with street names, block and lot numbers, and street frontage showing all property affected within 300' of the subject property, with a North point of the compass indicated.**

f) **A full list of names and addresses of the owners of all property shown on the above noted block diagram that lie within or tangent to the 300' radius from the subject property.**

g) **A copy of the Public Notice for the public hearing of this application.**

h) **A sworn Affidavit of Mailing, duly notarized, that a true copy of said Public Notice has been sent by mail to all property owners within 300 feet of this premises at least 10 days prior to the public hearing.**

NOTE: APPLICANT MUST CAUSE A TRUE COPY OF THE PUBLIC NOTICE TO BE PUBLISHED IN THE OFFICIAL NEWSPAPER OF THE VILLAGE AT LEAST 15 DAYS PRIOR TO THE PUBLIC HEARING.

i) **A true copy of the filed deed and/or signed lease or contract for the use of the subject property.**

*j) **At least two sets of unmounted photographs, 4" by 6" in size, showing actual conditions on both sides of street, between intersecting streets. Print street names and mark premises in question.**

*k) **A floor plan of the subject building with all the necessary measurements.**

*l) **A longitudinal section of the subject building and heights marked thereon as well as front elevations.**

* Optional - As Needed

I hereby depose & say that all the above statements and the statements contained in the papers submitted herewith are true. Anthony J. Curri

(Appellant to sign here)

Sworn to before me this day of: March 12 2021

Notary Public, Michelle K. Russo

MICHELLE K. RUSSO
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RU6313298
Qualified in Putnam County
My Commission Expires 10-20-2026

[TO BE COMPLETED IF APPELLANT IS NOT THE PROPERTY OWNER IN FEE]
State of New York }
County of Westchester } ss

Being duly sworn, deposes and say that he resides at _____ in the County of Westchester, in the State of New York, that he is the owner in fee of all that certain lot, piece or parcel of land situated, lying and being in the Village of Mount Kisco, County of Westchester aforesaid and known and designated as number _____ and that he hereby authorized _____ to make the annexed application in his behalf and that the statements contained in said application are true.

Anthony J. Curri

(sign here)

AFFIDAVIT OF MAILING

STATE OF NEW YORK }
}**SS.:**
COUNTY OF WESTCHESTER }

ANTHONY CUTRI being duly sworn, deposes and says:

I reside at 137 CROTON AVE, MT. KISCO, N.Y. 10549

On APRIL 25 2024 I served a notice of hearing, a copy of which is attached hereto and labeled Exhibit A, upon persons whose names are listed in a schedule of property owners within 300 feet of the subject property identified in this notice. A copy of this schedule of property owners' names is attached hereto and labeled Exhibit B. I placed a true copy of such notice in a postage paid property addressed wrapper addressed to the addresses set forth in Exhibit B, in a post office or official depository under the exclusive care and custody of the United States Post Office, within the County of Westchester.

Anthony J. Cutri

Sworn to before me on this
25th day of April 2024

Michelle K. Russo
(Notary Public)

MICHELLE K. RUSSO
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RU6313298
Qualified in Putnam County
My Commission Expires 10-20-2026

Exhibit "A"

PUBLIC NOTICE

PLEASE TAKE NOTICE that the Zoning Board of Appeals of the Village/Town of Mount Kisco, New York will hold a Public Hearing on the 21 ST day of MAY 20 24 at the Municipal Building, Mount Kisco, New York, beginning at 7:00 PM pursuant to the Zoning Ordinance on the Appeal of

ANTHONY & BARBARA CUTRI
(Name of Applicant)
137 CROTON AVE., MT. KISCO, NY, 10549
(Address of Applicant)

from the decision of Peter J. Miley, Building Inspector, dated MARCH 25, 2024 (Date of Denial Letter) denying the application dated to permit the ONE CAR GARAGE ADDITION (Proposed Work)

The property involved is known as 137 CROTON AVE, MT. KISCO (Address of Property)

and described on the Village Tax Map as Section 69.63 Block 2 Lot 2

and is located on the SOUTH side of CROTON AVENUE in a
east/west/n/s (Street Name)

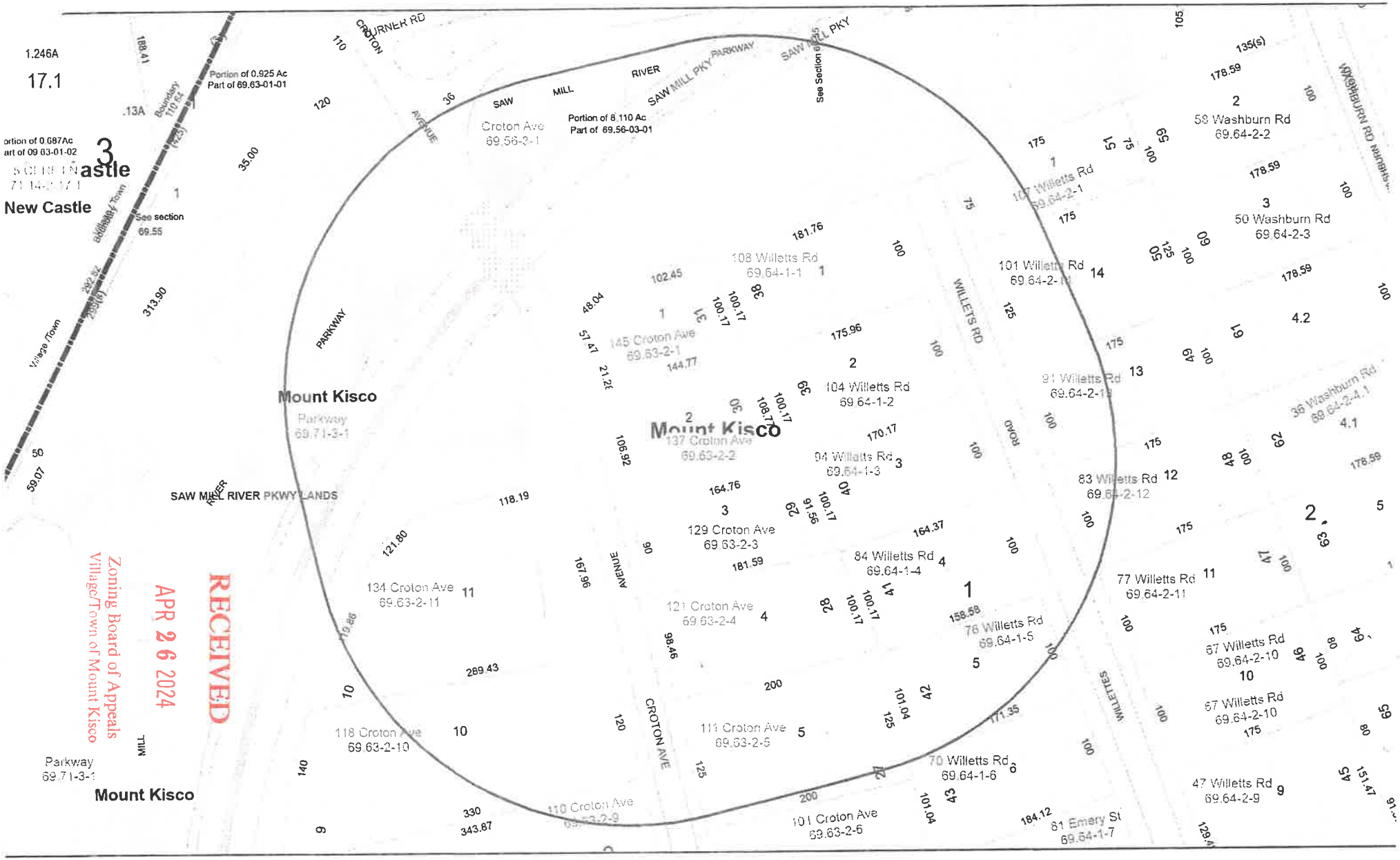
R4-12 Zoning District. Said Appeal is being made to obtain a

variance from Section(s) 110.8.C.1.1.3 of the
(Identify specific zoning code section number(s))

Code of the Village/Town of Mount Kisco, which requires A 15' SIDE YARD SETBACK. THE ADDITION WILL BE 10' SIDE YARD MAKING IT A 5' VARIANCE.

Wayne Spector, Chair
Zoning Board of Appeals
Village/Town of Mount Kisco

137 Croton Ave. ID: 69.63-2-2 (Mount Kisco)



RECEIVED
APR 26 2024
Zoning Board of Appeals
Village/Town of Mount Kisco

March 12, 2024

1:1,500

0 70 140 280 ft

N

Westchester County GIS

GIS

http://giswww.westchestergov.com
Michaelian Office Building
148 Martine Avenue Rm 214
White Plains, New York 10601

OWNERNAME	PROPADDRESS	PROPCITY	PROPZIP	PROPPRINTKEY	c/o	Mailing Address	City	State	Zip
Westchester Co. Planning Dept.	Parkway	MOUNT KISCO	10549	69.71-3-1	Finance Dept.	148 Martine Ave, 7th FL	White Plains	NY	10601
Johannessen Jan K	70 Willetts Rd	MOUNT KISCO	10549	69.64-1-6					
Castellitto, Richard	84 Willetts Rd	MOUNT KISCO	10549	69.64-1-4					
Lippolis, Massimiliano	107 Willetts Rd	MOUNT KISCO	10549	69.64-2-1					
Ley David	83 Willetts Rd	MOUNT KISCO	10549	69.64-2-12					
Kiernan, John E	110 Croton Ave	MOUNT KISCO	10549	69.63-2-9					
Greenberg David P	76 Willetts Rd	MOUNT KISCO	10549	69.64-1-5					
Kelley Peter T	118 Croton Ave	MOUNT KISCO	10549	69.63-2-10					
Cutri Anthony J	137 Croton Ave	MOUNT KISCO	10549	69.63-2-2	NA				
Rubin, Jutta	108 Willetts Rd	MOUNT KISCO	10549	69.64-1-1					
Botti Walter	94 Willetts Rd	MOUNT KISCO	10549	69.64-1-3					
Boyle Kieran J	111 Croton Ave	MOUNT KISCO	10549	69.63-2-5					
Starobin, Michael	134 Croton Ave	MOUNT KISCO	10549	69.63-2-11					
Frawley, Michael C	121 Croton Ave	MOUNT KISCO	10549	69.63-2-4		PO Box 717	Mt. Kisco	NY	10549
Baum, Matthew	104 Willetts Rd	MOUNT KISCO	10549	69.64-1-2					
Hall Heather	101 Willetts Rd	MOUNT KISCO	10549	69.64-2-14					
Joyce, Lisa C	145 Croton Ave	MOUNT KISCO	10549	69.63-2-1					
Westchester Co. Planning Dept	Croton Ave	MOUNT KISCO	10549	69.56-3-1	Finance Dept.	148 Martine Ave, 7th FL	White Plains	NY	10601
Sabia John A	129 Croton Ave	MOUNT KISCO	10549	69.63-2-3					
Du Terrroil Jason M	91 Willetts Rd	MOUNT KISCO	10549	69.64-2-13					

10113970, 1438128

AFFIDAVIT OF PUBLICATION

State of Wisconsin
County of Brown

linda tutt being duly sworn, deposes and says she is the Principal Clerk of **The Journal News**, Division of Gannett Newspaper Subsidiary, publishers of following newspaper published in Westchester and Rockland Counties, State of New York, of which annexed is a printed copy, out from said newspaper has been published in said newspaper editions dated:

04/30/2024

linda tutt

Subscribed and sworn to before me this 30 day of April, 2024

Nancy Heyrman

Notary Public
State of Wisconsin, County of Brown

Nancy Heyrman
Notary Public, State of Wisconsin
Commission Expires,
5·15·27

PUBLIC NOTICE

PLEASE TAKE NOTICE that the Zoning Board of Appeals of the Village/Town of Mt. Kisco, New York will hold a Public Hearing on the 21st day of May, 2024 at the Municipal Building, Mount Kisco, New York beginning at 7:00pm pursuant to the Zoning Ordinance of the Appeal of Anthony & Barbara Cutri, 137 Croton Ave, Mt. Kisco, NY 10549 from the decision of Peter J. Miley, Building Inspector, dated March 25, 2024 denying the application dated to permit the one car garage addition.

The property involved is known as 137 Croton Ave, Mt. Kisco and is described on the Village Tas Map as Section 69.63 Block, 2 Lot 2 and is located on the South side of Croton Avenue in a RS-12 Zoning District. Said Appeal is being made to obtain a variance from Section 110-8.C.1.1.3 of the Code of the Village/Town of Mount Kisco which requires a 15 ft. side yard setback. The addition will be 10 ft. side yard making it a 5 ft. variance.

Wayne Spector, Chair
Zoning Board of Appeals
Village/Town of Mount Kisco

10113970

Cutri

State of New York)
) ss:
County of Westchester)

AFFIDAVIT OF POSTING

Gilmar Palacios Chin, being duly sworn, says that on the 15th day of May 2024, he conspicuously fastened up and posted in seven public places, in the Village/Town of Mount Kisco, County of Westchester, a printed notice of which the annexed is a true copy, to Wit: ---

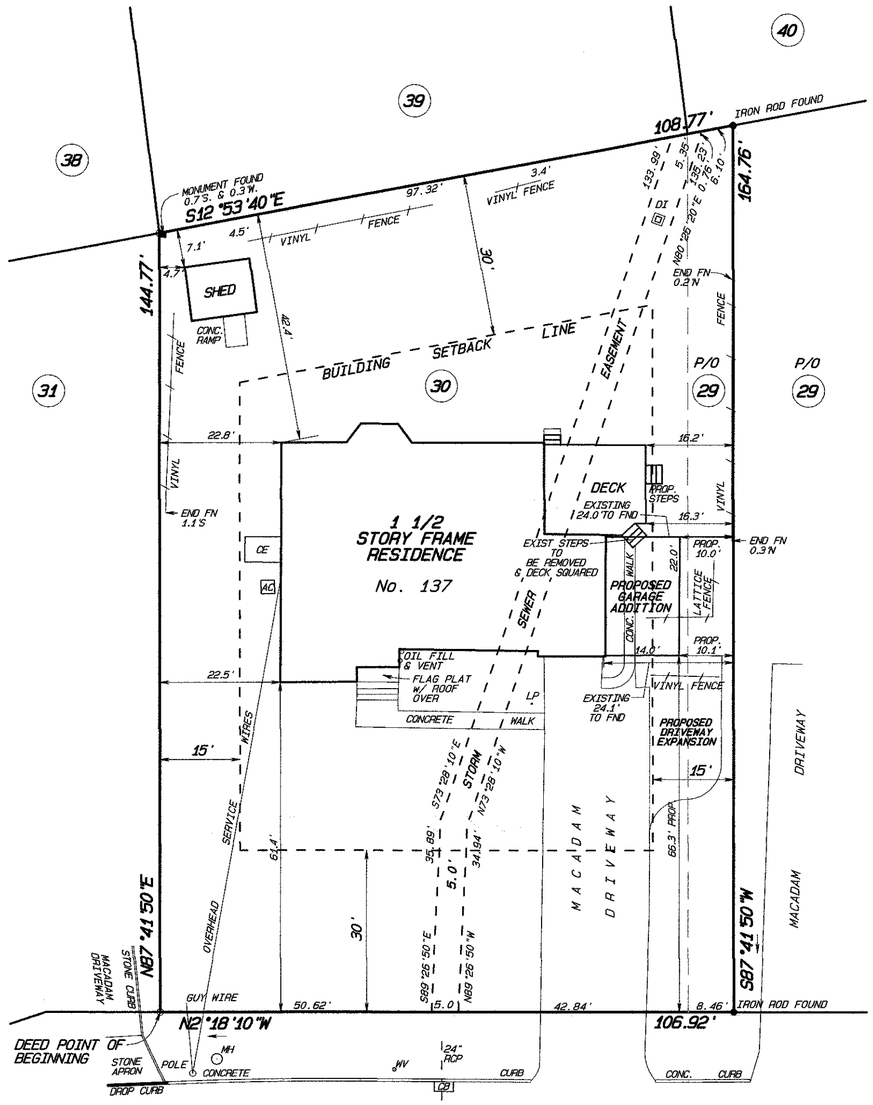
Municipal Building – 104 Main Street	X
Public Library 100 Main Street	X
Fox Center	X
Justice Court – Green Street 40 Green Street	X
Mt. Kisco Ambulance Corp 310 Lexington Ave	X
Carpenter Avenue Community House 200 Carpenter Avenue	X
Leonard Park Multi Purpose Bldg	X

Gilmar Palacios Chin

Sworn to before me this 15th day of May 2024

Michelle K. Russo
Notary Public

MICHELLE K. RUSSO
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RU6313298
Qualified in Putnam County
My Commission Expires 10-20-2026



RS-12 ZONE
LOW-DENSITY ONE-FAMILY RESIDENCE DISTRICT

ZONING CONFORMANCE TABLE			
ITEM	REQUIRED (MINIMUM)	EXISTING	PROPOSED
MINIMUM NET LOT AREA	12,500 S.F.	16,547 S.F.	16,547 S.F.
LOT WIDTH	100 FT	106.92'	106.92'
LOT DEPTH	100 FT	154.77'	154.77'
MINIMUM YARD SETBACKS			
FRONT	30 FT	61.4' RES	61.4' RES
SIDE	15 FT	4.7' SHED/ 16.2' DECK	4.7' SHED/ 10.0' GAR
REAR	30 FT	7.1' SHED/ 42.4' RES	7.1' SHED/ 42.4' RES
MAXIMUM PERMITTED BUILDING COVERAGE	2,150 SF PLUS 20% OF NET LOT AREA IN EXCESS OF 9,000 SF =3,659 SF	2,416 SF	2,718 SF
MAXIMUM BUILDING HEIGHT	2½ STORIES OR 35 FT	1½ STORIES 21'	1½ STORIES 21'
MAXIMUM DEVELOPMENT COVERAGE	40%	4,307 SF OR 26%	4,948 SF OR 30%

Area = 16,547 S.F. or 0.380 Acres

Deed Reference: Control No. 572123746

Tax Identification: Sheet 69.63 Block 2 Lot 2

In accordance with the existing Code of Practice for Land Surveys as adopted by The New York State Association of Professional Land Surveyors, Inc.

Unauthorized alteration or addition to a survey map bearing a Licensed Land Surveyor's seal is a violation of Section 7209, Subdivision 2 of the New York State Education Law.

All certifications are valid for this map and copies thereof only if said map or copies bear the impressed seal of the surveyor whose signature appears hereon.

The location of underground improvements or encroachments hereon, if any exist, are not certified or shown.

MAP REVISED: APRIL 8, 2024
SURVEYED: DECEMBER 27, 2023
MAP PREPARED: JANUARY 9, 2024

BY: _____

NEW YORK STATE LICENSED LAND SURVEYOR NO. 49749
STEPHEN T. JOHNSON, P.L.S.

LICENSED LAND SURVEYOR
STEPHEN T. JOHNSON
No. 49749
STATE OF NEW YORK

H. STANLEY JOHNSON AND COMPANY
LAND SURVEYORS, P.C.
42 SMITH AVENUE P.O. BOX 93
MT. KISCO, N.Y. 10549
TEL. 914-241-3872
FAX. 914-241-0438

DATA: F89-072

PREPARED FOR BUILDING DEPARTMENT PURPOSES ONLY

SURVEY OF PROPERTY
PREPARED FOR

ANTHONY J. CUTRI

AND

BARBARA E. CUTRI

Being Lot No. 30 and a portion of Lot No. 29 as shown on a certain map entitled "Map No. 3 and a portiion of Map No. 1 of property belonging to Mount Kisco Heights Company, etc." said map filed in the Westchester County Clerk's Office, Division of Land Records: November 13, 1917 as Map No. Vol. 47 Page 75

SITUATE IN THE
VILLAGE AND TOWN OF MOUNT KISCO
WESTCHESTER COUNTY, NEW YORK

SCALE: 1" = 20'

PREPARED BY: JAA CHECKED BY: STJ

JOB NO. F14-039.02

ELECTRICAL LEGEND	
⏀	DUPLEX CONVENIENCE RECEPTACLE OUTLET
⏀GFI	DUPLEX GROUND FAULT RECEPTACLE OUTLET
⏀WP	WATER PROOF RECEPTACLE OUTLET
⏀	QUADRUPLEX CONVENIENCE RECEPTACLE OUTLET
$	WALL MOUNTED SINGLE POLE LIGHT SWITCH
$3	THREE-WAY (FOUR WAY) LIGHT SWITCH
	GARAGE DOOR OPERATOR MOTOR
	FLOURESCENT CEILING MOUNTED LIGHT FIXTURE
	WALL MOUNTED INCANDESCENT LIGHT FIXTURE (F.B.O.)
	EXTERIOR FLOOD LIGHT, NUMBER DESINATES NUMBER OF HEADS

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH ALL PREVAILING CODES, INCLUDING BUT NOT LIMITED TO, LOCAL MUNICIPAL CODES, 2020 RESIDENTIAL CODE OF NEW YORK, NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE (INCLUDING 2017 CODE SUPPLEMENT) NATIONAL ELECTRIC CODE, AND THE STATE ENERGY CONSERVATION CODE.

2. THE CONTRACTOR AND SUBCONTRACTORS WILL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY APPARENT DISCREPANCIES IN THE DRAWINGS. IF SUCH NOTICE IS NOT FURNISHED TO THE ARCHITECT, THE CONTRACTOR AND SUBCONTRACTORS WILL BE DEEMED TO HAVE INSPECTED THE DRAWINGS AND SPECIFICATIONS AND FOUND THEM IN PROPER FORM FOR EXECUTION.

3. THE GENERAL CONTRACTOR OR RELATED PLUMBING, HEATING AND ELECTRICAL SUBCONTRACTORS SHALL FILE SEPARATE APPLICATIONS FOR PERMITS, PAY ALL FEES AND ARRANGE FOR ALL NECESSARY INSPECTIONS AND APPROVALS.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK OF SUBCONTRACTORS TO INSURE THAT ALL ITEMS REQUIRED FOR A COMPLETE PROJECT ARE INCLUDED IN RESPECTIVE TRADES. CONTRACTOR MAY SELECT ITEMS OF WORK TO BE PERFORMED BY SPECIFIC QUALIFIED SUBCONTRACTORS FOR PROPER, TIMELY SEQUENCE OF CONSTRUCTION AND TO INSURE COMPLETENESS OF TRADES.

5. THE CONTRACTOR SHALL FILE ALL NECESSARY CERTIFICATES OF INSURANCE AND CERTIFICATE OF OCCUPANCY APPLICATION WITH THE DEPARTMENT OF BUILDINGS. OWNER TO PAY BUILDING PERMIT & CERTIFICATE OF OCCUPANCY FEES. ALL OTHER FEES TO BE PAID BY THE CONTRACTOR. CONTRACTOR TO OBTAIN ALL PERMITS, INSPECTIONS AND PROVIDE ANY AND ALL BONDS REQUIRED BY ANY AGENCY IN ORDER TO DO THE WORK HEREIN DESCRIBED.

6. INSURANCE- CONTRACTOR AND SUBCONTRACTORS SHALL SECURE, PAY FOR AND MAINTAIN DURING CONSTRUCTION ALL OF THE INSURANCE POLICYS REQUIRED BY THE STATE, LOCAL AUTHORTIES AND OWNER. SUBCONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL ALL REQUIRED INSURANCE HAVE BEEN OBTAINED AND CERTIFICATES OF SUCH INSURANCE HAVE BEEN DELIVERED TO THE OWNER. CERTIFICATES OF INSURANCE SHALL COVER ALL WORK PERFORMED BY CONTRACTOR AND EACH OF HIS SUBCONTRACTORS AND MAJOR SUPPLIERS. ALL INSURANCE CERTIFICATES SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR THE BENEFIT OF THE OWNER AND ARCHITECT.

7. COMPLIANCE WITH ALL LOCAL LAWS WITH RESPECT TO BUILDING PLACEMENT, SURVEYS AND OTHER MUNICIPAL REQUIREMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.

SITE WORK:

1. THE CONTRACTOR SHALL VERIFY LOCATION OF PROJECT AND SECURE ALL UTILITIES BEFORE COMMENCING SITE WORK. CONTRACTOR WILL CONSULT WITH "CALL BEFORE YOU DIG" 1-800-962-7962 AND CONDUCT CONSTRUCTION WITH DUE CARE TO AVOID DAMAGE TO EXISTING CONSTRUCTION, UTILITY MAINS, ETC. DURING EXCAVATION AND CONSTRUCTION.

2. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING TREES, SHRUBS, ROCK OUT CROPPING NOT BEING REMOVED AND ANY OTHER SITE CONDITIONS. PROIR TO START OF WORK CONTRACTOR MUST COORDINATE WITH ARCHITECT/OWNER AND LANDSCAPE ARCHITECT AND OBTAIN OWNER'S WRITTEN APPROVAL AND PLAN IN ADVANCE OF REMOVING ANY TREES OR ROCK.

3. NO DEBRIS SHALL ACCUMULATE ON THE JOB SITE. DEBRIS SHALL BE REMOVED AS THE JOB PROCEEDS.

4. CONTRACTOR TO FINAL GRADE, RAKE, SEED AND HAY ALL DISTURBED AREAS PRIOR TO COMPLETING THE PROJECT.

FOUNDATION NOTES:

1. ALL FOOTINGS TO BEAR ONLY ON SOLID UNDISTURBED SOIL. FOOTINGS WILL NOT BE POURED ON DISTURBED SOIL OR FROZEN SOIL. MINIMUM BEARING CAPACITY OF 2 TONS PER SQUARE FOOT.

2. POURED CONCRETE FOOTING 3500 P.S.I. 12"X24" TO HAVE (2) #4 CONTINUOUS REINFORCING BARS EQUALLY SPACED AND NOT LESS THAT 3" FROM BOTTOM OF FOOTING. 1 1/2"X3 1/2" CONTINUOUS KEY, UNLESS OTHERWISE NOTED.

3. 8" CMU FOUNDATION. PROVIDE #4 RE-BARS AT 48" O.C. VERTICAL AND 24" O.C. HORIZONTALLY. FILL BOTTOM COURSE & TOP COURSE SOLID.

4. ANCHOR BOLTS 1/2" DIAMETER X 16" LENGTH AT 6'0" O.C..

5. FOR FOUNDATION WATERPROOFING USE MIRADRI 860/861 SELF ADHESIVE MEMBRANE SYSTEM OR APPROVED EQUAL INSTALLED PER MANUFACTURER SPECIFICATIONS.

6. 2" RIGID INSULATION APPLIED OVER TOP OF FOUNDATION WATERPROOFING FROM FOOTING TO JUST BELOW GRADE, UNLESS OTHERWISE NOTED.

7. 4" DIAMETER PERFORATED PLASTIC FOOTING DRAIN WITH GEOTEXTILE FILTER AND 18" DEEP BANK RUN GRAVEL. CONNECT ALL PIPES TO EXISTING. REVIEW WITH ARCHITECT PRIOR TO STARTING WORK.

NOTE:
THERE IS AN EASEMENT IN THE AREA OF THE ADDITION. CONTRACTOR TO CONFIRM WITH "BEFORE YOU DIG", THE OWNER AND BUILDING DEPARTMENT IN ADVANCE OF EXCAVATION.

FRAMING, PARTITIONS, FLOORING:

1. ALL FRAMING DIMENSIONED FROM FACE OF STUD TO FACE OF STUD, UNLESS OTHERWISE NOTED.

2. EXTERIOR WALLS: 2x4 DOUGLAS FIR STUDS #2 OR BETTER @ 16" O.C., UNLESS OTHERWISE NOTED.

3. WALL SHEATHING: 1/2" A.P.A. EXTERIOR PLYWOOD SHEATHING, 4-PLY MIN., UNLESS OTHERWISE NOTED. NAILED AT 6" AT EDGES; 8" C/C INTERIOR WITH 8d NAILS. CONTRACTOR TO LEAVE 1/4" HORIZONTAL GAP BETWEEN ALL EXTERIOR SHEATHING.

4. CONTRACTOR TO APPLY TYVEK HOUSE WRAP IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AS SOON AS SHEATHING IS INSTALLED.

5. ALL WALLS & CEILINGS TO BE 5/8" FIRE CODE GYPSUM WALL BOARD. TAPED, FLOAT & SAND READY FOR PAINT.

6. INSTALL FIRE STOPS AT ALL HORIZONTAL AREAS WHERE CHASES OR FURRED OUT WALLS AND INCLUDE FRAMED BAYS EVERY 10' PER CODE.

ROOF AND FLASHING NOTES:

1. ROOF SHEATHING: 1/2" A.P.A. EXTERIOR PLYWOOD SHEATHING, 4-PLY MIN., UNLESS OTHERWISE NOTED. NAILED AT 6" AT EDGES; 8" C/C INTERIOR WITH 8dNAILS.

2. NEW ROOF: ASPHALT TO MATCH HOUSE.

3. INSTALL ALUMINUM DRIP EDGE FLASHING ALONG ALL EDGES OF ROOF, UNLESS OTHERWISE NOTED.

EXTERIOR FINISH NOTES:

1. NEW SIDING AS INDICATED ON ELEVATIONS. ALL SIDING TO BE PAINTED BENJAMIN MOORE, COLOR: TBD

2. ALL NEW AZEK TRIM, CORNER BOARDS, FASCIA, ETC. ALL TRIM TO BE PAINTED BENJAMIN MOORE, COLOR: TBD

NOTE: (1)
NO CLIMATE AND GEOGRAPHIC DESIGN CRITERIA TABLE PROVIDED BECAUSE THE EXISTING AND NEW GARAGE BAYS ARE UNHEATED

EXTERIOR DOOR & WINDOW NOTES:

1. GC TO PROVIDE SUPPLIER W/ PLANS, ELEVATION & SCHEDULE. VERIFY INFO AND R.O'S ON DWGS, SHOP DWGS & MFR.'S INFO PRIOR TO ORDER. CONFIRM W/ OWNER, ARCHITECT & MFR WITH SHOP DRWGS BEFORE ORDER. REVIEW QUESTIONS, DISCREPANCIES, ETC. W/ ARCHITECT.

2. ALL WINDOWS TO BE MANUFACTURED BY ANDERSON (UNLESS OTHERWISE NOTED) W/ STANDARD SILLS. ALL UNITS TO INCLUDE:
A. FACTORY PRIMING AT ALL INTERIOR & EXTERIOR WOOD SURFACES.
B. WINDOW HARDWARE TO BE BRUSHED CHROME. DOUBLE HUNG WINDOWS TO HAVE TILT ASSIST HARDWARE.
C. EXT. CASINGS: 3½" FLAT CASING & STANDARD SILL TO MATCH EXISITNG.
D. REFER TO PLANS & ELEVATIONS FOR SWINGS & MUNTIN PATTERNS.
E. INSTALL ALL PER MFR'S WRITTEN SPECIFICATIONS W/ FLASHING, INSULATION, WEATHERSTRIPPING, CAULK, ETC.
F. PROVIDE EXTENSION JAMBS AS REQ'D (V.I.F.) BY WALL CONDITIONS.
G. WINDOW UNITS INSTALLED WITHIN 18" OF ANY OPERATING DOOR TO HAVE TEMPERED HIGH PERFORMANCE GLAZING.
H. TRACK EXTERIOR: WHITE, TRACK INTERIOR: WHITE.

3. GARAGE DOORS TO BE CONTEMPORARY BRUSHED ALUMINUM & GLASS. MANUFACTURER TBD.

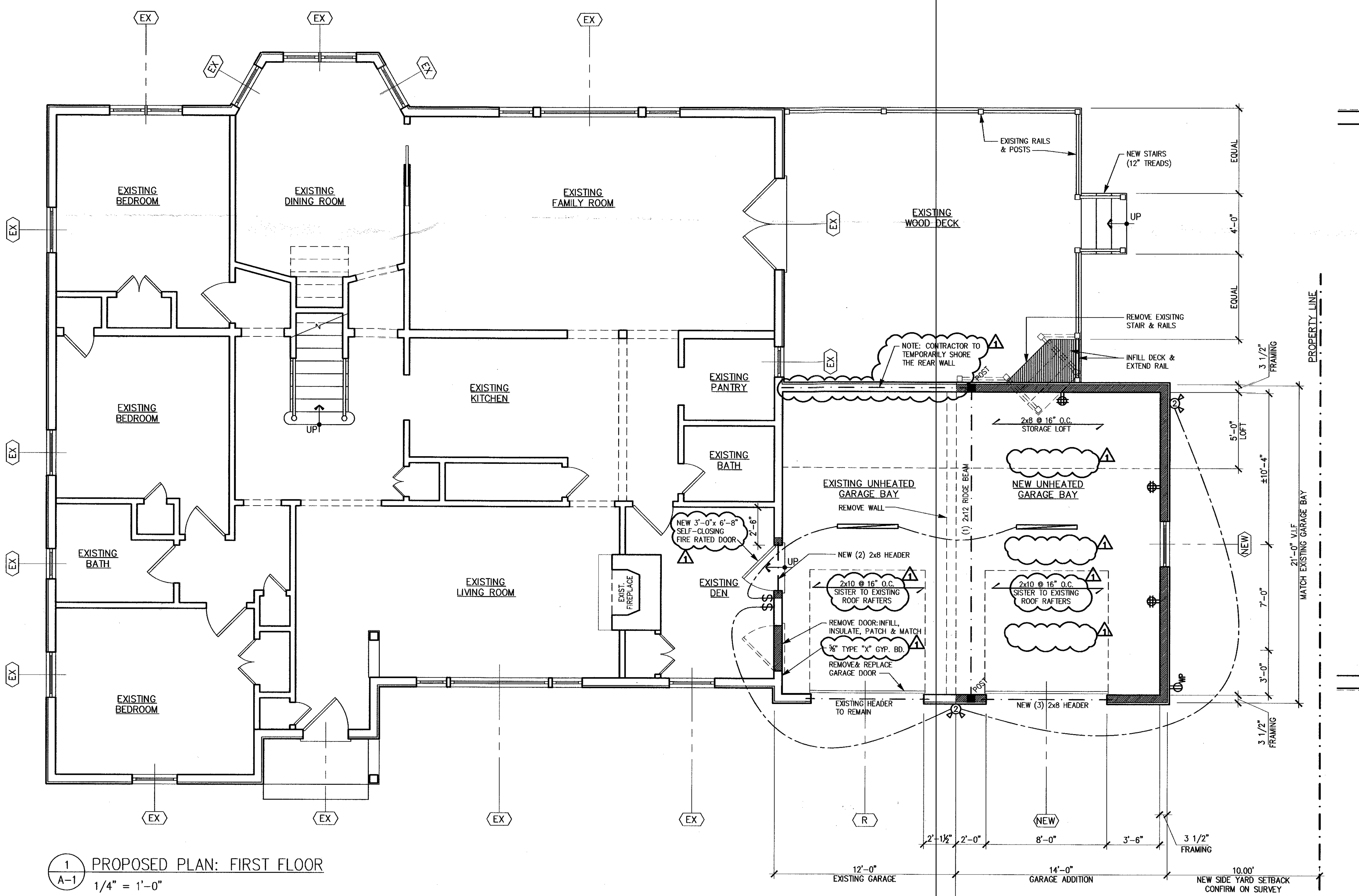
PAINTING NOTES:

1. ALL WALLS, CEILINGS (INCLUDING CLOSETS) TO GET ONE COAT OF PRIMER AND TWO COATS OF LATEX FINISH. OWNER TO SELECT AND APPROVE ALL COLORS AND FINISHES.

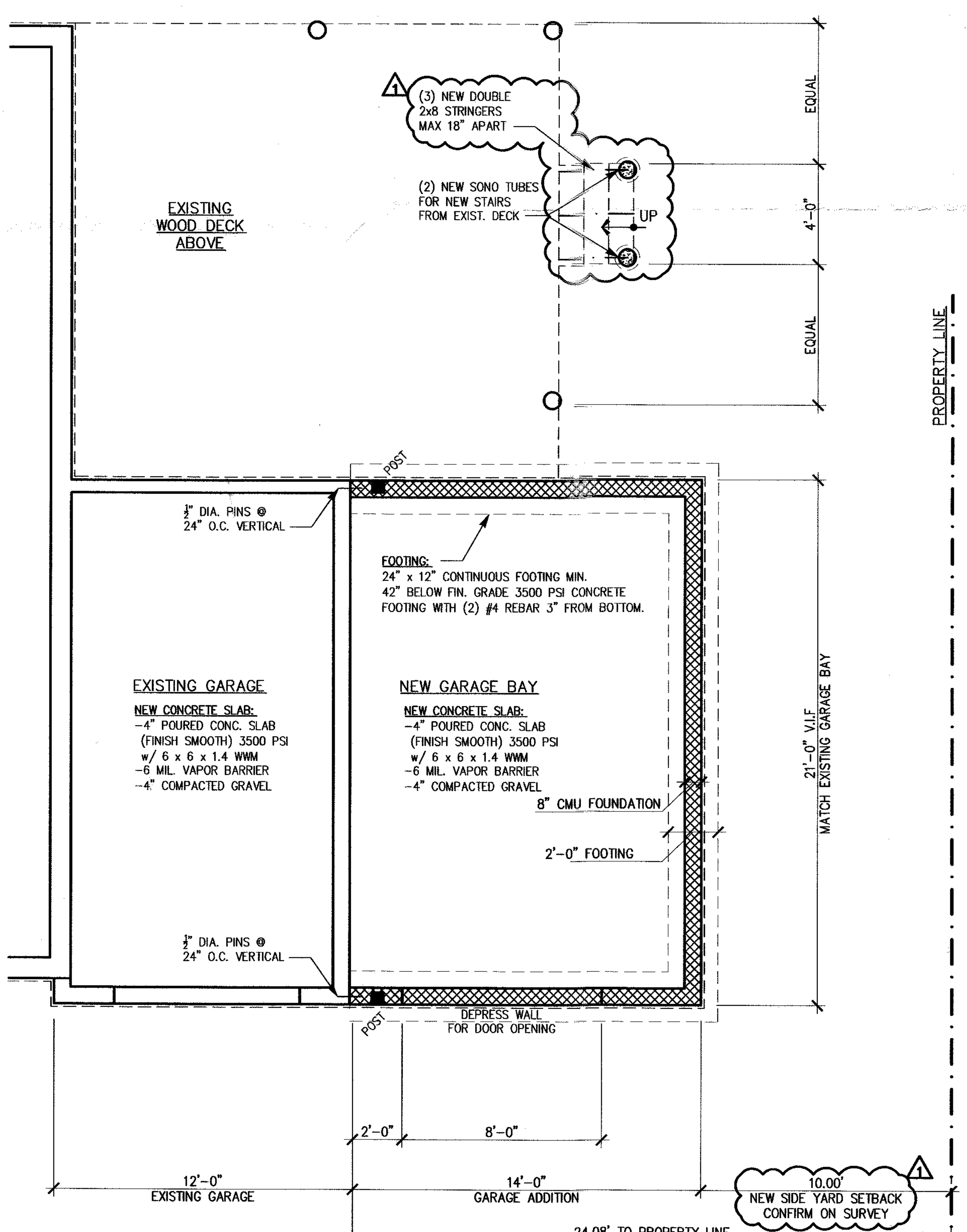
2. ALL INTERIOR TRIM TO GET ONE COAT OF PRIMER AND TWO COATS OF LATEX FINISH. OWNER TO SELECT AND APPROVE ALL COLORS AND FINISHES.

ELECTRICAL NOTES:

1. ALL WORK SHALL COMPLY WITH ALL PREVAILING CODES, INCLUDING, BUT NOT LIMITED TO, LOCAL MUNICIPAL CODES, LOCAL AND STATE FIRE PREVENTION AND BUILDING CODES, NATIONAL ELECTRICAL CODE AND THE LOCAL AND STATE ENERGY CODE. (LATEST ISSUES). ALL ELECTRICAL PERMITS AND INSPECTIONS ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.



1 A-1 PROPOSED PLAN: FIRST FLOOR
1/4" = 1'-0"



2 A-1 PROPOSED PART PLAN: FOUNDATION
1/4" = 1'-0"

RECEIVED
APR 26 2024
Zoning Board of Appeals
Village/Town of Mount Kisco

O'BRIEN ARCHITECTURE, LLC.
24 CLIFFIELD ROAD
BEDFORD, NEW YORK 10506
(914) 646-7691

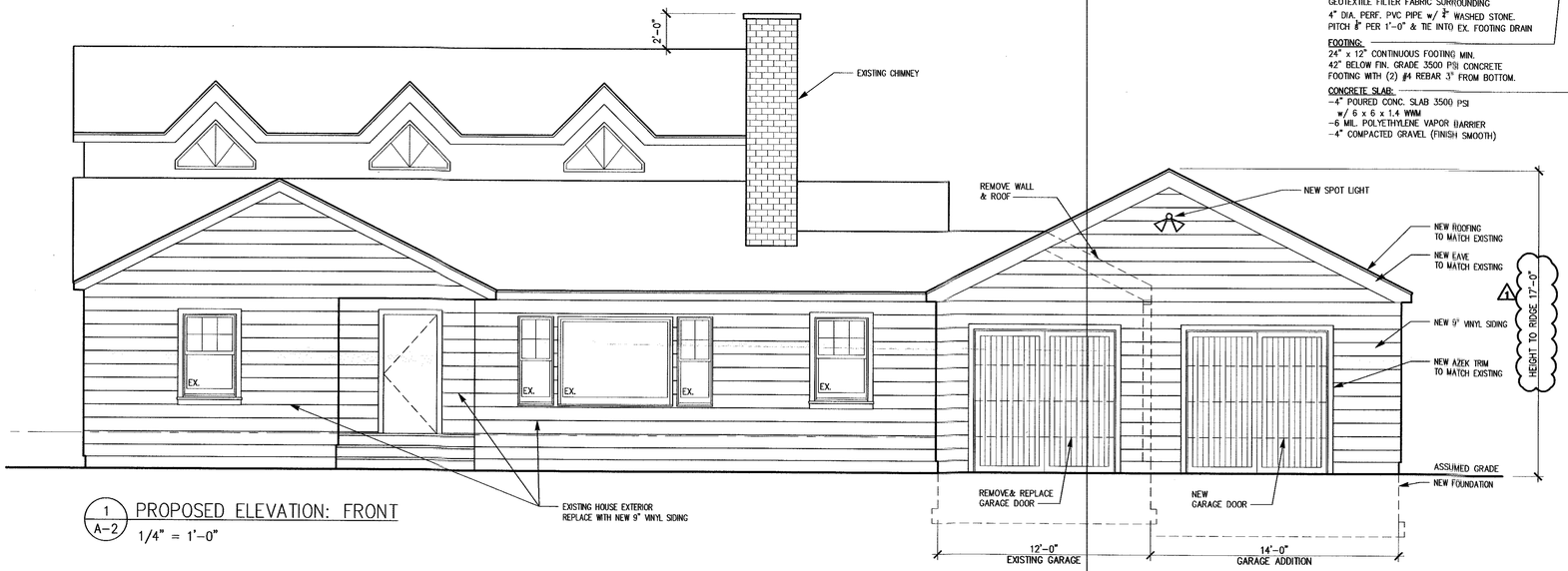
NOTES & PROPOSED
FIRST FLOOR PLAN
FOUNDATION PLAN

SECT:
PLATE:
BLOCK:
LOT:

Cutri Garage Addition
137 Croton Avenue
Mount Kisco, NY

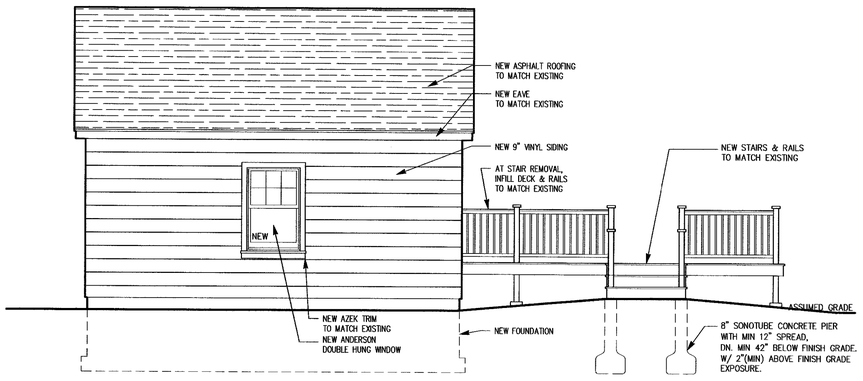
(1)	03.24.24
BID SET:	11.11.23
JOB No:	
DRAWN BY:	L.S.
SCALE:	AS NOTED

A-1

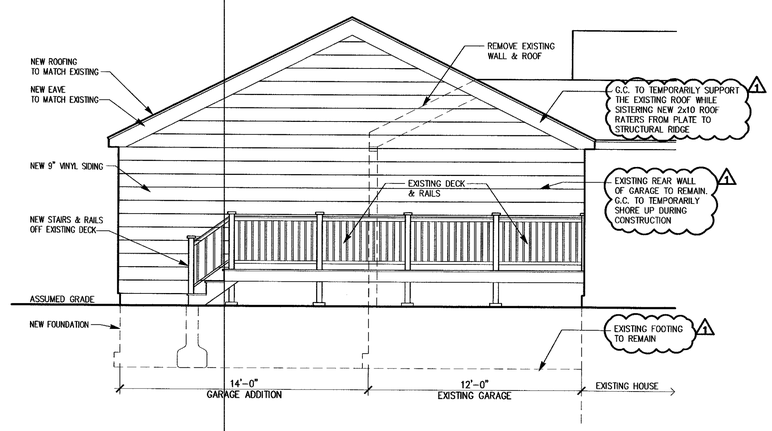


1 A-2 PROPOSED ELEVATION: FRONT
1/4" = 1'-0"

4 A-2 SECTION at GARAGE
1/4" = 1'-0"



2 A-2 PROPOSED GARAGE ELEVATION: SIDE
1/4" = 1'-0"



3 A-2 PROPOSED GARAGE ELEVATION: BACK
1/4" = 1'-0"

O'BRIEN ARCHITECTURE, LLC.
24 CLIFFIELD ROAD
BEDFORD, NEW YORK 10506
(914) 646-7691

PROPOSED ELEVATIONS & SECTIONS

SECT.:
PLATE:
BLOCK:
LOT:

Cutri Garage Addition
137 Croton Avenue
Mount Kisco, NY

1 03.24.24
BID SET: 11.11.23
JOB No:
DRAWN BY: L.S.
SCALE: AS NOTED

A-2

SHOPRITE OF MOUNT KISCO

333 N. Bedford Road, Mount Kisco NY 10549

SITE VIEW

333 N Bedford Road,
Mount Kisco, NY 10549

Client / Store:	Shoprite Mount Kisco
Drawing Name:	
Date: / Drawn By: / Scale:	
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
			1 of 9

SHOPRITE OF MOUNT KISCO

333 N Bedford Road,
Mount Kisco, NY 10549

Client / Store:	Shoprite Mount Kisco
Drawing Name:	
Date:	Drawn By: / Scale:
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
			2 of 9

SHOPRITE OF MOUNT KISCO

EAST ELEVATION

(1) ShopRite script letters
(1) "WELCOME" letters
(1) 10' ShopRite Logo

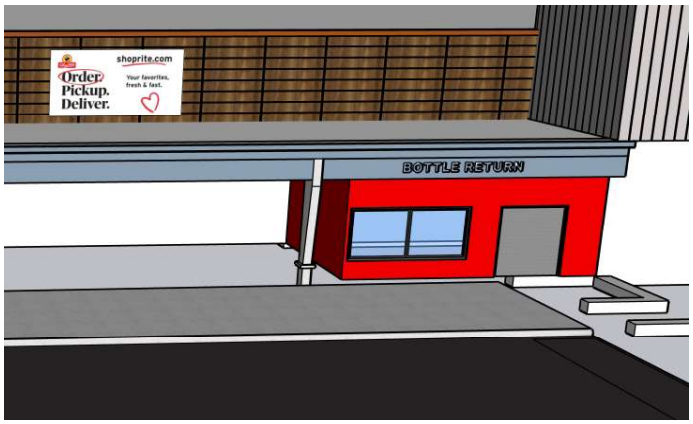
333 N Bedford Road,
Mount Kisco, NY 10549

Client / Store: Shoprite Mount Kisco		
Drawing Name:		
Date:	Drawn By:	Scale:
Revision Date / Revision :		NTS

Quantity:	Job #	Drawing	Page:
			3 of 9

SHOPRITE OF MOUNT KISCO

NORTH ELEVATION



(1) 10' ShopRite Logo
(1) ShopRite script letters
(1) "WELCOME" letters
(1) "BOTTLE RETURNS" letters
(1) "SROPD" LED box

signart graphix
Signage & Decor

333 N Bedford Road,
Mount Kisco, NY 10549

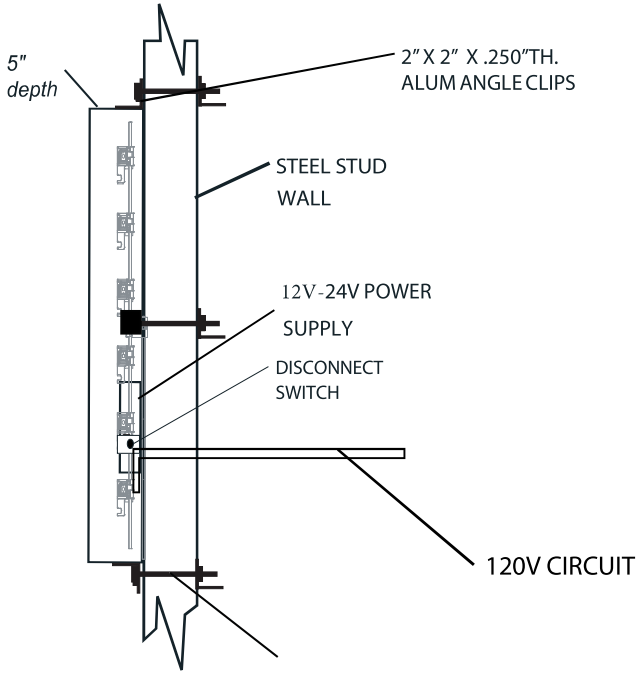
Client / Store:
Shoprite Mount Kisco

Drawing Name:

Date:	Drawn By:	Scale:

Revision Date / Revision : NTS

Quantity:	Job #	Drawing	Page:
			4 of 9



U\L LISTED
Back: 6mm ACM w/ 2"x 2" angle frame
Returns: .063 aluminum / 485 RED
Face: Flexface w/vinyl
Colors: 85 Red, 123 Yellow, Black, White
Power supplies: Hanley 12V-120w/277w
LED's: Hanley PE-4 Phoenix series

FASTENERS: galvanized 1/2"dia. threaded rod,nuts & washers with 3/16" th. steel angle/ unistrut to span studs. / .5" lag bolts

PRODUCT LOGO

130 sq.ft.

signart graphix

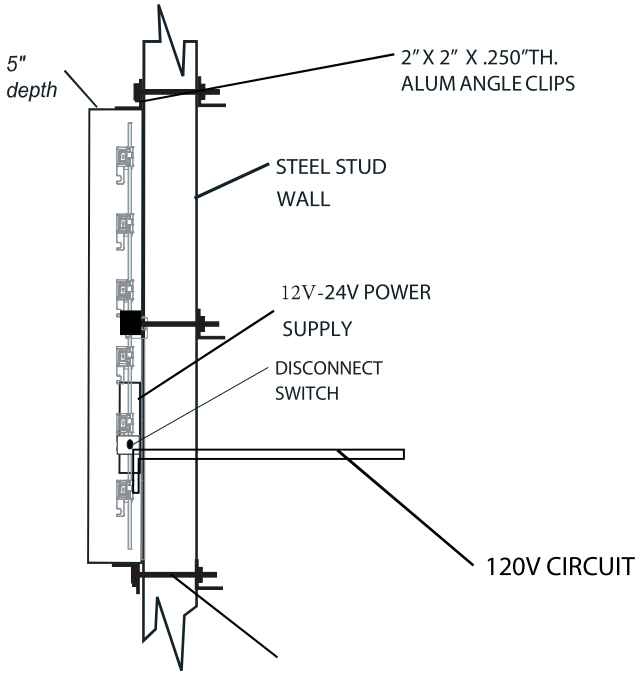
333 N Bedford Road, Mount Kisco, NY 10549

Client / Store:	Shoprite Mount Kisco
Drawing Name:	PRODUCT LOGO
Date:	Drawn By: / Scale:
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
2			5 of 9

SROPD BOX

209.25 sq.ft.



U\L LISTED
Back: 6mm ACM w/ 2"x 2" angle frame
Returns: .040 aluminum / Black
Face: Acrylic w/vinyl
Colors: 2282 Red
Power supplies Hanley 12V-120w/277w
LED's: Hanley PE-4 Phoenix series
FASTENERS: galvanized 1/2"dia. threaded rod,nuts & washers with 3/16" th. steel angle/unistrut to span studs. / .5" lag bolts

333 N Bedford Road,
Mount Kisco, NY 10549

Client / Store: Shoprite Mount Kisco

Drawing Name: SCRIPT LETTERS

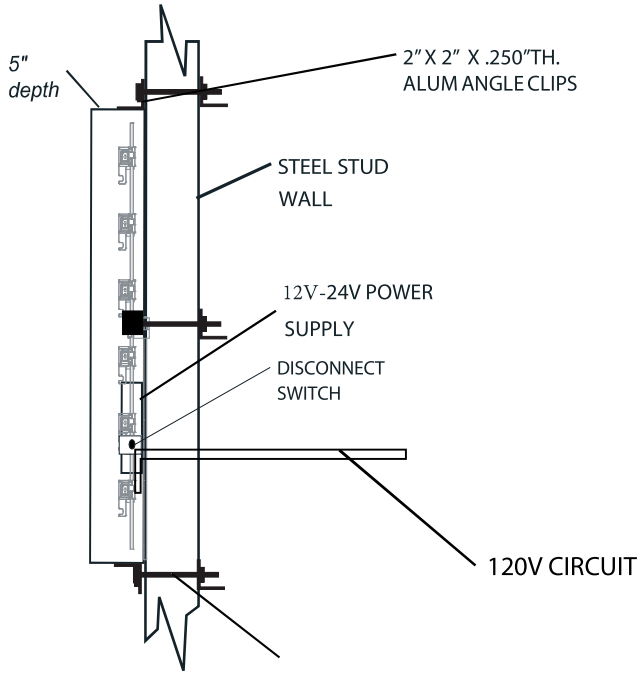
Date:	Drawn By:	Scale:

Revision Date / Revision : NTS

Quantity:	Job #	Drawing	Page:
2			6 OF 9

U\L LISTED
Back: 6mm ACM w/ 2"x 2" angle frame
Returns: .063 aluminum / BLACK
Face: Lexan w/vinyl
Colors: 485 Red, 123 Yellow, Black, White
Power supplies Hanley 12V-120w/277w
LED's: Hanley PE-4 Phoenix series

FASTENERS: galvanized 1/2"dia. threaded rod,nuts & washers with 3/16" th. steel angle/ unistrut to span studs. / .5" lag bolts



SROPD BOX
82.1 sq.ft.

signart graphix

333 N Bedford Road,
Mount Kisco, NY 10549

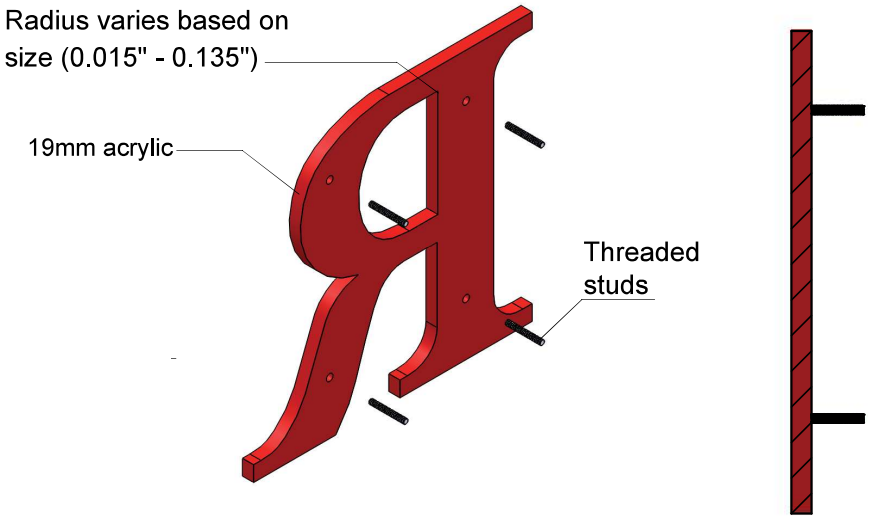
Client / Store:	Shoprite Mount Kisco
Drawing Name:	LED BOX
Date: / Drawn By: / Scale:	
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
1			7 OF 9

Acrylic Letters

(NON - ILLUMINATED)

MOUNTING



Back: 19MM Acrylic
Colors: 485C Red
FASTENERS: stud mounted w/ .25" threaded rod/silicone

SROPD BOX

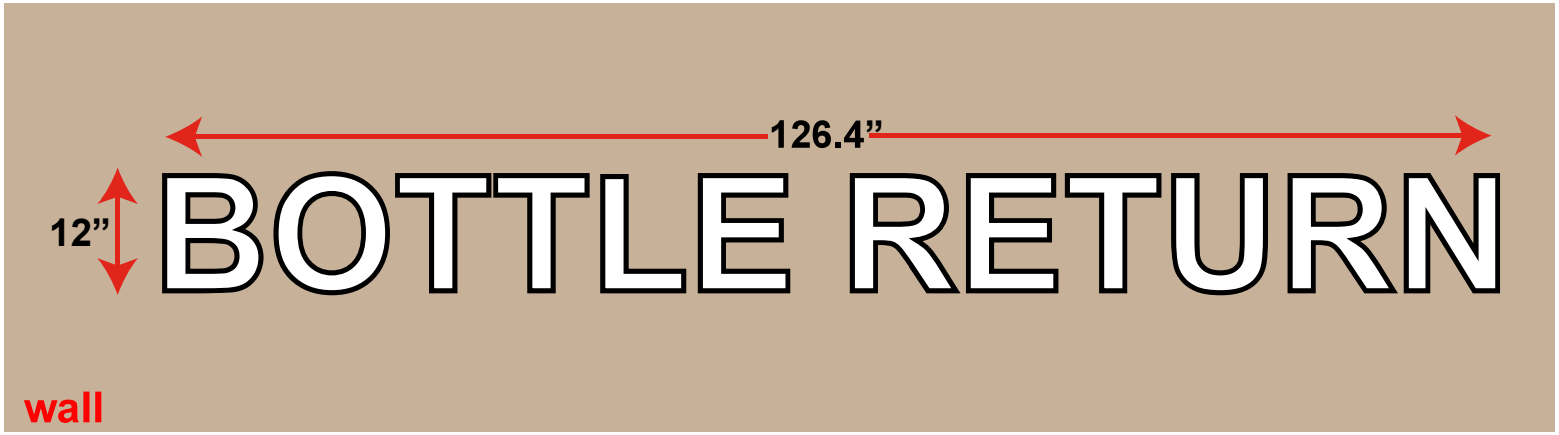
6.8 sq.ft.

333 N Bedford Road,
Mount Kisco, NY 10549

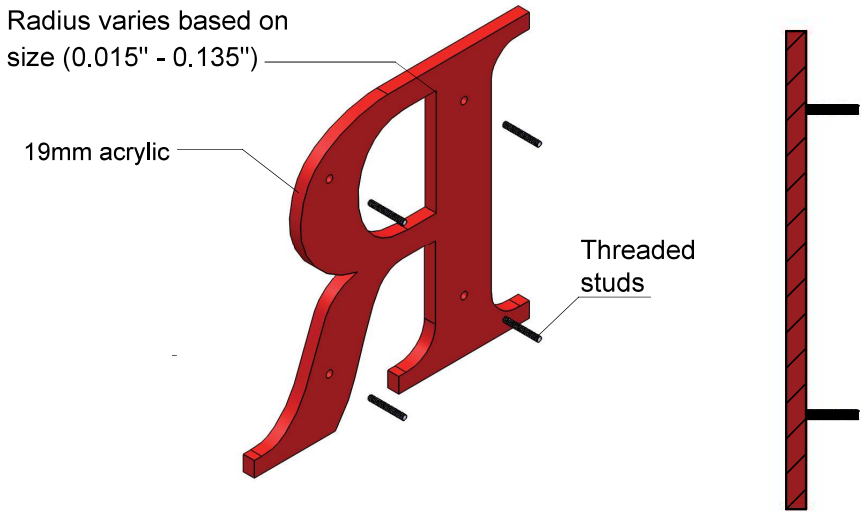
Client / Store:	Shoprite Mount Kisco
Drawing Name:	LETTERS
Date: / Drawn By: / Scale:	
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
2			8 OF 9

Acrylic Letters
(NON - ILLUMINATED)



MOUNTING



Back: 19MM Acrylic
Colors: White
FASTENERS: stud mounted w/ .25" threaded rod/silicone

SROPD BOX
10.5 sq.ft.

signart graphix

333 N Bedford Road,
Mount Kisco, NY 10549

Client / Store:	Shoprite Mount Kisco
Drawing Name:	LETTERS
Date: / Drawn By: / Scale:	
Revision Date / Revision :	NTS

Quantity:	Job #	Drawing	Page:
1			9 OF 9

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MICHAEL SHERIDAN (NY/NJ)
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DAVID L. SNYDER
(1956-2012)

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NEWARK, NEW JERSEY 07102
(973) 824-9772
FAX (973) 824-9774

REPLY TO:

TARRYTOWN OFFICE

April 26, 2024

Honorable Chairman Wayne Spector
and Members of the Zoning Board of Appeals
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

Re: 333 North Bedford Road ("Property")
Public Utility Battery Energy Storage Facility
New Leaf Energy

Honorable Chairman Spector and
Members of the Zoning Board of Appeals:

We are the attorneys for New Leaf Energy ("New Leaf" or "Applicant") in connection with its efforts to develop a public utility battery energy storage facility ("Battery Energy Storage Facility" or "BESS Facility") which will become an integrated component of the region's energy grid and further New York State's goals to achieve state-wide at least 6 gigawatts (GW) of energy storage by the year 2030. The application is for an interpretation of the Zoning Code and in the alternative a use variance, as well as fence height and lot development coverage area variances.

In response to the comments raised at the February 20, 2024 public hearing, enclosed please find (5) copies of the following materials:

1. Tesla Megapack 2XL Data Sheet;
2. Hazard Mitigation Analysis prepared by ESRG, dated April 24, 2024;
3. Revised Full Environmental Assessment Form; and
4. Revised Site Plan.

Please note that on April 1, 2024 the Applicant's representatives met with Fire Chief Hollis and Mr. Miley to review the project. To date, no comments have been received.

We thank you for your consideration and look forward to discussing this matter with the Zoning Board of Appeals at the May 21, 2024 continued public hearing. If you have any questions or require any additional documents, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By: _____
Robert D. Gaudioso

Enclosures
RDG/cae
cc: New Leaf Energy
Peter Miley, Building Inspector (by email)
Z:\SSDATA\WPDATA\SS3\RDG\New Leaf Energy\Mount Kisco\ZBA Filing 04.26.2024\ZBA Letter 04.26.2024.rtf

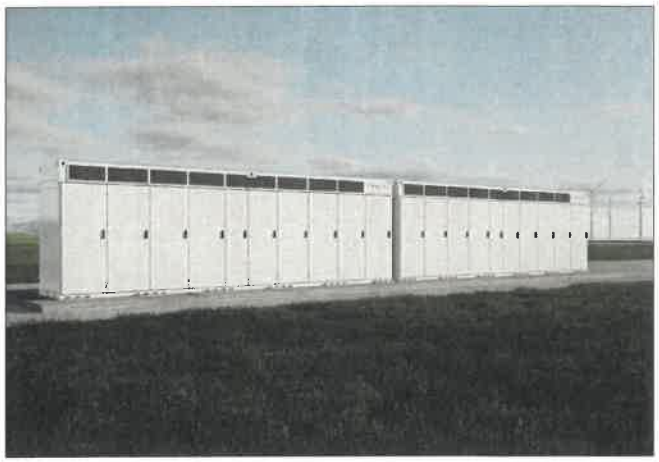
MEGAPACK 2 XL DATASHEET

TESLA.COM/MEGAPACK

Grid transformation for the world's largest energy projects
- Best-in-class energy density and round-trip efficiency
- Industry-leading power electronics and thermal system performance
- Rapid and cost-effective deployment with factory-assembled and pre-tested solution

Scaled and rigorously tested product safety and reliability
- Comprehensive in-house reliability testing by the leading experts in the industry
- Engineered for safety and performance at every level
- Continuous improvement based on large-scale operational experience

Designed with flexibility and configurability in mind
- Modular architecture that allows for a range of configurations across multiple applications
- Industry experts available to identify site-specific needs
- Integrated solution that allows for battery augmentation over time



POWER AND ENERGY

Megapack duration is configurable. Standard configurations are 2-Hour and 4-Hour durations. Nominal energy is specified at 25°C (77°F).

	AC Power per Megapack	Energy per Megapack
2-Hour	1927 kW	3854 kWh
4-Hour	979 kW	3916 kWh

ELECTRICAL

Nominal AC Voltage	480 V AC 3-phase	
Nominal Frequency	50 or 60 Hz	
Inverter Power per Megapack[1]	2-Hour Max: 4-Hour Max:	2400 kVA 1320 kVA
Round-Trip Efficiency[2]	2-Hour: 4-Hour:	92.0% 93.7%

[1] Scalable from 400 kVA minimum *in* increments of 50 kVA
[2] Full-depth cycle including all power conversion and thermal system losses, at 25°C (77°F)

WARRANTY

Coverage	All-inclusive, equipment and energy retention
Term	15 years standard, extendable to 20 years

PART NUMBER

1848844-XX-Y Where X is a number between 0-9 and Y is a letter

MECHANICAL AND MOUNTING

Ingress Ratings	IP66/NEMA 3R (Main Enclosure) IP20 (Thermal System)		
Enclosure Dimensions +/- 13 mm (½ in)	Width: Depth: Height:	8800 mm 1650 mm 2785 mm	(346 ½ in) (65 in) (110 in)
Maximum Weight	38,100 kg (84,000 lb)		
Operating Ambient Temperature	-30°C to 50°C (-22°F to 122°F)		

REGULATORY

System is compliant to grid codes and safety standards of all major markets.

System	NRTL listed to UL 1973, UL 9540, UL 9540A, UL 1741 SB, IEC 62619, IEEE 1547
Cells	NRTL listed to UL 1642

CONTROLS AND COMMUNICATIONS

Protocols	Modbus TCP / DNP3 / REST API	
Core Control Modes	Direct Real Power Direct Reactive Power Frequency Support Virtual Inertia	Ramp Rate Control Site Control Power Factor Control Voltage Control

MONITORING

Powerhub	Free-to-use cloud monitoring portal

TESLA MEGAPACK 2 XL

333 NORTH BEDFORD ROAD BESS - HMA

04/24/2024 | Rev. 1 - Final

SUMMARY

This document serves as a site-specific Hazard Mitigation Analysis performed for the Tesla Megapack 2 XL installation (North Bedford Road) in Mt. Kisco, NY.

Prepared For:

New Leaf Energy
55 Technology Drive, Suite 102
Lowell, MA 01851

Energy Safety Response Group, LLC
8350 US Highway 23 North
Delaware, OH 43015

www.energyresponsegroup.com
1-833-SAFE-ESS

PROJECT DESCRIPTION

Project Name	New Leaf Energy – 333 North Bedford Road HMA
Project No.	23-20581
Prepared For	**New Leaf Energy** 55 Technology Drive, Suite 102 Lowell, MA 01851
Revision No.	Rev. 1
Date of Issue	04/24/2024

Prepared By:

Nick Petrakis
Senior Consultant
nick.petrakis@energyresponsegroup.com

Michael Bowes
Senior Project Engineer
michael.bowes@energyresponsegroup.com

Reviewed By:

Nick Warner
Founding Principal
nick.warner@energyresponsegroup.com

Revision History

Revision No.	Date of Issue	Substance of Change	Prepared By	Reviewed By
Rev. 0	02/15/2023	Draft issue	N. Petrakis	N. Warner
Rev. 1	04/24/2024	Final Issuance	N. Petrakis	N. Warner

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Further, the contents of this document are in no way meant to address specific circumstances, and the contents are not meant to be exhaustive and do not address every potential scenario associated with the subject matter of the document. Site and circumstance-specific factors and real-time judgment and reason may significantly impact some of the subject matter conveyed in this document. Additional resources and actions, which may be beyond the scope of this document, may be required to address your specific issues.

Additionally, laws, ordinances, regulatory standards, and best practices related to the contents of this document are subject to change or modification from time to time. It is your responsibility to educate yourself as to any such change or modification.

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

Energy Safety Response Group (ESRG) has been retained by New Leaf Energy to perform a site-specific Hazard Mitigation Analysis (HMA) in accordance with the *2020 Fire Code of New York State (FCNYS) §1206.5 and NFPA 855 Standard for the Installation of Stationary Energy Storage Systems §4.1.4 Hazard Mitigation Analysis*. This HMA can be utilized to assess the anticipated overall effectiveness of protective barriers in place to mitigate the consequences of a battery-related failure. The analysis was performed based on the current documentation available at the time of the report.

1.2 Applicable Codes and Standards

FCNYS §1206.5 requires that an approved hazard mitigation analysis be performed where allowed as a basis for increasing maximum allowable quantities (MAQ) of energy storage capacity (600 kWh for lithium-ion batteries). The hazard mitigation analysis shall evaluate the consequences of the following failure modes:

1. *A thermal runaway condition in a single ESS rack, module or unit.*
2. *Failure of any battery (energy) management system.*
3. *Failure of any required ventilation or exhaust system.*
4. *Voltage surges on the primary electric supply.*
5. *Short circuits on the load side of the ESS.*
6. *Failure of the smoke detection, fire detection, fire suppression, or gas detection system.*
7. *Required spill neutralization not being provided or failure of a required secondary containment system.*

Similar requirements for hazard mitigation analysis are required by *NFPA 855 §4.1.4* as a basis for increasing maximum stored energy (600 kWh for lithium-ion batteries), though items 4 and 5 above are not required.

Per *FCNYS §1206.5.2,* the fire code official shall be permitted to approve the hazardous mitigation analysis as documentation of the safety of the ESS installation provided the consequences of the analysis demonstrate the following:

1. *Fires will be contained within unoccupied ESS rooms or areas for the minimum duration of the fire-resistance rated separations identified in Section 1206.14.4.*
2. *Fires in occupied work centers will be detected in time to allow occupants within the room or area to safely evacuate.*
3. *Toxic and highly toxic gases released during fires will not reach concentrations in excess of IDLH level in the building or adjacent means of egress routes during the time deemed necessary to evacuate occupants from any affected area.*
4. *Flammable gases released from ESS during charging, discharging and normal operation will not exceed 25 percent of their lower flammability limit (LFL).*
5. *Flammable gases released from ESS during fire, overcharging and other abnormal conditions will be controlled through the use of ventilation of the gases preventing accumulation or by deflagration venting.*

The following key codes, standards, and local requirements are referenced throughout the report:

- *2020 Fire Code of New York State §1206 Electrical Energy Storage Systems*
- *2021 International Fire Code §1207 Electrical Energy Storage Systems*
- *NFPA 855 Standard for the Installation of Stationary Energy Storage Systems*, 2020 Edition
- *NFPA 855 TIA 20-2 (*includes revisions for *§4.12 Explosion Control* and Annexes *A.4.12* and *A.4.12.1*, effective September 15, 2021)
- *UL 9540A Standard for Test Method for Evaluation Thermal Runaway Fire Propagation in Battery Energy Storage Systems,* 4th Edition
- *UL 9540 Standard for Energy Storage Systems and Equipment,* 2nd Edition
- *NFPA 68 Standard on Explosion Protection by Deflagration Venting,* 2018 Edition
- *NFPA 72 National Fire Alarm and Signaling Code,* 2019 Edition

Summary of Findings

Based on review of documentation provided by New Leaf Energy, ESRG finds that adequate protections are provided for the fault conditions listed per *NFPA 855 §4.1.4* and *FCNYS §1206.5.1,* as well as for analysis approval requirements per *NFPA 855 §4.1.4.2*. Key findings include:

- The Tesla Megapack 2 XL is equipped with a number of protection systems (e.g., deflagration control system consisting of overpressure vents and sparker system, BMS control, electrical shutdowns and disconnects, etc.) that are anticipated to effectively manage all applicable fault conditions required per *NFPA 855 §4.1.4* and *FCNYS §1206.5.1.*

NFPA 855 §4.1.4* and *FCNYS §1206.5.1 Hazard Mitigation Analysis Requirements	
Thermal runaway condition in a single module, array, or unit	The system is provided with several passive and active measures to mitigate or contain a propagating thermal runaway condition. UL 9540A testing further shows that the effects of thermal runaway are contained within the module and Unit.
Failure of an Energy Storage Management System	Multiple levels of system monitoring provide redundant protection in the unlikely event of a failure of the energy storage management system.
Failure of a Required Ventilation or Exhaust System	The Megapack 2 XL is not required to have a ventilation or exhaust system. A proprietary explosion protection system is designed to mitigate the effects of flammable gasses generated during an abnormal condition.
Failure of a Required Smoke Detection, Fire Detection, Fire Suppression, or Gas Detection System	The Megapack 2 XL does not rely on dedicated smoke detection, fire suppression, or gas detection systems to mitigate the hazards associated with thermal runaway. Along with subsequent safety actions, the BMS fault notifications are transmitted to Tesla's 24/7 Operations Center, alerting key stakeholders of any abnormal conditions.
Voltage Surges on the Primary Electric Supply	Voltage surges on the primary electric supply are mitigated by BMS and inverter controls, voltage monitoring, and automatic disconnects.
Short Circuits on the Load Side of the ESS	Short circuits on the load side are mitigated by BMS controls and automatic safety actions.

- The Tesla Megapack 2 XL is compliant with all applicable Analysis Approval requirements per the 2020 *FCNYS §1206.5.2.*

2020 FCNYS §1206.5.2 – Analysis Approval	
Fires will be contained within unoccupied ESS rooms or areas for the minimum duration of the fire resistance rating identified in 1206.14.4.	N/A – The Megapack 2 XL is intended for outdoor installations.
Fires in occupied work centers will be detected in time to allow occupants within the room or area to safely evacuate.	N/A – The Megapack 2 XL is not intended for installation within occupied work centers.
Toxic and highly toxic gases released during normal charging, discharging, and operation will not exceed the PEL in the area where the ESS is contained.	N/A – Lithium-ion batteries do not release toxic or highly toxic gases during normal charging or discharging operations.
Toxic and highly toxic gases released during fires will not reach concentrations in excess of immediately dangerous to life or health (IDLH) level in the building or adjacent means of egress routes during the time deemed necessary to evacuate any affected area.	Internal Unit level testing conducted on the products of combustion from the Megapack 2 XL indicated that there was no Mercury (Hg) observed, and trace levels of HF far below NIOSH Immediately Dangerous to Life or Health (IDLH) levels.
Flammable gases released during charging, discharging, and normal operation will not exceed 25 percent of the LFL.	N/A – Lithium-ion batteries do not release flammable gasses during charging, discharging, or normal operations.
Flammable gases released from ESS during fire, overcharging and other abnormal conditions will be controlled through the use of ventilation of the gases, preventing accumulation, or by deflagration venting	The Megapack 2 XL is provided with a proprietary explosion protection system. The effectiveness of the explosion protection system was validated during internal destructive fire testing.

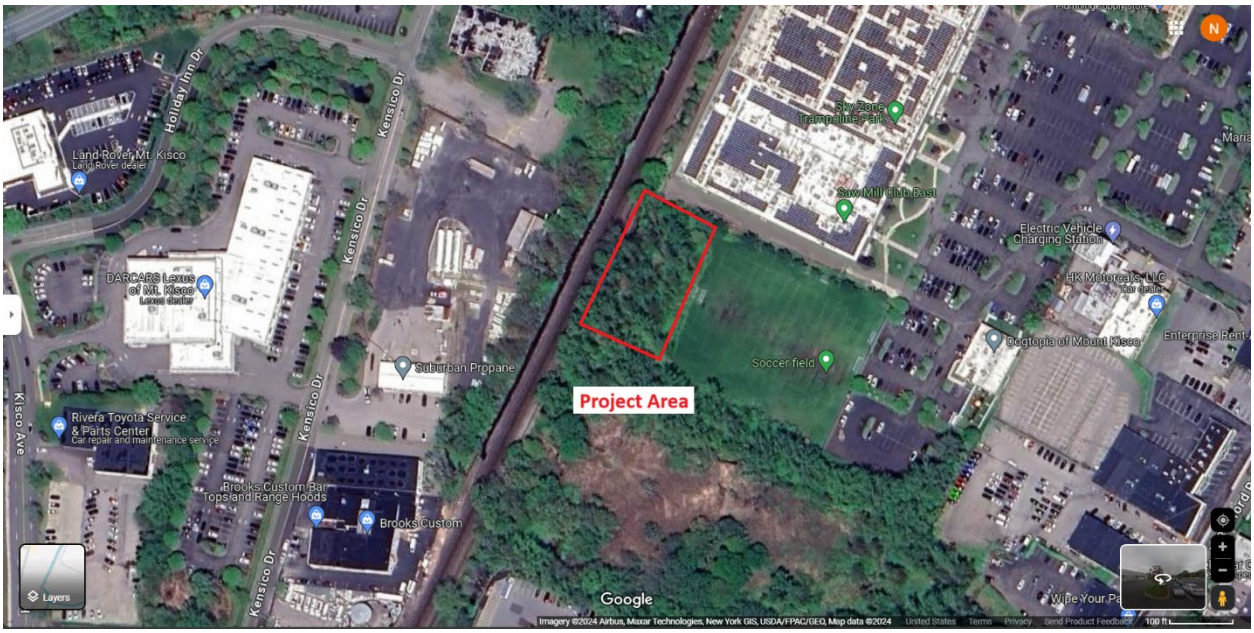
- The proposed BESS facility and location poses minimal risk to public or life safety and property by way of being on a secured site away from public spaces or roadways with no public access to the site. It is recommended that training is provided to the First Responders to familiarize themselves with the site and hazards associated with lithium-ion ESS and are instructed to stay at a safe distance in the unlikely event of a system failure.

- Voluntary fire propagation modeling was conducted by Tesla to determine the anticipated impacts on representative target Megapack 2 XL units from an external heat flux generated by a failing unit. Even with worst-case wind scenarios taken into account, in the unlikely event of a Megapack 2 XL fire, the model shows that thermal runaway would not propagate to the adjacent units that are installed as per Tesla's site design requirements.

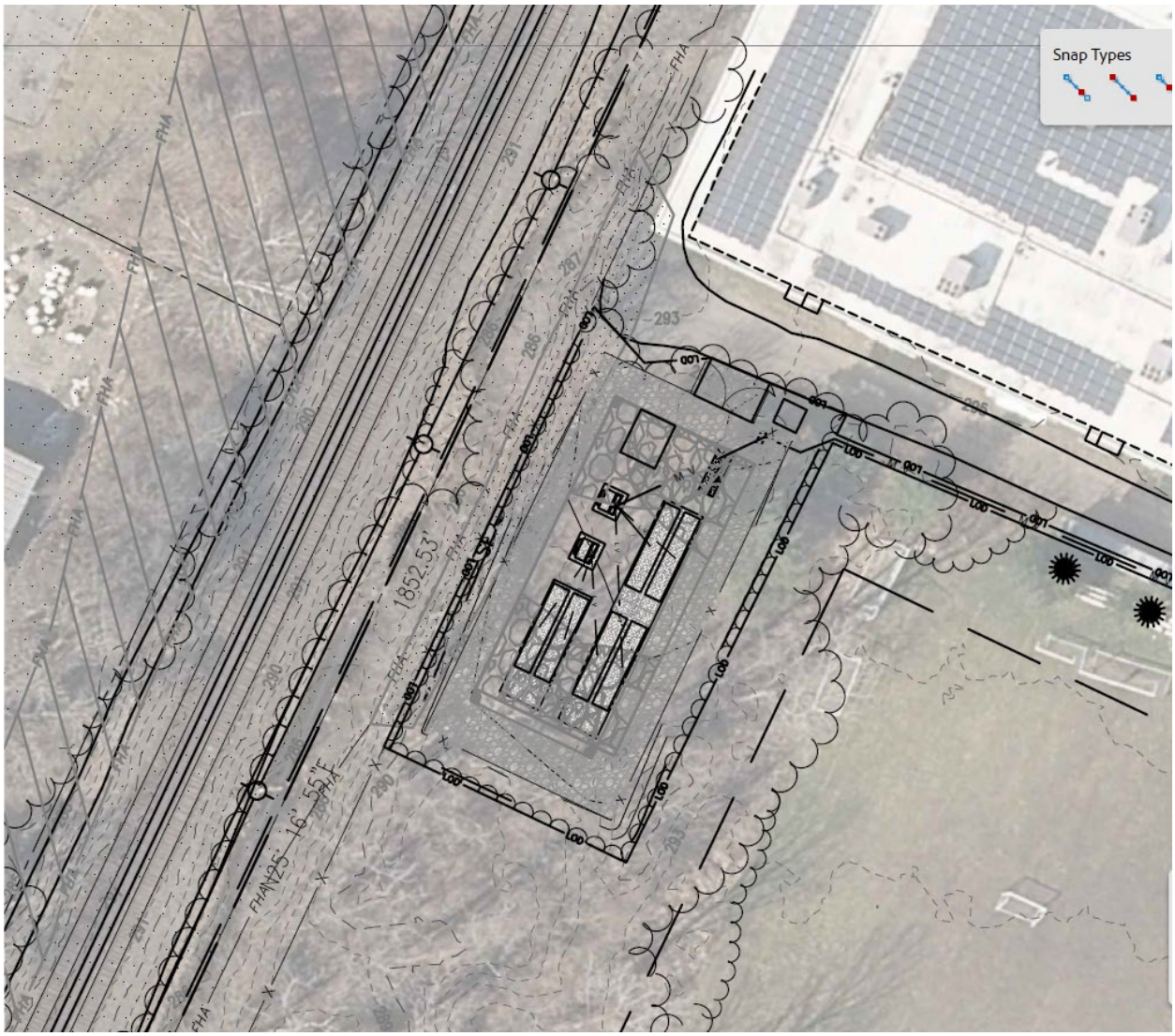
2 SITE DESCRIPTION

2.1 Site Overview

The proposed BESS facility is proposed to be located within Mount Kisco NY, adjacent to the existing commercial use facility (Sky Zone Trampoline Park) at coordinates 41°13'06.6"N 73°43'19.7"W. Access to the facility is provided via North Bedford Road and internal driveway. The facility will be fully bounded by chain-link fencing around all exposures.



Access to the facility will be provided via a 15' wide gravel vehicle access road adjacent to the commercial facility, with access from the parking lot. The facility access gate will be located directly to the Northern portion of the BESS facility.



The site will be comprised of six (6) Tesla Megapack 2XL Battery Energy Storage Systems (BESS), for a total system capacity of 20.00 MWh.

2.2 Nearby Exposures

The Megapack 2 XLs will be sited outdoors. The nearest exposures to the BESS are the soccer field to the southeast (approximately 45 ft from the nearest Megapack 2XL), the single-story commercial use structure to the north (approximately 80 ft from the nearest Megapack 2XL) and the Metro North train tracks to the west (80 ft from the nearest Megapack 2XL).

2.3 Fire Department Access and Water Supply

The Mt. Kisco Village Fire Department is located approximately 1.3 miles away and are anticipated to arrive on-scene in expeditiously after receiving emergency alert from the Central Station Monitoring facility.

The site will be provided with access to a municipal water supply (Hydrants) to support first responder operations.

3 ENERGY STORAGE SYSTEM DESCRIPTION

3.1 Megapack 2 XL Overview

The Tesla Megapack 2 XL (which may also be referred to as MP2 XL throughout this report), is a modular, fully integrated, AC-coupled battery energy storage system (BESS or ESS). The Megapack 2 XL is a design evolution of Megapack 2 and leverages the same core technology platform (cells, vents, sparker system, etc.). The Megapack 2 and 2 XL utilizes lithium iron phosphate (LFP) battery cells provided by CATL, as opposed to the nickel manganese cobalt oxide (NMC) and nickel cobalt aluminum oxide (NCA) cells used in the Megapack 1.

The Megapack 2 XL and constituent components are tested and certified to UL 9540, UL 1642, UL 1973, IEC 62619, and IEC 62933-5-2. UL 9540A (4th Edition) large-scale fire testing was performed at the Cell, Module, and Unit level (Installation level testing was not required, as all Unit level performance criteria were met). From the UL 9540A Unit level report by TUV, “Based on the limited module propagation observed during MP2 testing (7 cells in runaway) the behavior would be the same with MP2 XL. With the increase in volume and sparker count, the deflagration risk is minimized. The testing performed on MP2 is considered harsher with higher gas concentrations, and fundamental engineering analysis for MP2XL shows comparable behavior as worst case”.

Figure 2-1 – Megapack 2 XL Internal Architecture

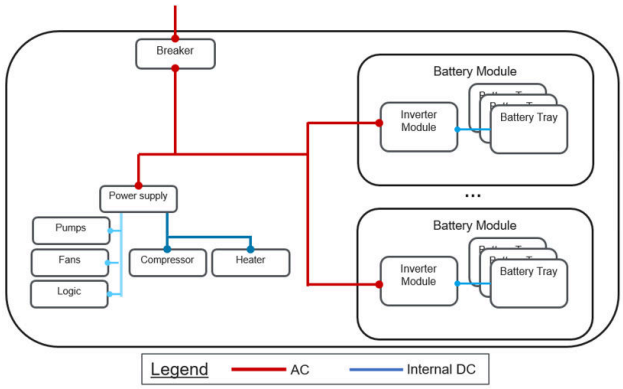
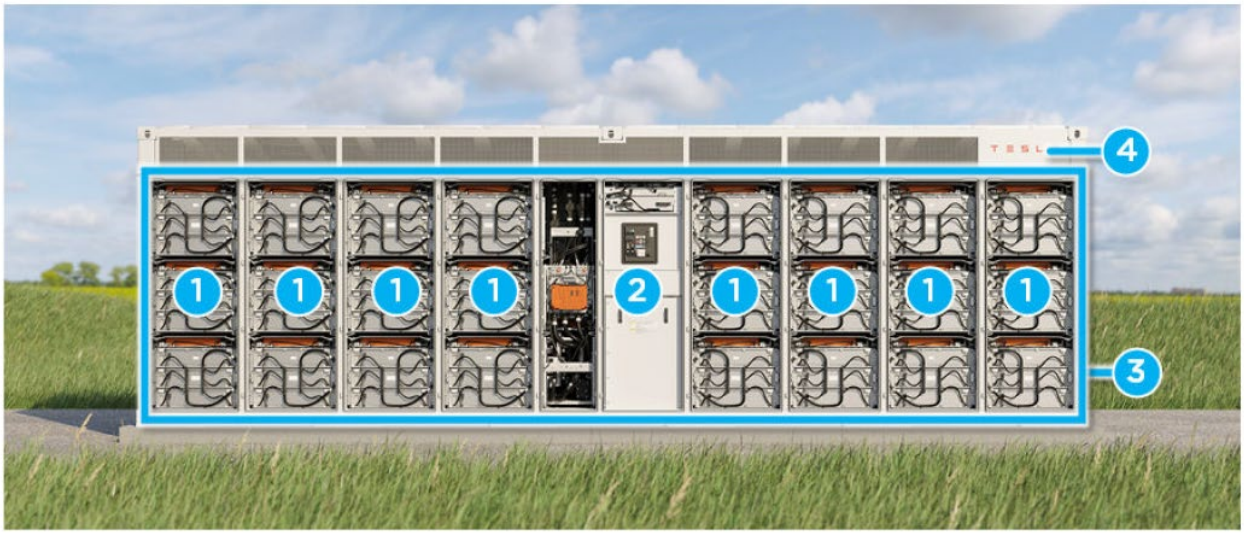


Figure 2-2 - Battery Module

Figure 2-3 - Tesla Megapack 2 XL



1. Battery modules with active and passive fuses – externally serviceable
2. Touch-safe Customer Interface Bay
3. Non-walk-in IP66 enclosure and deflagration mitigation
4. Thermal roof with overpressure vents

For more information on the Tesla Megapack 2 XL, please refer to official product documentation provided by Tesla.

3.2 Fire Safety Features

The Tesla Megapack 2 XL is equipped with a number of fire safety features designed to mitigate the propagation of a battery failure or prevent the failure from occurring altogether. These protections are aligned with the requirements of the 2020 Edition of NFPA 855 and the 2020 FCSNY §1206 Electrical Energy Storage Systems (ESS).

Deflagration Control System

Each Megapack 2 XL is provided with an integral and proprietary explosion mitigation system (deflagration control). This explosion mitigation system is comprised of numerous pressure-sensitive (overpressure) vents located at the top of the Megapack and a sparker system; working in conjunction to ignite any flammable gasses that could be generated within the unit during a failure event. The Megapack 2 XL is provided with twenty-six (26) overpressure vents and 12 sparkers. Any overpressures generated from the ignition of flammable gasses within the unit will be relieved via the nearest pressure-sensitive vents and routed upwards, protecting the Megapack's structural integrity and preventing any hazardous pressure build-up within. The sparkers are located throughout the Megapack at various heights and continuously operate to ensure that any flammable gas build-up is ignited early – limiting the concentration of flammable gas within the unit and activating the pressure-sensitive vents to create a natural ventilation pathway to the exterior.

Battery Management System (BMS)

An integrated Battery Management System (BMS) monitors key datapoints such as voltage, current, and state of charge (SOC) of battery cells, in addition to providing control of corrective and protective actions in response to any abnormal conditions. Each battery module is equipped with a dedicated BMS, with a Megapack-level bus controller supervising output of all modules at the AC bus level. Critical BMS sensing parameters include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will generally first raise an information warning, and then trigger a corresponding corrective action should certain levels be reached.

Fire Detection

In addition to monitoring of thermal sensors within the Megapack by the BMS – which may be transmitted to Tesla's 24/7 Operations Center, described below, an external radiant energy sensing automatic Fire Alarm System will be provided for the facility to satisfy the prescriptive requirements for automatic fire detection for outdoor lithium-ion battery systems per *2020 FCNYS Table 1206.15*. The Fire Alarm application will be filed for review**.**

While the radiant energy sensing detectors were not activated during UL 9540A unit level testing for the Megapack 2 XL (as no fire occurred), full-scale testing of previous

Megapack systems showed that the external third-party multi-spectrum IR detectors effectively detected failure conditions that initiated within the unit.

Site Controller and Monitoring

The Tesla Site Controller provides a single point of interface for the utility, network operator, or customer SCADA systems to control and monitor the entire energy storage site. It hosts the control algorithm that dictates the charge and discharge functions of the battery system units, aggregating real-time information and using the information to optimize the commands sent to each individual Megapack unit.

The Megapack 2 XL is supported by Tesla's 24/7 Operations Center, which is designed to support the global fleet of energy storage products. In conjunction with local operation centers, the Megapack 2 XL has 24/7 remote monitoring, diagnostics, and troubleshooting capabilities. In the event of an emergency, this information may be made available to the Fire Department to provide guidance to emergency response personnel.

Fire Suppression Systems

The Tesla Megapack 2 XL does not rely on any external or internal fire suppression systems to mitigate cascading thermal runaway. Additional full-scale testing and subsequent fire modeling has indicated that the Megapack's passive construction provides a robust thermal resistance from the impacts of an adjacent Megapack during a large-scale failure.

Electrical Fault Protection Devices

Multiple levels of passive and active electrical protections are provided for the Megapack 2 XL. At the battery module level, overcurrent protection is provided for each module in the form of single-use fusible links, providing interruption of overcurrent in the battery module in the case of an abnormal electrical event. Inverter modules, which are installed at each of the battery modules, are equipped with both DC protection via high-speed pyrotechnic fuse for passive or active isolation of battery module, as well as dedicated AC contactor and AC fuses should an abnormal electrical event occur at the inverter module on the AC side of the circuit. Additionally, the Megapack 2 XL is equipped with DC ground fault detection system and AC circuit breaker with ground fault trip settings for distribution system protection.

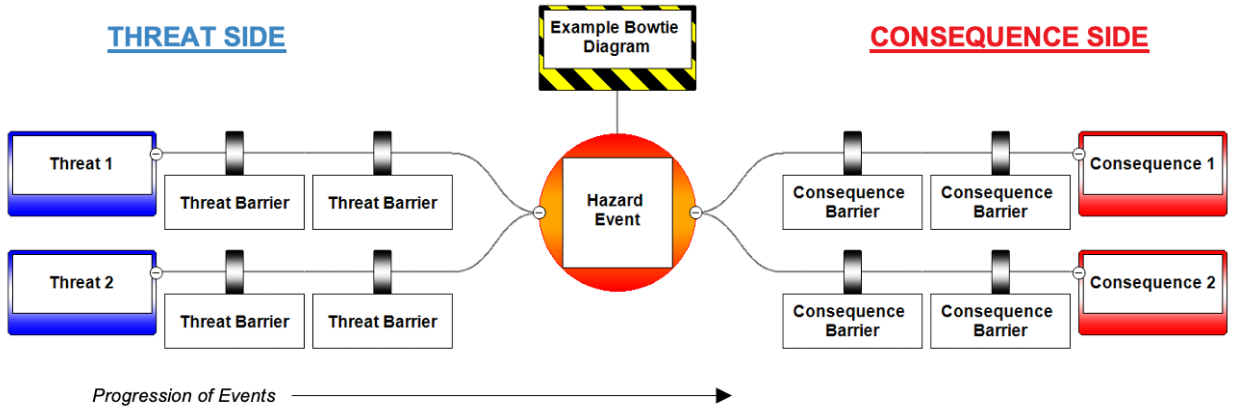
4 HAZARD MITIGATION ANALYSIS

4.1 HMA Methodology

ESRG utilizes the bowtie methodology for hazard and risk assessments, as is described in *ISO.IEC IEC 31010 §B.21*, as it allows for in-depth analysis on individual mitigative **barriers** and serves as a strong tool for visualizing the chronological pathway of **threats** leading to critical hazard events, and ultimately to greater potential **consequences**, as depicted in the figure below.

This simple diagrammatic way of describing and analyzing the pathways of a risk from hazards to outcomes can be considered to be a combination of the logic of a fault tree analyzing the cause of an event and an event tree analyzing the consequences.

Figure 3-1 - Example Bowtie Diagram



Each fault condition per *NFPA 855* and *FCNYS* assessed in Sections 3.4.1 – 3.4.6 below is accompanied by a corresponding bowtie diagram indicating critical *threat* and *consequence* pathways and the mitigative barriers between them. As the most critical risk posed by lithium-ion battery cells comes from the propagation of thermal runaway from a failing cell (or multiple cells) to surrounding cells, this serves as the primary critical hazard for the subsequent failure scenarios.

In addition to main barriers for fault conditions on the *threat* side of the diagram, the *consequence* barriers on the right side of the diagram (e.g., explosion protection and emergency response plan) **also** contribute added layers of safety on top of the main threat barriers shown. It is important to note that the barriers on the left side, along a threat path, are intended to keep the threat from becoming a thermal runaway, while the barriers on the right side, along the consequence pathway, are intended to keep that single thermal runaway from evolving into one of the more severe consequences such as fire spread beyond containment, off-gassing leading to explosion, or fire spread beyond containment. For more on the methodology and relevant terminology, see Appendix B of this report.

4.2 Relevant Supporting Information

UL 9540A Large-Scale Fire Testing

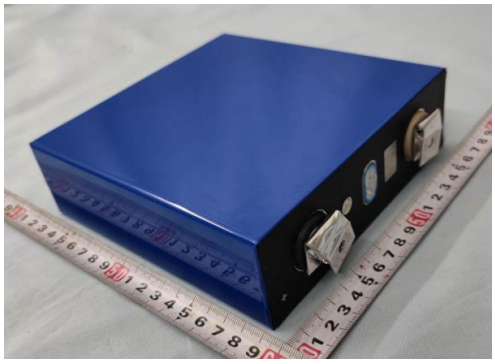
UL 9540A (4th Edition) testing was performed for the constituent Cell, Module, and Unit levels of the Tesla Megapack 2 XL.

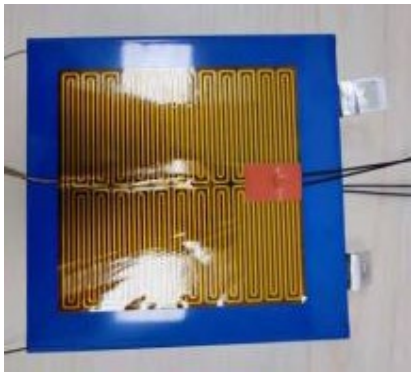
Cell Level and Module Level Test Reports

UL 9540A (4th Edition) Cell level testing was performed on the Contemporary Amperex Technology Co., Ltd. (CATL) 3.22V, 157.2Ah lithium iron phosphate (LFP) battery cell at UL LLC (Changzhou) Quality Technical Service Co., LTD. in December of 2021. Thermal

runaway was initiated via film strip heater. As these performance criteria per *UL 9540A Clause 7.7* and *Figure 1.1* were not met, Module level testing was required.

Figure 3-2 – Cell Level Testing – Flexible Film Heater Installation





Module Level Test Report [2]

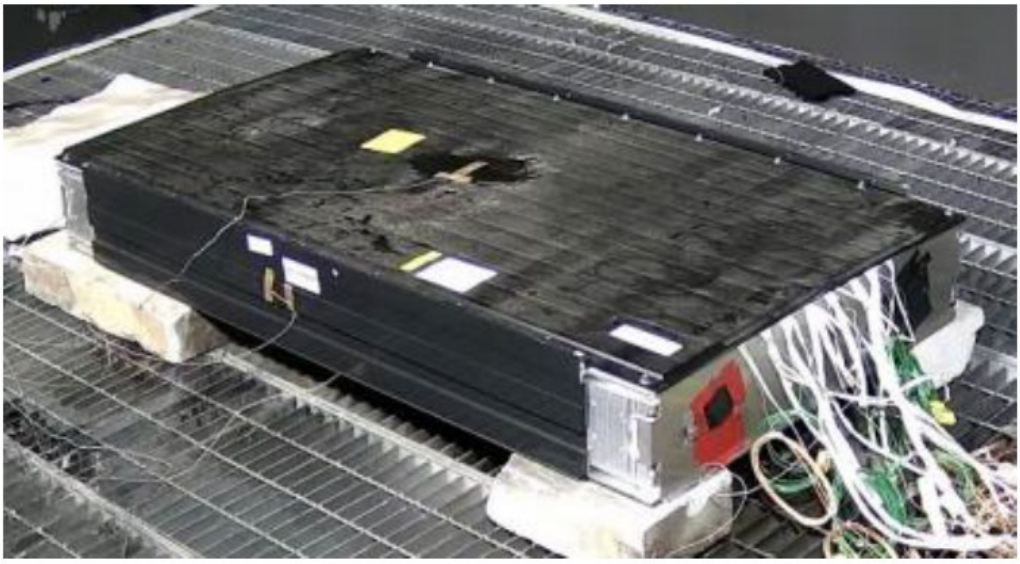
UL 9540A (4th Edition) Module level testing was performed on the Contemporary Amperex Technology Co., Ltd. (CATL) MP2 360.64Vdc, 156Ah battery module at TÜV SÜD SW Rail Transportation Technology (Jiangsu) Co., Ltd. in May of 2022.

Thermal runaway was initiated via film strip heaters installed on both of the wide side surfaces of each cell, similar to the cell level test. In the module level test, however, two cells were heated simultaneously to force multiple cells into thermal runaway at the same time.

Thermal runaway propagated from the initiating cells to all cells within the MP2 tray (module). Sparks and flying debris were observed, however, there were no explosive discharges of gases. Gases generated from the cell were identified as flammable, but there was no detection of toxic gases that are sometimes associated with lithium-ion battery failure such as HF, HCL, and HCN. Unit level testing to the UL 9540A test method is required due to the fact that the gases generated are flammable.

Additional information regarding Cell and Module level testing can be found in the MP2 and MP2XL FPE report by Fisher Engineering.

Figure 3-3 - Highlights of Module Testing



Unit Level Test Report [3]

UL 9540A (4th Edition) Unit level testing was performed for the Tesla Megapack 2 XL model 1748844-XX-Y at TUV Rheinland of North America, Inc. March 9, 2022.

Burn marks were observed on initiating AC battery module, though no external damage was observed. No damage to target units or adjacent walls were observed. All performance criteria for outdoor ground mounted non-residential use ESS were met, therefore Installation level testing was not required.

A full review of Unit level testing was provided by Fisher Engineering, Inc., as is briefly summarized below.

Tesla Megapack 2/XL: Fire Protection Engineering Analysis

A fire protection engineering analysis and UL 9540A Unit level fire test analysis report was provided by Fisher Engineering, Inc. (FEI) which includes review of the Megapack 2 and Megapack 2 XL construction, design, fire safety features, and large-scale fire test data [4]. A brief summary of key takeaways is provided below. For more information, please refer to **Tesla_Megapack_2_and_XL_-_FPE Report_Final.pdf**.

Key takeaways from the report include:

- The MP2 XL design is almost identical to the MP2 other than being greater in length to accommodate the additional battery modules. Given the limited module propagation observed during UL 9540A unit level testing of the MP2 (seven cells went into runaway) the behavior is expected to be no different with the MP2 XL. As such, a stand-alone UL9540A unit level fire test for the MP2XL was not performed. The UL

9540A unit level fire test results, described above for the MP2, can be applied to the MP2XL.

a. Similarly, after reviewing the MP2 unit level fire test results and comparing the MP2 and MP2 XL to one another, TÜV determined the MP2 UL 9540A unit level fire test results can be applied to the MP2XL and an additional UL 9540A unit level fire test for the MP2XL was not required for its listing.

- The largest variant of the Megapack 2 was tested at a worst-case scenario (i.e., 100% SOC with BMS and TMS disabled) to the UL 9540A Unit level fire test method in which six cells within a battery module of the initiating Megapack 2 unit were forced into thermal runaway. Thermal runaway propagated to a seventh cell but did not propagate any further. No propagation to adjacent battery modules or target Megapack units occurred.
- All Unit level performance criteria outlined in 9540A, Table 9.1 for outdoor, ground-mounted ESS were met, therefore Installation level testing was not required. Specifically, these results included:
    a. No flaming was observed outside of the unit.
    b. Surface temperatures of battery modules within the target units did not exceed the temperature at which thermally initiated cell venting occurs. The maximum temperatures recorded at the battery modules of the adjacent cabinets were 13.8°C and 13.2°C, which are significantly below the temperature at which cell venting occurs (174°C).
    c. Surface temperatures of exposures 5 ft (1.52 m) to the side and 8 ft (2.44 m) in front of the initiating unit did not exceed 97°C (175°F) above ambient. The maximum external surface temperatures recorded at the instrumented wall 5 ft to the side was 25.9°C (78.6°F) with a temperature rise above ambient of 5.5°C (9.9°F). The maximum external surface temperatures recorded at the front target 8 ft directly in front of the initiating unit was 16.8°C with a temperature rise above ambient of 5.5°C. These temperatures are significantly below the maximum permitted temperature rise above ambient of 97°C (175°F).
    d. Explosion hazards, including, but not limited to, observations of a deflagration, projectiles, flying debris, detonation, or other explosive discharge of gases were not observed.
    e. Heat flux did not exceed 1.3 kW/m2. The maximum heat flux recorded was 0.0000016 W/m2, which was the sensor installed on the front target cabinet and was the ambient heat flux the sensor was exposed to throughout the test.
- A maximum surface temperature of 16.8°C was measured on the front target Megapack 2 unit installed 8 ft in front of the initiating Megapack 2 unit, and 13.8°C and 13.2°C at the battery modules of the adjacent unit. Based on cell venting and thermal runaway temperatures from 9540A Cell level test report (174°C and 239°C, respectively), propagation to the battery modules within a unit at clearances of 8 ft is not possible.

- Smaller capacity MP2 cabinets, populated with less than nineteen battery modules, would be expected to perform similarly given they are designed and constructed substantially similar (with the same cells, battery modules, fire safety features, etc.) than the larger capacity 3,100 kWh MP2 cabinet tested and described in the Fisher report.
- None of the fire detectors activated during the fire test (two multi-spectrum IR flame detectors and two thermal imagers), which is expected, as no flaming was observed outside of the cabinet during the test; however, previous testing on the Tesla Megapack 1 units demonstrated that multi-spectrum IR flame detectors can detect a fire should flames exit the cabinet through the roof.
- An internal fire suppression system or an external fire suppression system is not required to stop propagating thermal runaway from cell to cell, module to module, or MP2 cabinet to cabinet when near simultaneous failure of up to six cells occurs within the same battery module.
- Manual fire suppression (hose lines) is not required to stop propagating thermal runaway and the spread of fire from a MP2 cabinet to adjacent MP2 cabinets installed 6 in (150 mm) behind and to the sides when a near simultaneous failure of up to six cells occurs within the same battery module.

Tesla Megapack 2/XL: Internal Fire Testing and Modeling

Destructive Unit Level Testing

Voluntary destructive Unit level testing was conducted by Tesla on a representative and fully populated Megapack 2 XL. This destructive fire testing utilized a more aggressive approach than what is required by the UL 9540A test method in order to force the system into a more severe cascading thermal runaway event. This destructive test was conducted to demonstrate the Megapack 2/XL's ability to fail in a safe manner, even in the extreme event of a catastrophic failure within an entire battery module. Additionally, the destructive testing further validated the design of the Megapack 2/XL proprietary explosion mitigation system.

This testing was conducted at the Northern Nevada Research Center on May 19th, 2022. The test utilized fil heaters to simultaneously heat forty-eight (48) cells within a module, creating a severe failure scenario that is well beyond what is contemplated by the UL 9540A test method. The goal of this testing was to assess the risk of a large-scale fire resulting from an initiating Megapack 2/XL during a thermal runaway event propagating to an adjacent Megapack 2/XL. The results of this testing show some key takeaways, as detailed in the Fisher Engineering FPE report:

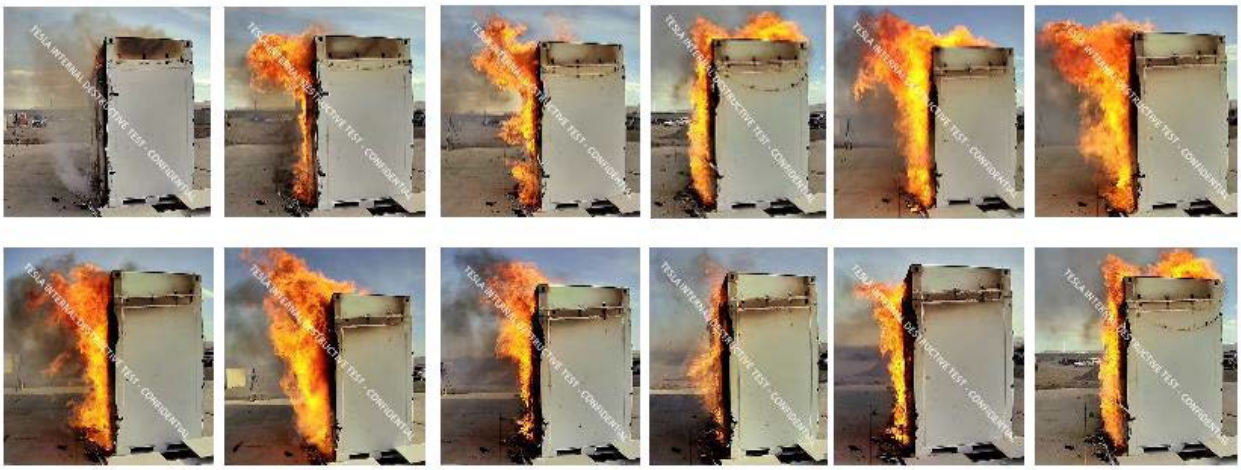
- Thermal runaway propagated from the initiating cells to all the cells in the initiating tray.
- A thermal event occurred, likely initiated by the ignition of flammable gases by the sparker system. An overpressure vent installed above the initiating battery module opened and was visually confirmed through video. The cabinet doors immediately

adjacent to the initiating battery module remained closed. No hazardous pressure waves, debris, shrapnel, or pieces of the cabinet were ejected.

- After approximately 10 minutes of smoking, a sustained fire began within the initiating battery module. The fire spread to the adjacent battery bays until reaching the CIB and stopped. The fire only burned half of the cabinet.
- Fire spread from battery bay to battery bay was a slow progressing event. In total, visible flames were observed for 6 hours and 40 minutes while the four battery bays (bays 7-10) burned, as shown in Figure 18 of the Fisher report.
- Maximum flame heights were observed to be 11.5 ft (3.5 m) from ground to the top of the flame, 2.5 ft (0.75 m) above the top of the cabinet and had a base (a width) of 3.3 ft (1 m) during peak flame intensity. This peak flame intensity occurred approximately 60-90 minutes after initial flaming was observed.
- An analysis of the pressure profile inside the cabinet during the test demonstrated the operation of the explosion control system, as shown in Figure 19 of the Fisher report. Pressure inside the cabinet increased to nearly 11 kPa (1.60 psi) until the deflagration vent opened and the pressure diminished. The overpressure vents are designed to operate at approximately 12 kPa (1.74 psi), or 2.5 times below the cabinet's strength of 30 kPa (4.35 psi).

Fire Modeling – Propagation Model

Subsequent fire propagation modeling was conducted to assess the fire propagation risk to adjacent Megapack 2 XL units during a more severe event such as what was observed during the internal destructive testing referenced in Section 3.2.3.1. This fire propagation model showed that due to the robustness of the system design, it is unlikely that a fire from an initiating Megapack 2 XL would propagate to the adjacent Megapack 2 XL, even during worst-case scenario wind conditions. The modeling assessed two scenarios – a non-flaming event and the impact of heat transfer on a target Megapack 2 XL as well as a flaming event and the impact of radiative heat transfer on a target Megapack 2 XL installed per Tesla's recommendations.



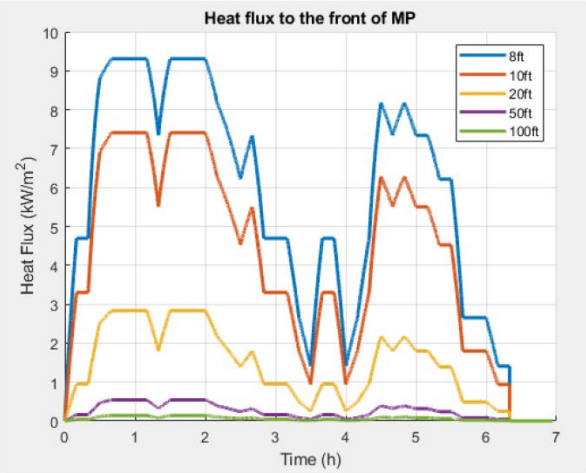
Product of Combustion - Unit Level Testing

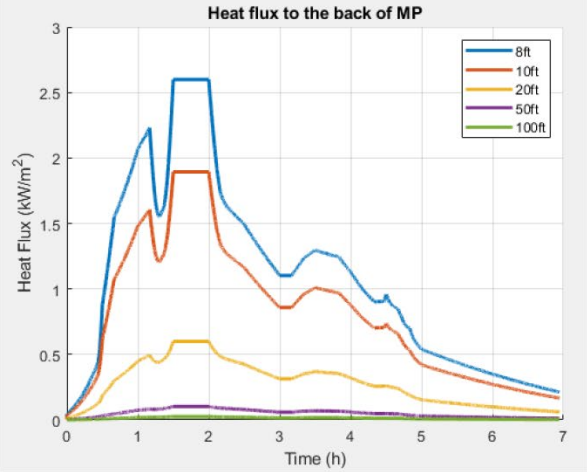
Tesla conducted additional internal Unit Level testing to obtain and analyze the products of combustion from a failing Megapack Unit. The products of combustion were collected at locations 20 ft upwind and 5 ft downwind from the initiating unit to assess airborne contaminants which may be present during an incident. Subsequent third-party analysis concluded that no traces of Mercury were present over the entire 2.5-hour test duration. Hydrogen Fluoride (HF) was detected at values of 0.10 and 0.12 parts per million (ppm) in the two sampling locations over the course of the test – far below accepted NIOSH Immediately Dangerous to Life or Health (IDLH) value of 30 ppm for HF. These results can be extrapolated to the Tesla Megapack 2 XL, as TUV indicated in the UL 9540A unit report that the testing performed on the Megapack 2 is considered “harsher with higher gas concentrations, and fundamental engineering analysis for the Megapack 2 XL shows comparable behavior as worst case”.

4.2.1 Tesla Megapack 2/XL: Heat Flux Analysis

The subsequent fire propagation modeling was conducted to assess the fire propagation risk to adjacent Megapack 2XL units during a more severe event. As mentioned in the report, the heat flux model was utilized to also determine the estimated heat fluxes at distances further from the Megapack 2XL cabinet. These values can be utilized to analyze the risk of flame spreading to exposures in proximity to the MP2XL installation.

The peak heat flux values were utilized for this analysis, utilizing the higher values that are expected at the front of the Megapack 2XL. For conservativeness, it is assumed that the higher heat flux values (front) are experienced at all orientations from the Megapack 2XL.





The heat flux values are estimated (and rounded up for conservativeness) from the peak values of the chart and are prescribed as the following discrete values:

- Approximately 9.5 kW/m2 at 8ft (radius) from the Megapack 2XL
- Approximately 7.5 kW/m2 at 10ft (radius) from the Megapack 2XL

- Approximately 3 kW/m2 at 20ft (radius) from the Megapack 2XL
- Approximately 0.5 kW/m2 at 50ft (radius) from the Megapack 2XL
- Approximately 0.1 kW/m2 at 100ft (radius) from the Megapack 2XL

4.2.1.1 Failure Criteria and Thresholds

There are numerous sources of impacts from heat flux, depending on the data source. The information from NIST utilizes the following information:

Heat Flux is the rate of heat energy transferred per surface unit area - kW/m^2.

Heat Flux (kW/m^2)	Example
1	Sunny day
2.5	Typical firefighter exposure
3-5	Pain to skin within seconds
20	Threshold flux to floor at flashover
84	Thermal Protective Performance Test (NFPA 1971)
60 - 200	Flames over surface

In a conservative manner, the minimum acceptable heat flux shall not exceed 2.5 kW/m2 where First Responders are expected to stage at an extended duration of time.

Additionally, the SFPE Fire Protection Handbook references the maximum allowable heat flux to determine tenability for exposure of skin to radiant heat. That value is 2.5 kW/m2 as well. It is expected that exposure can be tolerated for at least several minutes at heat flux values below this level. This would afford time for people (without PPE) to egress to a safe location.

The CUNY UL 9540A data utilization guidelines reference the SFPE handbook for radiant heat flux values and their observed effects (Table below). As indicated, a critical heat flux of 12.5 kW/m2 can be utilized as a failure threshold to assess the threshold for the potential ignition of combustibles.

Approximate Radiant Heat Flux (kW/m^2)	Comment or Observed Effect
170	Maximum heat flux as currently measured in a postflashover fire compartment.
80	Heat flux for protective clothing Thermal Protective Performance (TPP) Test.[a]
52	Fiberboard ignites spontaneously after 5 seconds.[b]
29	Wood ignites spontaneously after prolonged exposure.[b]
20	Heat flux on a residential family room floor at the beginning of flashover.[c]
20	Human skin experiences pain with a 2-second exposure and blisters in 4 seconds with second-degree burn injury.[d]
15	Human skin experiences pain with a 3-second exposure and blisters in 6 seconds with second-degree burn injury.[d]
12.5	Wood volatiles ignite with extended exposure[e] and piloted ignition.
10	Human skin experiences pain with a 5-second exposure and blisters in 10 seconds with second-degree burn injury.[d]
5	Human skin experiences pain with a 13-second exposure and blisters in 29 seconds with second-degree burn injury.[d]
2.5	Human skin experiences pain with a 33-second exposure and blisters in 79 seconds with second-degree burn injury.[d]
2.5	Common thermal radiation exposure while fire fighting.[f] This energy level may cause burn injuries with prolonged exposure.
1.0	Nominal solar constant on a clear summer day.[g]

4.2.2 Sensitive Exposures

There are numerous sensitive exposures within the vicinity to the proposed ESS that will be evaluated for heat flux impact. All distances to and from these exposures will be taken to the nearest battery system.

Exposure	Distance (ft.)
Soccer Field	45 ft.
Single Story Commercial Structure	80 ft.
Metro North Tracks	82 ft.

4.2.3 Heat Flux and Conclusions

Extrapolating the heat flux data, the 2.5 kW/m2 threshold is located at approximately 28 feet from the front of the nearest Megapack 2 XL unit. All exposures previously indicated are expected to experience negligible heat flux in the rare event of a full Megapack failure and are all outside of the 28 foot boundary.

Emergency Response Guide

A product-level Emergency Response Guide (ERG) was provided by Tesla and provides an overview of the product materials, handling and use precautions, hazards, emergency response procedures, and storage and transportation instructions. Tesla's Emergency Response Guide is publicly available to all First Responders and can be found at: https://www.tesla.com/firstresponders

In addition to this product-level guide, a site-specific Emergency Response Plan (ERP) will provide an additional level of safety and familiarization for first responders who may be arriving on-scene to an incident at an installation utilizing the Megapack 2 XL system.

4.3 Primary Consequences of ESS Failure and Mitigative Barriers

The dynamics of lithium-ion ESS failures are extremely complex, and the pathway of failure events may vary widely based on system design, mitigative approaches utilized, and even small changes in environmental or situational conditions. However, the primary consequences stemming from a propagating lithium-ion battery failure largely fall into a number of specific hazard scenarios, as depicted in the diagram and associated table below (though other scenarios not listed may certainly also occur). These primary consequences serve as the basis for the consequence side of the majority of the fault condition diagrams in the following sections of this report.

While not explicitly detailed in the simplified diagram below, the criticality and effectiveness of the barriers may vary based on associated threat or consequence pathway. For example, a water-based suppression system may be more critical for mitigation of cell or module combustion from spreading, ultimately leading to fire spread beyond containment, than it is for preventing off-gassing within the enclosure, potentially leading to explosion. Similarly, the same water-based suppression system may be more effective for mitigating spread of fire throughout the system than it is for reducing risk of explosion).

Figure 3-4 - Primary Consequence Diagram

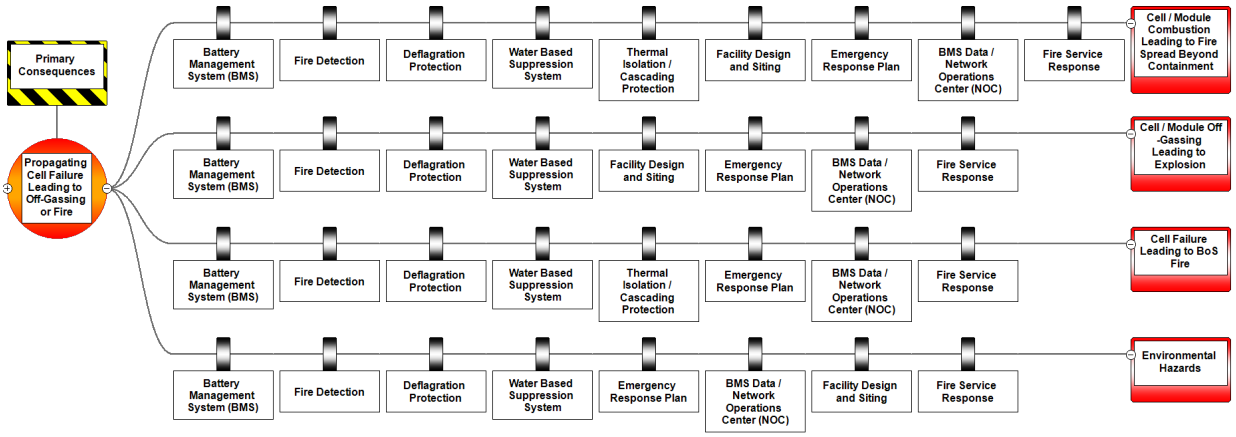


Table 3-1 - Primary Consequence Barriers

PRIMARY CONSEQUENCE BARRIERS	
Battery Management System (BMS)	Critical BMS sensing parameters for the Megapack 2 XL include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will generally first raise an information warning, and then trigger a corresponding corrective action should certain levels be reached.
Fire Detection	External multi-spectrum radiant energy sensing detectors are provided to satisfy automatic fire detection requirements of *2020 FCNYS Table 1206.15*.
Water-Based Suppression System	The Megapack 2/XL does not rely on any external or internal water-based suppression system to prevent or mitigate hazards resulting from large-scale failure.
Deflagration Protection	The Megapack 2 XL is equipped with deflagration protection in the form of pressure-sensitive vents and sparker system designed to ignite any flammable gases and release in a controlled manner before they are allowed to accumulate and create an explosive atmosphere within the enclosure.
Electrical Fault Protection Devices	The Megapack 2 XL is equipped with a number of electrical fault protection in the form of battery module overcurrent protection, inverter DC and AC protection, and ground fault protection.
Facility Design and Siting	The facility is sited with adequate separation distances from sensitive occupancies that may be affected. The BESS installation is provided with adequate separation distances from the nearest exposures.The BESS facility is bounded by a chain-link fence to prevent unauthorized access to the facility.

Emergency Response Plan / First Responders	A product-level Emergency Response Guide (ERG) is provided for the Tesla Megapack 2 XL, outlining key product information, safety hazards, and general emergency response procedures. A site-specific Emergency Response Plan (ERP) will provide an additional level of safety for the installation utilizing the Megapack 2XL.
BMS Data Availability / Operations Center	Tesla Site Controller provides point of interface for the utility, network operator or customer SCADA systems to control and monitor the energy storage site. 24/7 remote monitoring by Tesla's Operations Center will be provided.
Fire Service Response	The site is located within access to the municipal water supply on site (hydrant), and the capabilities of the Fire Department are strong. As recommended in Tesla's Emergency Response Guide (ERG); a defensive firefighting approach shall be utilized, with water sprayed on neighboring exposures and neighboring enclosures if advised by Tesla or at the discretion of the first responders. Site-specific training and installation familiarization for local responding stations may further increase the strength of this barrier, and fire department equipment and capabilities will be strong with this familiarization.

4.4 Fault Condition Analysis

Per *FCNYS §1206.5.1*, the analysis shall evaluate the consequences of the following failure modes and others deemed necessary by the AHJ:

1. *A thermal runaway condition in a single ESS rack, module or unit.*
2. *Failure of any battery (energy) management system.*
3. *Failure of any required ventilation or exhaust system.*
4. *Voltage surges on the primary electric supply.*
5. *Short circuits on the load side of the ESS.*
6. *Failure of the smoke detection, fire detection, fire suppression, or gas detection system.*
7. *Required spill neutralization not being provided or failure of a required secondary containment system.*

For the purposes of this report, it shall be assumed that all construction, equipment, and systems that are required for the ESS shall be installed, tested, and maintained in accordance with local codes and the manufacturer's instructions. The assessment is based on the most recent information provided by New Leaf Energy at the time of this report.

The following table provides a summary of findings from the hazard mitigation analysis performed in fulfillment of the *2020 FCNYS §1206.5.1,* with each fault condition described in greater detail,

accompanied by simplified bowtie diagrams for visualization of mitigative barriers. Additionally, full bowtie diagrams with barrier descriptions are provided in Appendix A.

Table 3-2 - Summary of Fault Condition Analysis

Compliance Requirement	Comments
1. Thermal runaway condition in a single ESS rack, module, or unit	A number of passive and active measures are implemented to reduce the potential of a thermal runaway event from occurring including BMS control and active cooling to internal components. Battery modules and cells have been listed to UL 1973 and UL 1642. Should a thermal runaway event occur, additional mitigative measures are provided to prevent further propagation of failure throughout the system (see Section 3.3 above for list of all consequence barriers).
2. Failure of any battery (energy) storage management system	In the event of a failure of module-level BMS, the Megapack-level BMS (which may be considered "ESMS") shall isolate effected modules, mitigating against further propagation of failure across the system. Should a failure of the Megapack-level BMS occur, each module is equipped with a dedicated BMS to provide corrective actions in case of detection of abnormal operation outside of set parameters. To further isolate any failure stemming from a failure of the energy storage management system, passive and active electrical fault protections are provided at multiple levels, as described in Section 2.2.6 above.
3. Failure of any required ventilation or exhaust system	The Megapack 2 XL does not utilize a system to exhaust flammable gasses, as lithium-ion batteries do not release flammable gas during normal operations. Flammable gasses generated during abnormal operations are mitigated by the Megapack 2 XL's proprietary explosion mitigation system.
4. Failure of the smoke detection, fire detection, fire suppression, or gas detection system	The Tesla Megapack 2 XL does not rely on a dedicated smoke detection, fire detection, or gas detection system for safe operation or to mitigate the effects of thermal runaway. Multi-spectrum infrared (IR) detection, however, is provided to satisfy the automatic fire detection requirements. Should the eternal automatic detection systems fail, it is anticipated that BMS fault notifications shall be transmitted to Tesla's 24/7 Operations Center, alerting system owner to abnormal conditions. Data from

	the BMS may be communicated to the Subject Matter Expert to provide guidance to the fire department in case of emergency. The Megapack 2 XL does not rely on an integrated fire suppression system (such as internal water-based or gas-phase suppression system) to mitigate the hazards associated with propagating thermal runaway. Destructive fire testing and subsequent fire modeling has shown that the robust passive thermal protection of the Megapack 2 XL design will prevent an unlikely fire from cascading to an adjacent Megapack from the initiating system. Furthermore, UL 9540A Unit level testing indicates that no flaming occurred and that no propagation of heat from the initiating unit to adjacent units / modules reached levels capable of initiating cell venting or thermal runaway. It is anticipated that sufficient water will be accessible for defensive operations by firefighters arriving on-site, due to the robust municipal water supply that is provided in proximity to the installation.
5. Voltage surges on the primary electric supply *(FCNYS §1206.5.1(4))*	Voltage surges on the primary electric side are anticipated to be mitigated by the provided BMS and inverter controls, voltage monitoring and automatic disconnect provided by the BMS, in addition to a number of passive circuit protections briefly noted in Section 2.2.6 of this report.
6. Short circuits on the load side of the ESS *(FCNYS §1206.5.1(5))*	Short circuits on the load side of the ESS are anticipated to be mitigated by BMS control and subsequent safety actions, in addition to a number of passive circuit protections briefly noted in Section 2.2.6 of this report.

Thermal Runaway Condition

Thermal runaway, as defined per *NFPA 855 §3.3.20*, is defined as the condition when an electrochemical cell increases its temperature through self-heating in an uncontrollable fashion and progresses when the cell's heat generation is at a higher rate than it can dissipate, potentially leading to off-gassing, fire, or explosion. The cause of a thermal runaway event can range from a manufacturer defect in the cell, external impact, exposure to dangerously high temperatures, or a multitude of controls and electrical failures. Furthermore, a thermal runaway event in a single cell can propagate to nearby cells, thus creating a cascading runaway event across battery modules and racks, leading to more heat generation, fire, off-gassing, and increased potential for a deflagration event.

The Tesla Megapack 2 XL is equipped with a number of passive and active mitigations such as BMS Control and active thermal management system for cooling of internal components to reduce the potential of a thermal runaway event from occurring, as is depicted on the *threat* side of the diagram below. Threat scenarios accounted for include single-cell thermal runaway, multi-cell thermal runaway, and internal defect or failure not resulting in thermal runaway, leading to the primary hazard event (propagating cell failure leading to off-gassing or fire).

Should thermal runaway occur within a battery module, a number of key barriers are provided to mitigate against propagation of failure throughout the system leading to more severe consequences, which are described in detail in Section 3.3 of this report above.

Figure 3-5 - Thermal Runaway Condition Diagram

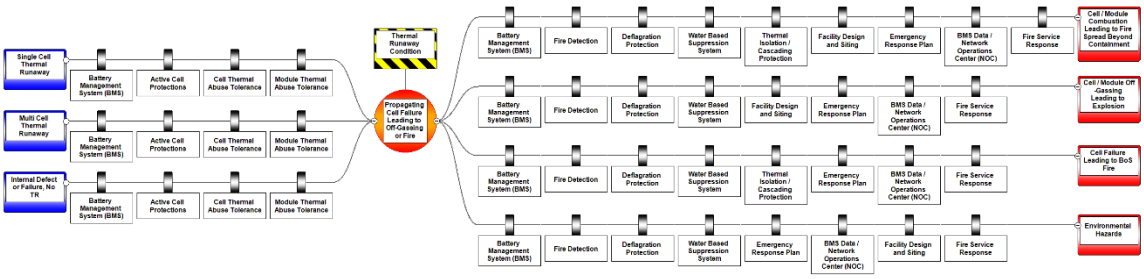


Table 3-3 - Thermal Runaway Condition Barriers

Barrier	Barrier Description
THREAT BARRIERS	
Battery Management System (BMS)	BMS provides sensing and control of critical parameters and triggers protective or corrective actions if system is operating out of normal parameters. Parameters include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will first raise an information warning and then trigger a corresponding corrective action should certain levels be reached.
Thermal Management System	Active thermal management system provides liquid cooling to internal components within the Megapack 2 XL to limit heat diffusion.
Cell Thermal Abuse Tolerance	Cell has been tested and listed to UL 1973 in which thermal abuse tolerance was tested.
Module Thermal Abuse Tolerance	Module has been tested and listed to UL 1973 in which thermal abuse tolerance was tested.
CONSEQUENCE BARRIERS	

See Section 3.3 above for list of primary consequence barriers.

Failure of any Battery (Energy) Storage Management System

The loss, failure, or abnormal operation of an energy storage control system (controllers, sensors, logic / software, actuators, and communications networks) may directly impact the proper function of the system. The Tesla Megapack 2 XL utilizes a tiered hierarchy of controls starting at the module level up to the site level.

In the event of a failure of module-level BMS, the Megapack-level BMS (which may be considered “ESMS”) shall isolate effected modules, mitigating against further propagation of failure across the system. Should a failure of the Megapack-level BMS occur, each module is equipped with a dedicated BMS to provide corrective actions in case of detection of abnormal operation outside of set parameters. To further isolate any failure stemming from a failure of the energy storage management system, passive and active electrical fault protections are provided at multiple levels, as described in Section 2.2.6 above.

Finally, should a propagating thermal runaway occur, a number of key barriers are provided to mitigate against propagation of failure throughout the system leading to more severe consequences, which are described in detail in Section 3.3 of this report above.

Figure 3-6 - Failure of an Energy Storage Management System Diagram

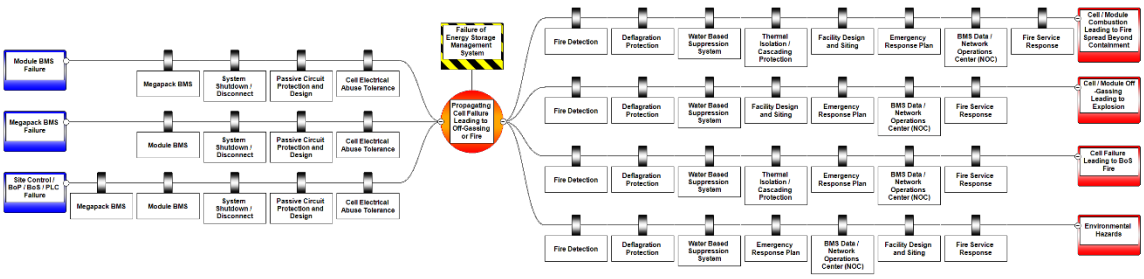


Table 3-4 - Failure of an Energy Storage Management System Barriers

Barrier	Barrier Description
THREAT BARRIERS	
Energy Storage Management System (ESMS)	Megapack-level Energy Storage Management System (ESMS) supervising output of all modules at AC bus level to provide isolation / protective actions in case of module BMS failure.
Module BMS	Module-level BMS to provide isolation / protective actions in case of ESMS failure.
System Shutdown / Disconnect	Multiple levels of passive and active electrical protections are provided for the Megapack 2 XL including module overcurrent protection via fusible links on the DC side of

	the modules, inverter DC and AC protections, and ground fault detection.
Passive Circuit Protection and Design	Fused disconnects and DC disconnect switches, in addition to ground fault detection / interruption and over voltage protection provided.
Cell Electrical Abuse Tolerance	Cell tested and certified to UL 1642 Standard for Lithium Batteries.
CONSEQUENCE BARRIERS	
See Section 3.3 above for list of primary consequence barriers.	

Failure of any Required Ventilation or Exhaust System

The Megapack 2 XL does not utilize a system to exhaust flammable gasses, as lithium-ion batteries do not release flammable gas during normal operations. Flammable gasses generated during abnormal operations and explosion hazards are mitigated by the Megapack 2 XL's proprietary explosion mitigation system.

Failure of the Smoke Detection, Fire Detection, Fire Suppression, or Gas Detection System

The Tesla Megapack 2 XL does not rely on a dedicated smoke detection, fire detection, or gas detection system. Multi-spectrum infrared (IR) detection is provided to satisfy the automatic fire detection requirements of *the 2020 FCNYS Table 1206.15.* Should IR detection systems fail, it is anticipated that BMS fault notifications shall be transmitted to Tesla's 24/7 Operations Center, alerting system owner to abnormal conditions. Data from the BMS may be communicated to a Subject Matter Expert to provide guidance to the fire department in case of emergency.

The Megapack 2 XL does not inherently rely on an integrated or external fire suppression system to mitigate a thermal runaway failure event. A fire is not expected to propagate through the system or to nearby exposures based on UL 9540A Unit level testing, indicating that no flaming occurred and that no propagation of heat from the initiating unit to adjacent units / modules reached levels capable of initiating cell venting or thermal runaway. Destructive fire testing and subsequent fire modeling has further assessed the robustness of the Megapack 2 XL system design and resistance to propagating failures. Furthermore, fire department response is expected to be strong based on training, robust firefighting capabilities and timely response.

Figure 3-7 - Failure of Smoke Detection, Fire Detection, Fire Suppression, or Gas Detection System Diagrams

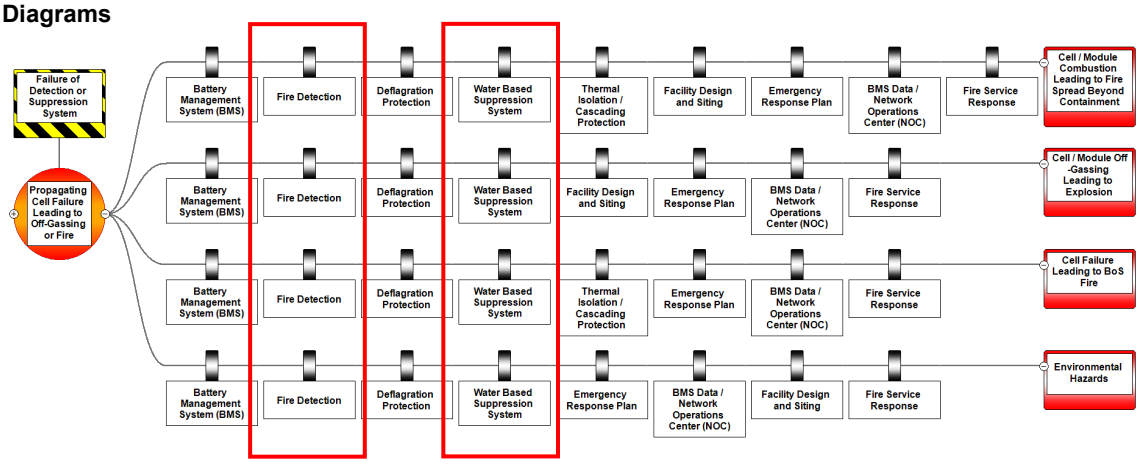


Table 3-5 - Failure of Smoke Detection, Fire Detection, Fire Suppression, or Gas Detection System Barriers

Barrier	Barrier Description
CONSEQUENCE BARRIERS	
Battery Management System (BMS)	BMS provides sensing and control of critical parameters and triggers protective or corrective actions if system is operating out of normal parameters. Parameters include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will first raise an information warning and then trigger a corresponding corrective action should certain levels be reached.
Deflagration Protection	The Megapack 2 XL is equipped with deflagration protection in the form of pressure-sensitive vents and sparker system designed to ignite any flammable gases and release in a controlled manner before they are allowed to accumulate and create an explosive atmosphere within the enclosure.
Thermal Isolation / Cascading Protection	Thermal isolation shown to be effective in limiting heat transfer between Megapacks in UL 9540A Unit level testing.
Facility Design and Siting	Facility design and siting is strong. The system is proposed to be installed in a secured area. The Megapack 2XLs are provided with the minimum required separation distances from the adjacent exposures.
Emergency Response Plan / First Responders	Product-level Emergency Response Guide (ERG) provided by Tesla. An additional level of safety will be provided via site-specific Emergency Response Plans

	(ERP) in accordance with the requirements of the FCNYS.
BMS Data / Operations Center	Megapack data accessible remotely via Tesla's 24/7 Operations Center.
Fire Service Response	Site-specific training and installation familiarization for local responding stations will increase the strength of this barrier, and fire department equipment and capabilities will be strong with this familiarization. Given the adequate water supply within the vicinity of the installation, water will be available for defensive firefighting tactics such as cooling of nearby enclosures or other high-risk exposures (if warranted).

Voltage Surges on the Primary Electric Supply

Voltage surges on the primary electric supply are expected to be largely mitigated by voltage monitoring and corrective actions taken by the BMS. Should corrective actions triggered by the BMS fail to prevent further propagation of failure, a number of electrical fault protections are provided for the Megapack 2 XL, as are briefly described in Section 2.2.6 of this report.

Figure 3-8 - Voltage Surges on the Primary Electric Supply Diagram

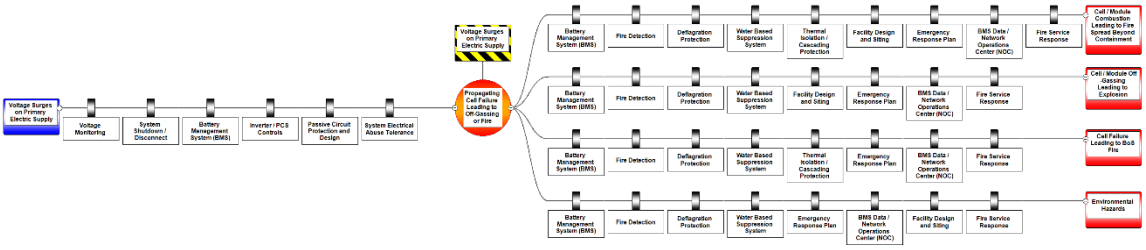


Table 3-6 - Voltage Surges on the Primary Electric Supply Barriers

Barrier	Barrier Description
THREAT BARRIERS	
Voltage Monitoring	Voltage is measured by BMS, triggering fault and alarm monitor indicators, and potential system disconnect or other corrective actions if operating out of normal parameters.
System Shutdown / Disconnect	Multiple levels of passive and active electrical protections are provided for the Megapack 2 XL including module overcurrent protection via fusible links on the DC side of

	the modules, inverter DC and AC protections, and ground fault detection.
Battery Management System (BMS)	BMS provides sensing and control of critical parameters and triggers protective or corrective actions if system is operating out of normal parameters. Parameters include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will first raise an information warning and then trigger a corresponding corrective action should certain levels be reached.
Inverter / PCS Controls	Inverter modules equipped with both DC protection via high-speed pyrotechnic fuse for passive or active isolation of battery module, as well as dedicated AC contactor and AC fuses should an abnormal electrical event occur at the inverter module on the AC side of the circuit.
Passive Circuit Protection / Design	Fused disconnects and DC disconnect switches, in addition to ground fault detection / interruption and over voltage protection provided.
System Electrical Abuse Tolerance	System tested and listed to UL 9540.
CONSEQUENCE BARRIERS	
See Section 3.3 above for list of primary consequence barriers.	

Short Circuits on the Load Side of the ESS

Short circuits on the load side of the ESS are anticipated to be largely mitigated by BMS control and passive circuit protection and design (e.g., fused disconnects, ground fault detection / interruption, and overvoltage protection), as described in previous sections of this report. The Megapack 2 XL has been tested and listed to UL 9540A, demonstrating adequate system electrical abuse tolerance and compatibility of constituent components.

Finally, as is consistent across all previous fault conditions covered above, should propagating thermal runaway occur, a number of key barriers are provided to mitigate against propagation of failure throughout the system leading to more severe consequences, which are described in detail in Section 3.3 of this report above.

Figure 3-9 - Short Circuits on the Load Side of the ESS Diagram

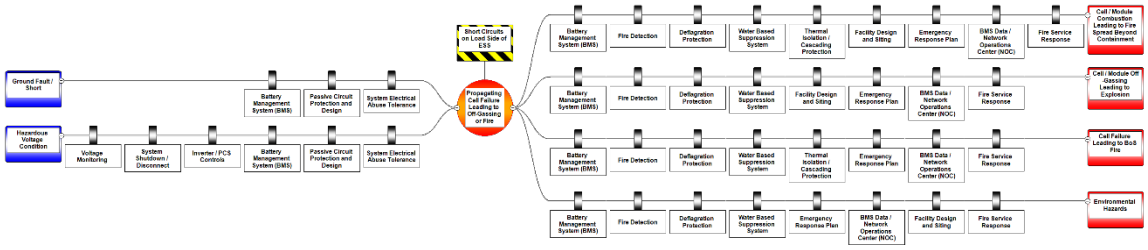


Table 3-7 - Short Circuits on the Load Side of the ESS Barriers

Barrier	Barrier Description
THREAT BARRIERS	
Battery Management System (BMS)	BMS provides sensing and control of critical parameters and triggers protective or corrective actions if system is operating out of normal parameters. Parameters include battery module over / under voltage, cell string over / under voltage, battery module over temperature, temperature signal loss, and battery module over current. In the event of any abnormal conditions, the BMS will first raise an information warning and then trigger a corresponding corrective action should certain levels be reached.
Voltage Monitoring	Voltage is measured by BMS, triggering fault and alarm monitor indicators, and potential system disconnect or other corrective actions if operating out of normal parameters.
System Shutdown / Disconnect	Multiple levels of passive and active electrical protections are provided for the Megapack 2 XL including module overcurrent protection via fusible links on the DC side of the modules, inverter DC and AC protections, and ground fault detection.
Passive Circuit Protection / Design	Fused disconnects and DC disconnect switches, in addition to ground fault detection / interruption and over voltage protection provided.
System Electrical Abuse Tolerance	System tested and listed to UL 9540.
CONSEQUENCE BARRIERS	
See Section 3.3 above for list of primary consequence barriers.	

4.5 Analysis Approval

As per *FCNYS §1206.5.2,* the fire code official shall be permitted to approve the hazardous mitigation analysis as documentation of the safety of the ESS installation provided the consequences of the analysis demonstrate the following:

1. *Fires will be contained within unoccupied ESS rooms or areas for the minimum duration of the fire-resistance rated separations identified in Section 12014.4.*
2. *Fires in occupied work centers will be detected in time to allow occupants within the room or area to safely evacuate.*
3. *Toxic and highly toxic gases released during fires will not reach concentrations in excess of IDLH level in the building or adjacent means of egress routes during the time deemed necessary to evacuate occupants from any affected area.*
4. *Flammable gases released from ESS during charging, discharging and normal operation will not exceed 25 percent of their lower flammability limit (LFL).*
5. *Flammable gases released from ESS during fire, overcharging and other abnormal conditions will be controlled through the use of ventilation of the gases preventing accumulation or by deflagration venting.*

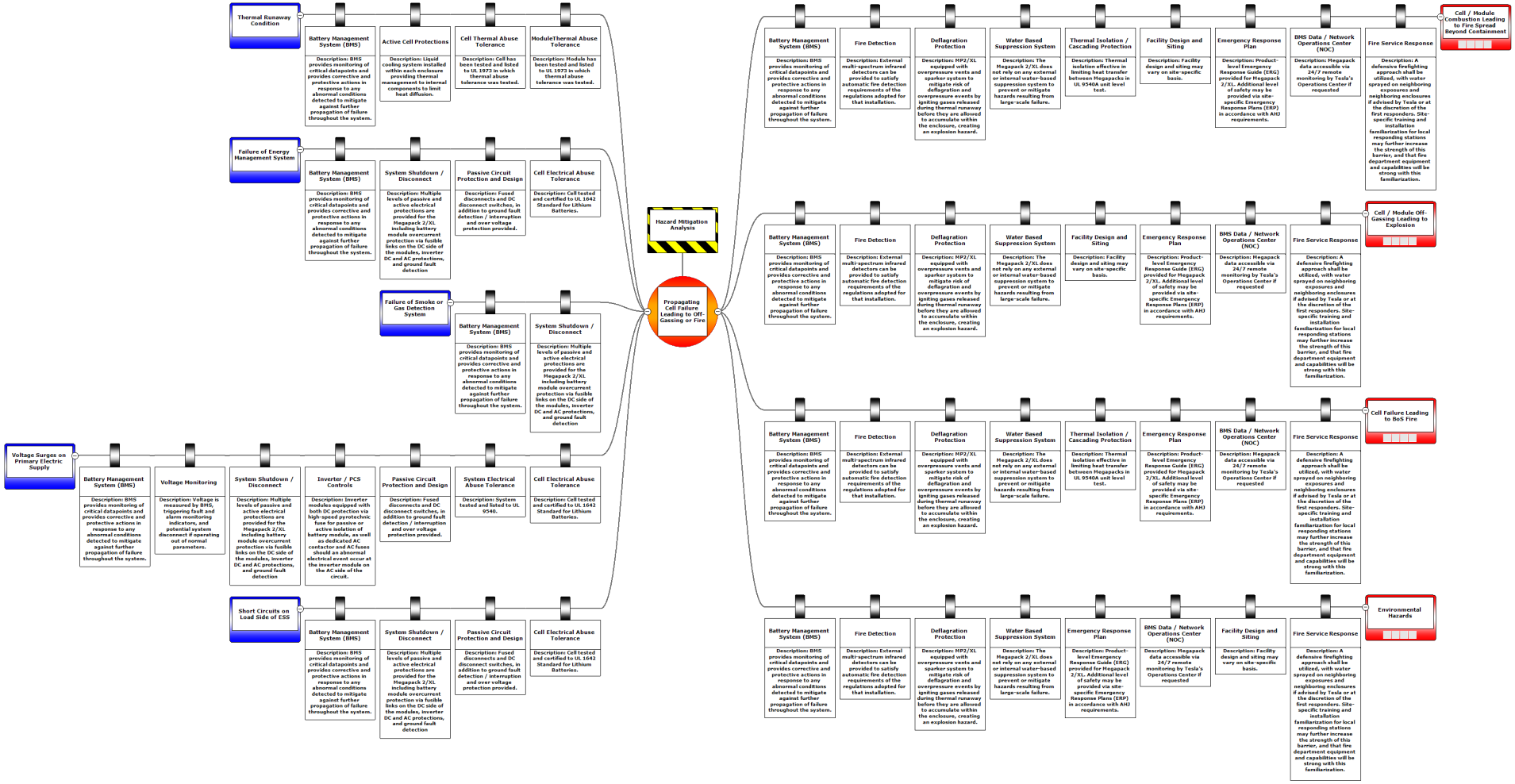
Table 3-8 - Summary of Analysis Approval

Compliance Requirement	Comments
1. ***Fires will be contained within unoccupied ESS rooms or areas for the minimum duration of the fire-resistance rated separations identified in Section 1206.14.4***	**Not applicable.** The Megapack 2 XL is intended for outdoor ground-mounted installations only and shall not be installed within any ESS rooms or structures.
2. ***Fires in occupied work centers will be detected in time to allow occupants within the room or area to safely evacuate***	**Not applicable.** The Megapack 2 XL is not intended to be installed in any occupied work centers.
3. **Toxic and highly toxic gases released during fires and other fault conditions will not reach concentrations in excess of immediately dangerous to life or health (IDLH) level in the building or adjacent means of egress routes during the time deemed necessary to evacuate from that area.**	**Compliant.** Additional testing and third-party analysis performed on products of combustion from the Megapack 2 XL at locations 20 ft and 5 ft conclude no traces of Mercury or 27 different metals tested for. HF was detected at values of 0.10 and 0.12 ppm over the course of the test – far below accepted NIOSH Immediately Dangerous to Life or Health (IDLH) value of 30 ppm for HF. The installation is proposed to be sited in an area with adequate separation distances. The Megapack 2XLs meet or exceed the minimum

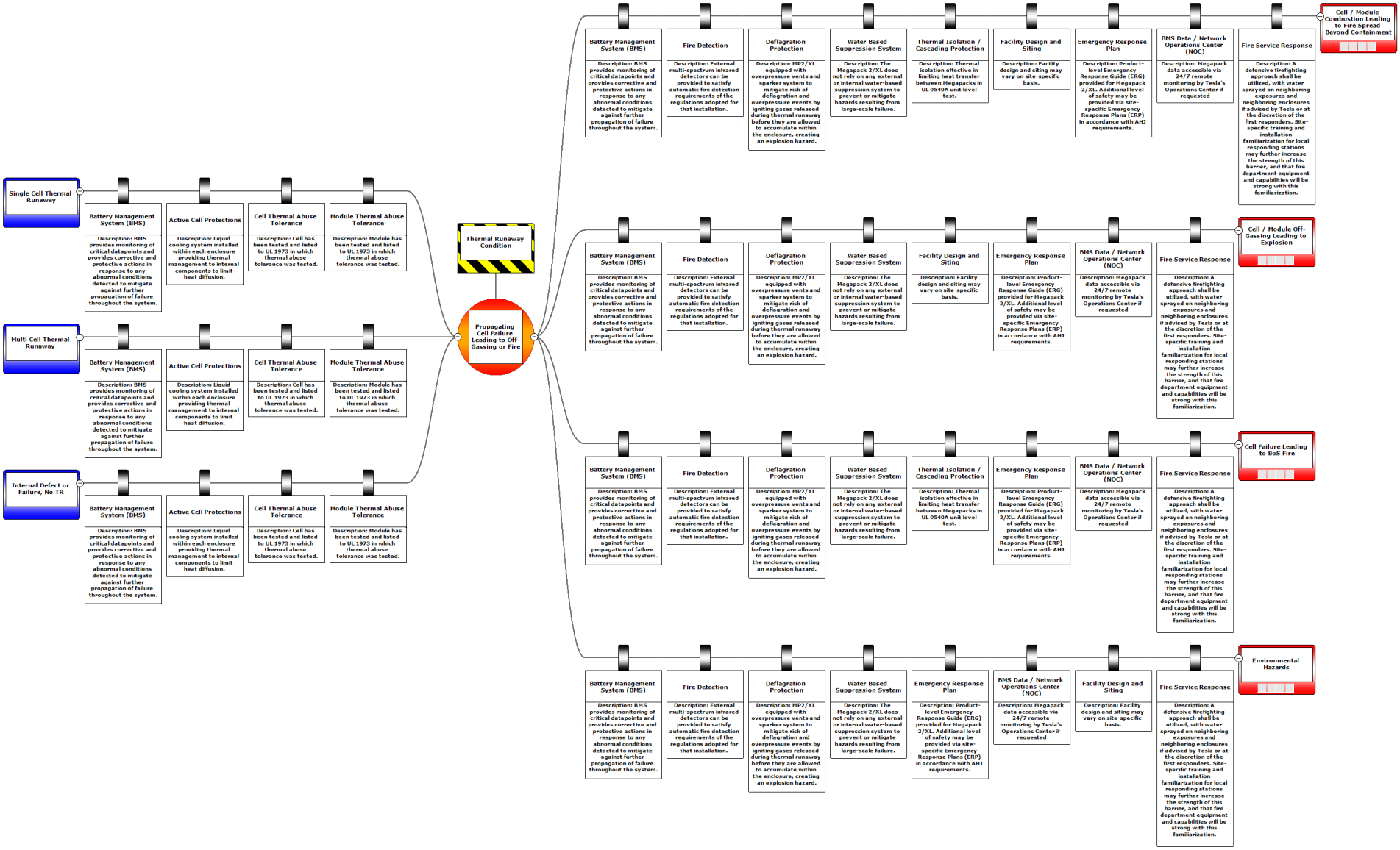
	prescribed separation distances of the 2020 FCNYS Chapter 12.
4. Flammable gases released during charging, discharging, and normal operation will not exceed 25 percent of the LFL.	**Not applicable.** Lithium-ion batteries do not release flammable gases during charging, discharging, or normal operation. In the case of flammable off-gases being released due to a thermal runaway event, the Megapack 2 XL is equipped with pressure-sensitive vents and sparker system designed to ignite any flammable gases and release in a controlled manner before they are allowed to accumulate and create an explosive atmosphere within the enclosure.
5. Flammable gases released from ESS during fire, overcharging and other abnormal conditions will be controlled through the use of ventilation of the gases preventing accumulation or by deflagration venting.	**Compliant.** The Megapack 2 XL is equipped with deflagration protection in the form of pressure-sensitive vents and sparker system designed to ignite any flammable gases and release in a controlled manner before they are allowed to accumulate and create an explosive atmosphere within the enclosure.

APPENDIX A – DETAILED HMA DIAGRAMS AND BARRIER DESCRIPTIONS

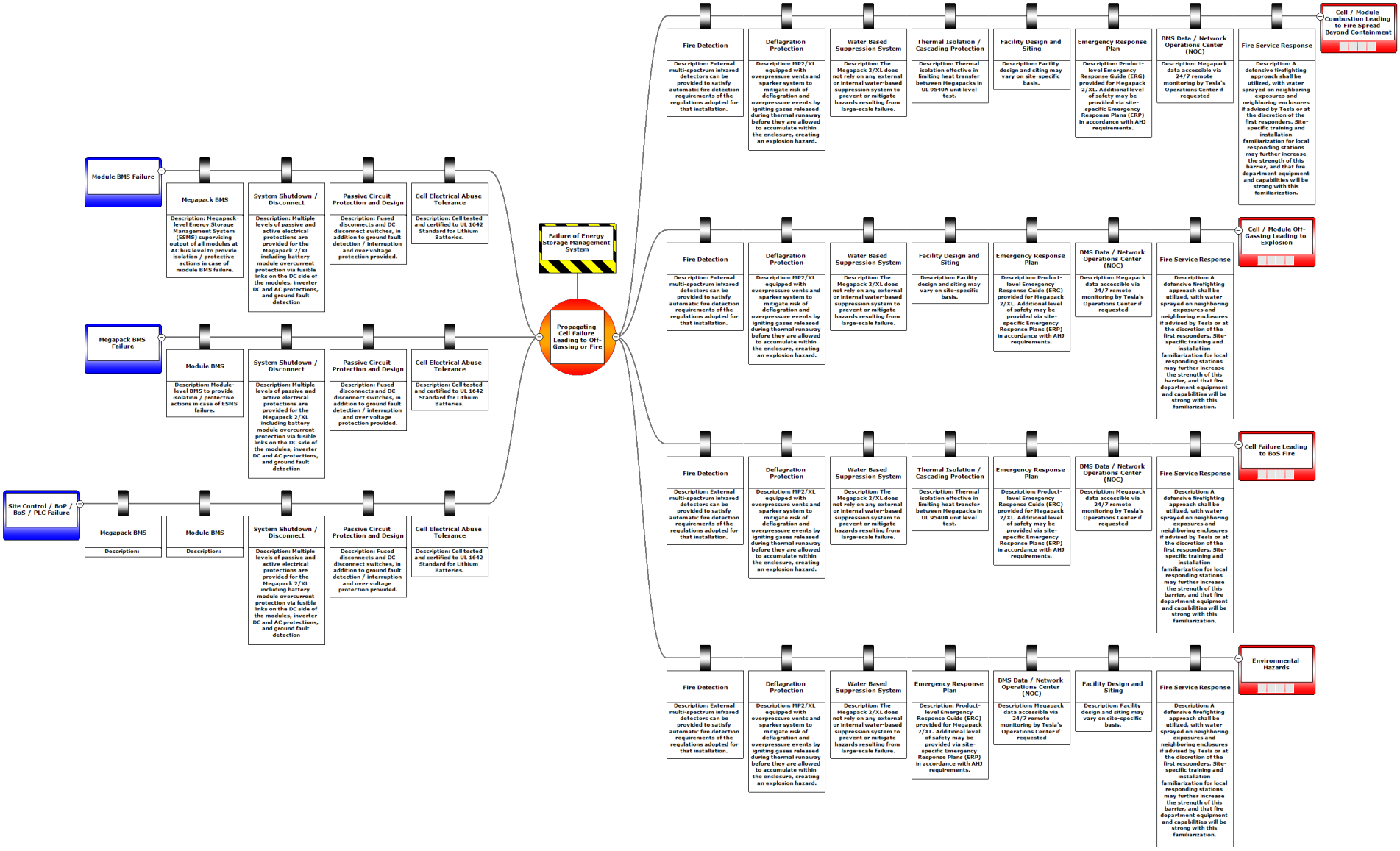
A.1 All Fault Conditions



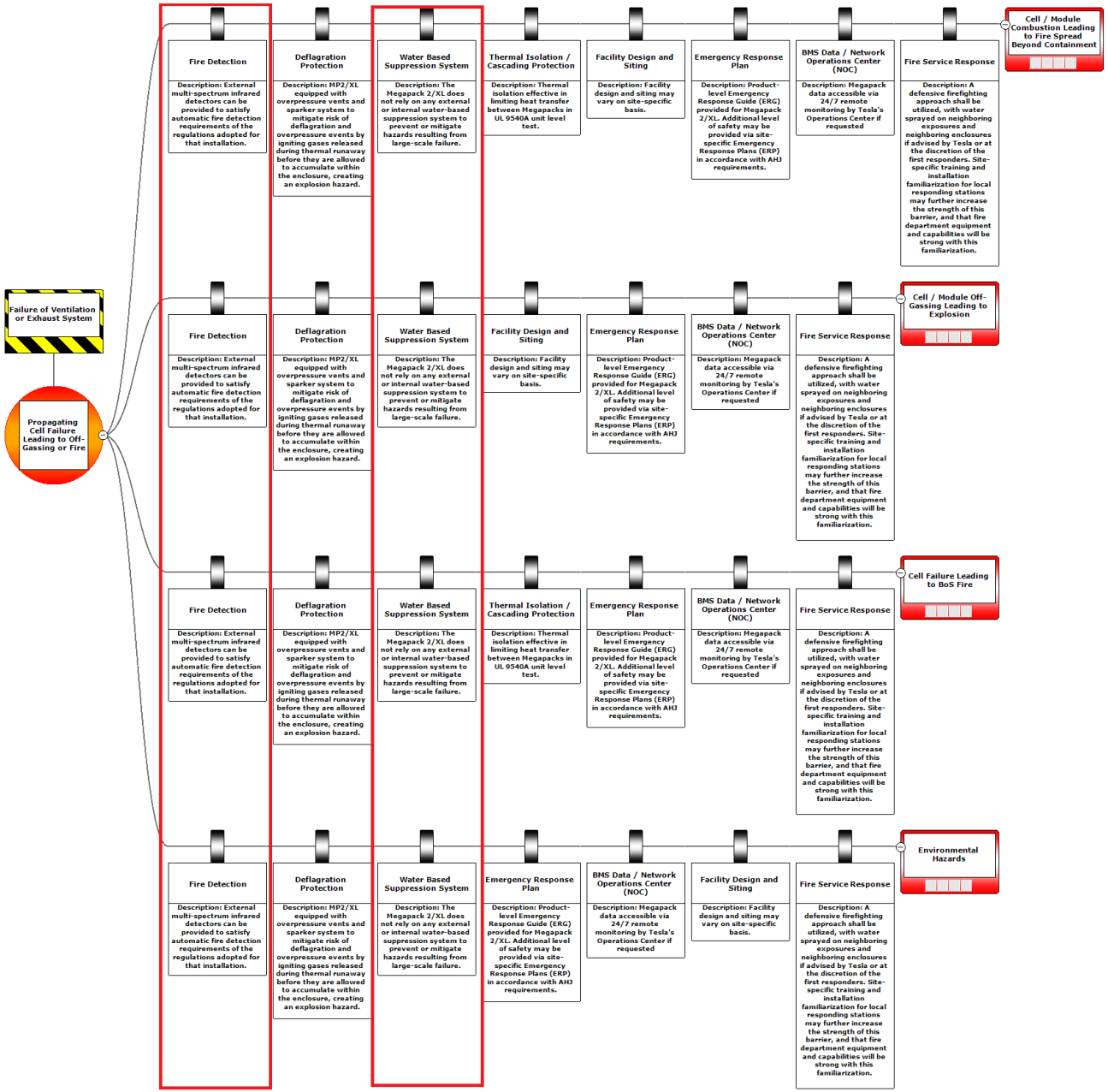
A.2 Thermal Runaway Condition



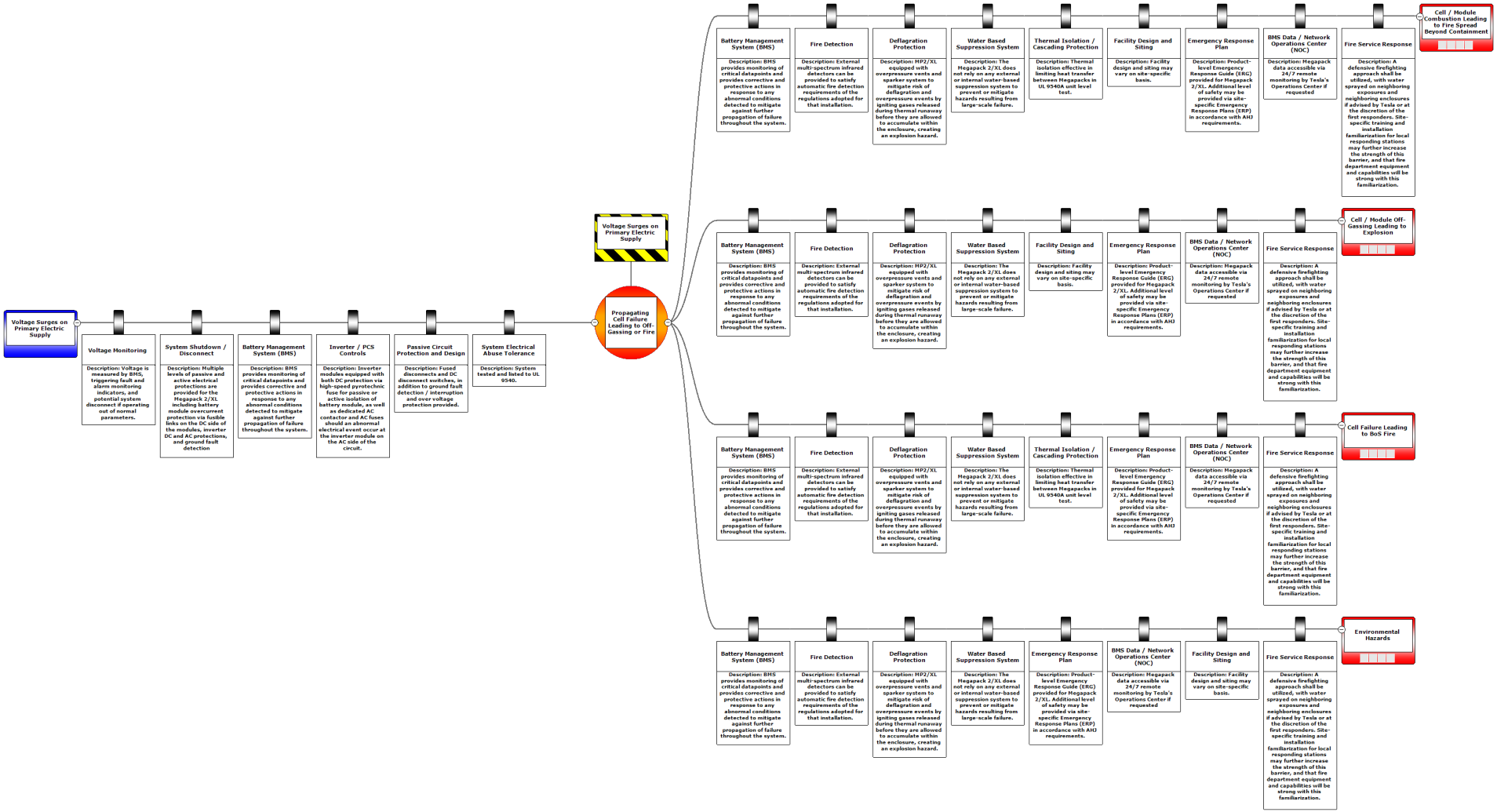
A.3 Failure of an Energy Storage Management System



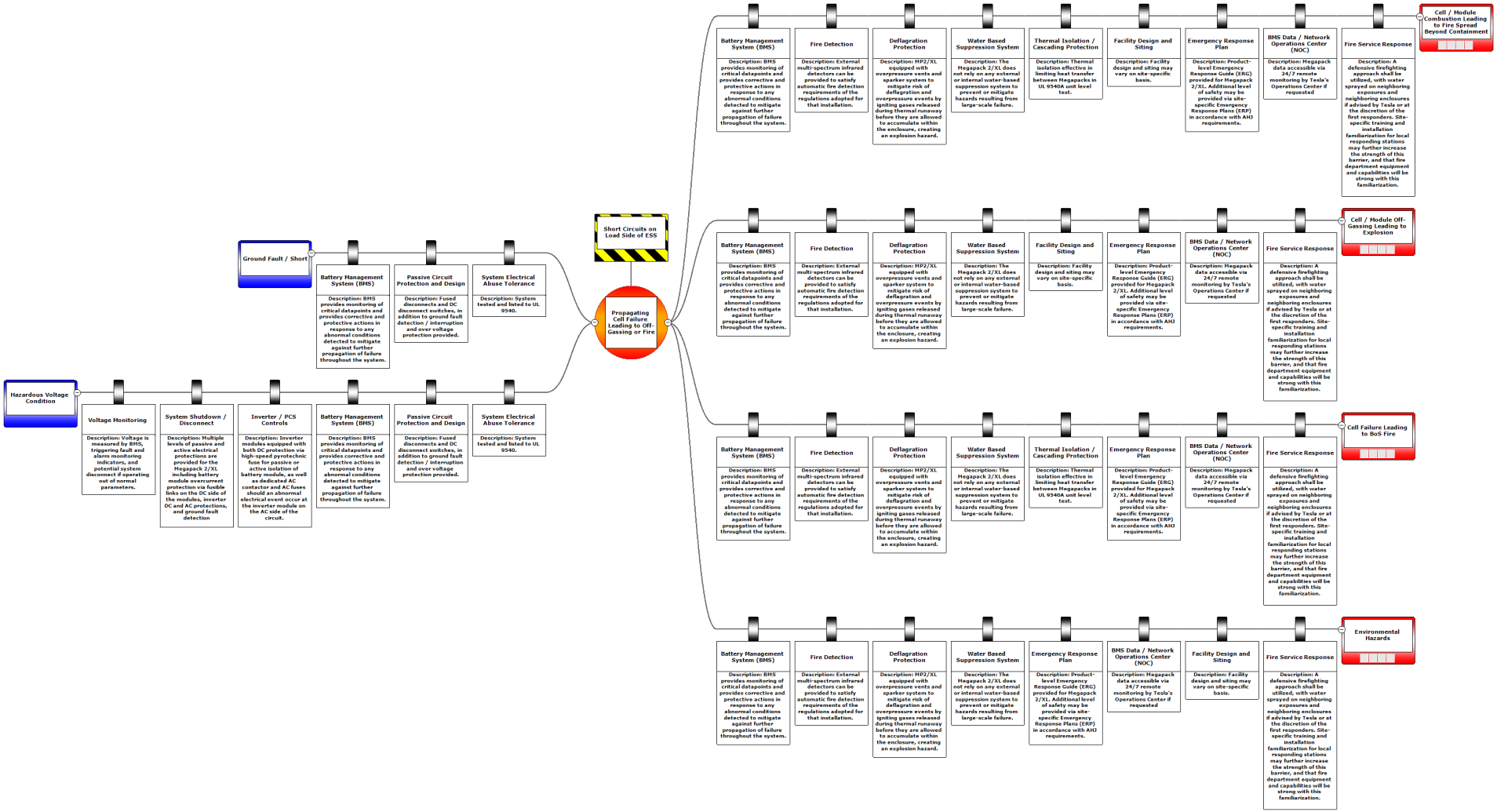
A.4 Failure of a Required Smoke Detection, Fire Detection, Fire Suppression, or Gas



A.5 Voltage Surges on the Primary Electric Supply



A.6 Short Circuits on the Load Side of the ESS

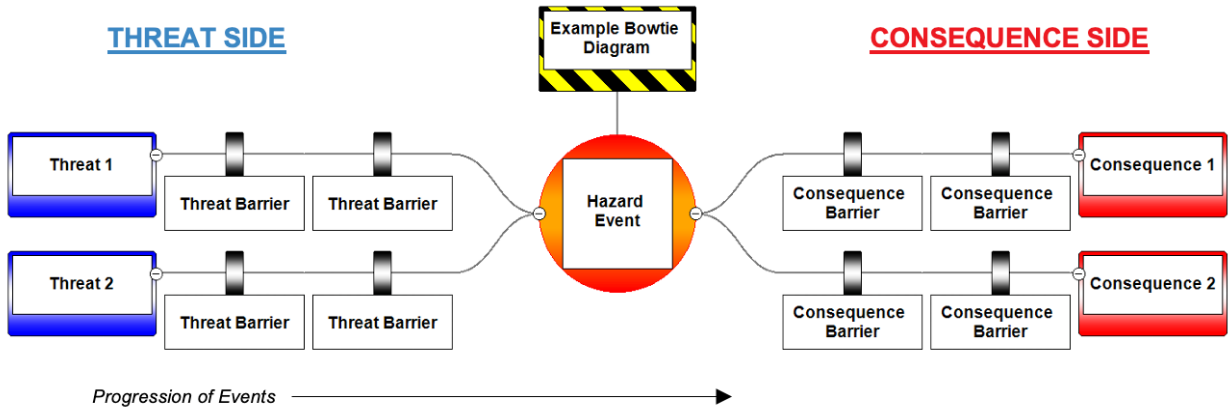


APPENDIX B – HMA METHODOLOGY

This Appendix serves as a supplemental write up for the overall Hazard Mitigation Analysis (HMA) and provides additional context on the Bowtie methodology used, as well as key definitions and concepts.

ESRG utilizes the bowtie methodology for hazard and risk assessments, as is described in *ISO.IEC IEC 31010 §B.21*, as it allows for in-depth analysis on individual mitigative **barriers** and serves as a strong tool for visualizing the chronological pathway of **threats** leading to critical hazard events, and ultimately to greater potential **consequences**, as depicted in the figure below. This simple diagrammatic way of describing and analyzing the pathways of a risk from hazards to outcomes can be considered to be a combination of the logic of a fault tree analyzing the cause of an event and an event tree analyzing the consequences.

The strength of the bowtie approach comes from its visual nature, which forgoes complex, numerical tables for threat pathways which show a single risk or consequence and all the barriers in place to stop it. On the left side are the threats, which are failures, events, or other actions which all result in a single, common hazard event in the center. For our model, many of these threats are the requirements of the fire code such as an unexpected thermal runaway.



- **Hazard Event / Top Event**

  The hazard (or “top”) event – depicted as the center point in the middle of the bowtie diagram – represents a deviation from the desired state during normal operations (in this case, a thermal runaway or cell failure event), at which point control is lost over the hazard and more severe consequences ensue. This event happens before major damage has occurred, and it is still possible to prevent further damage.

- **Threats**

  There often may be several factors that cause a “top event”. In bowtie methodology, these are called threats. Each threat itself has the ability to cause the center event. Examples of threats are hazardous temperature conditions, BMS failure, and water damage from

condensation, each leading to cell failure (the center event for many of the following bowtie diagrams for lithium-ion ESS failures).

Threats may not necessarily address a fully involved system fire or severe explosion, but rather smaller, precursor events which could lead to these catastrophic consequences. Some threats occur without any intervention, such as defect propagation or weather-related events, while others represent operational errors (either human or system-induced). Often threats may also be consequences of even earlier-stage threats, spawning a new bowtie model that includes the threat at the center point or right side of the new bowtie. The diagrams that follow include careful selection and placement of each of the elements to best capture the perspective of system owners and operators responsible for ensuring safe operation.

- **Consequences**

  Consequences are the results of a threat pathway reaching and exceeding its center event. For the models described here, the center events were selected as the event in which proactive protections give way to reactive measures mostly related to fire protection systems and direct response. As the center event then is defined as either “cell failure” or propagating cell failure, the consequences in the models described assume a condition exists in which flammable gas is being released into the system or a fire is burning within the system.

  Consequence pathways include barriers that may help to manage or prevent the consequence event. Threat pathways are often consequence pathways from a separate hazard assessment, as is the case with thermal runaway. In other words, thermal runaway may result from many different threats at the end of a separate hazard pathway (if not properly mitigated) and may also be the threat that could result in several other consequences. The task force identified a set of common consequences representing areas of key concern to utilities, energy storage system operators, and first responders.

- **Barriers**

  In order to control risks, mitigative “barriers” are placed to prevent propagation of failure events across the system. A barrier can be any measure taken that acts against an undesirable force or intention, in order to maintain a desired state, and can be included as proactive threat barriers or reactive consequence barriers.

  Each barrier in these models is more indicative of a concept that may include a single approach or may consist of a complex series of combined measures. Similarly, the analysis may not include barriers required to prevent the threats at the far left of the diagram (which would be placed even further left) to ensure the models do not extend infinitely, though the incorporation of these variables into site-specific safety evaluations may provide additional benefit. This list does not contain all possible solutions and in some designs, these barriers may not exist at all. Many of the same barriers apply to a number of threats.

Barriers may mitigate hazards or consequences in a variety of ways. For example, common barriers to thermal runaway include active electrical monitoring and controls, redundant failure detection, and even passive electrical safeties (such as over-current protection devices and inherent impedances). Should these systems fail to detect the threat, shutdown the system, or otherwise prevent thermal runaway from occurring, the hazard may persist.

APPENDIX D – REFERENCED DOCUMENTATION

[1] *Tesla_Megapack 2_Megapack 2XL-_ANSI-UL_9540A_Unit_Level_Report.pdf*

[2] *Tesla_Megapack_2_and_XL_FPE_Report_Final.pdf*

APPENDIX E – REFERENCED CODES AND STANDARDS

- *NFPA 855 Standard for the Installation of Stationary Energy Storage Systems*, 2020 Edition
- *International Fire Code §1207 Electrical Energy Storage Systems*, 2021 Edition
- *UL 9540A Standard for Test Method for Evaluation Thermal Runaway Fire Propagation in Battery Energy Storage Systems,* 4th Edition
- *UL 9540 Standard for Energy Storage Systems and Equipment,* 2nd Edition

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Mount Kisco Battery Energy Storage		
Project Location (describe, and attach a general location map): 333 N. Bedford, Mount Kisco NY, 10549		
Brief Description of Proposed Action (include purpose or need): Construction of public utility battery energy storage facility consisting of stacked stand alone five (5) megawatt (mw) units, gravel access, and equipment pads.		
Name of Applicant/Sponsor: Mount Kisco Battery Energy Storage, LLC	Telephone: 518-857-1527 E-Mail: ccollet@newleafenergy.com	
Address: 22 Century Hill Drive, Suite 303		
City/PO: Latham	State: NY	Zip Code: 12110
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): DP 21 LLC	Telephone: E-Mail:	
Address: 333 N. Bedford Rd		
City/PO: Mount Kisco	State: NY	Zip Code:10549

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	**If Yes: Identify Agency and Approval(s) Required**	**Application Date (Actual or projected)**
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board (Mount Kisco) - Site plan approval, wetland permit	2024
c. City, Town or Village Zoning Board of Appeals ☑Yes ☐No	ZBA- zoning determination or use variance, fence height and lot dev't coverage bulk variance.	2024 2024
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	County referral per 239M	2024
f. Regional agencies ☑Yes ☐No	DEP-SWPPP Review (In NYC Watershed and Downtown Main Street Area)	2024
g. State agencies ☑Yes ☐No	NYSDEC Stormwater Permit GP-20	2024
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

Per NYSDEC EAF Mapper

If Yes, identify the plan(s):
NYC Watershed Boundary

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
(ML) Light Manufacturing District

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Bedford Central School District

b. What police or other public protection forces serve the project site?
Mount Kisco Police Dept

c. Which fire protection and emergency medical services serve the project site?
Mount Kisco Fire Dept

d. What parks serve the project site?
Flewellyn Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Light commerical - Battery energy storage site

b. a. Total acreage of the site of the proposed action? 37.5 acres
b. Total acreage to be physically disturbed? 0.2 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 37.5 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 5 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 9.2 height; 29 width; and 5.5 length

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify: _____

iii. If other than water, identify the type of impounded/contained liquids and their source. _____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐Yes ☑No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No

If yes, describe. _____

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☑No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 0.2 acres (impervious surface)

_____ Square feet or 37.5 acres (parcel size)

ii. Describe types of new point sources. gravel areas and pads.

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)? Stormwater will be conveyed to onsite stormwater management practices.

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☑Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☑No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7:00 a.m - 5:00 p.m
- Saturday: 7:00 a.m - 5:00 p.m
- Sunday: 7:00 a.m - 5:00 p.m
- Holidays: 7:00 a.m - 5:00 p.m

ii. During Operations:

- Monday - Friday: 24 hours per day- unmanned
- Saturday: 24 hours per day- unmanned
- Sunday: 24 hours per day- unmanned
- Holidays: 24 hours per day- unmanned

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe:

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: minor tree clearing for installation of stand alone storage units and fencing.

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction:
- Operation:

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction:
- Operation:

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): athletic field, buildings

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	33.04	33.24	+0.20
• Forested	2.25	1.95	-0.30
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	1.61	1.71	+0.10
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0.60 +/-	0.60+/-	0
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☑ Yes ☐ No
i. If Yes: explain: Project parcel contains commerical uses. Project site is adjacent to athletic field.

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No
If Yes,
i. Identify Facilities:

e. Does the project site contain an existing dam? ☐ Yes ☑ No
If Yes:
i. Dimensions of the dam and impoundment:
- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No
☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____
☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 360203, C360163, 360032
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No
If yes, provide DEC ID number(s): 360203, C360163, 360032

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

-360032: former site of dry cleaner. -C360163: Contamination from off site sources of lead and other VOCs and SVOCs. -360203: Groundwater contamination, site use as automotive properties and propane supplier. See end of EAF for more details on attached reports of remediation sites

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >6.8 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Urban land	100 %
	%
	%

d. What is the average depth to the water table on the project site? Average: >6.8 feet

e. Drainage status of project site soils:

☐ Well Drained:	% of site
☑ Moderately Well Drained:	100 % of site
☐ Poorly Drained	% of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	99 % of site
☑ 10-15%:	1 % of site
☐ 15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No
See attached wetland report and supplemental information

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No
project is within Town imposed 100' wetland setback

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 864-445.1 Classification C(T)
- Lakes or Ponds: Name N/A Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... Approximate Size 0.10
- Wetland No. (if regulated by DEC) N/A

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Name - Pollutants - Uses:Kisco River, Upper, and tribs – Nutrients;D.O./Oxygen Demand – Aquatic Life

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? See attached ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? See attached ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
chipmunk, squirrels
project parcel is significantly developed

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation):
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No
If Yes:
i. Species and listing (endangered or threatened):

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☑ Yes ☐ No
If Yes:
i. Species and listing: See attached correspondence from NYSDEC NHP noting this species is documented within 1/4 mile of project site. This is a species of Special Concern.
New England Cottontail

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☑ Yes ☐ No
If Yes:
i. CEA name: Geographic Area Overlaying Aquifer
ii. Basis for designation: Exceptional or unique character
iii. Designating agency and date: Agency:Bedford, Town of, Date:11-3-84

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Christopher Colle Date 4/10/24

Signature _____ Title Project Engineer

PRINT FORM

EAF Mapper Summary Report

Wednesday, November 22, 2023 11:04 AM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYC Watershed Boundary
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	360203, C360163, 360032
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	864-445.1
E.2.h.iv [Surface Water Features - Stream Classification]	C(T)
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	Yes

E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Kisco River, Upper, and tribs – Nutrients;D.O./Oxygen Demand – Aquatic Life
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	Yes
E.2.p. [Rare Plants or Animals - Name]	New England Cottontail
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	Yes
E.3.d [Critical Environmental Area - Name]	Geographic Area Overlaying Aquifer
E.3.d.ii [Critical Environmental Area - Reason]	Exceptional or unique character
E.3.d.iii [Critical Environmental Area – Date and Agency]	Agency:Bedford, Town of, Date:11-3-84
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

EAF Supplemental Information

E.2.h.i The project parcel contains both wetlands and streams; both features are not impacted by the project site.

E.2.j Per NYSDEC Environmental Resource Mapper Project parcel contains 100-year floodplain, however project site is not within 100-year floodplain.

E.2.k Per NYSDEC Environmental Resource Mapper Project parcel contain 500-year floodplain, however project site is not within 500-year floodplain.

E.2.m The NYSDEC Division of Fish and Wildlife National Heritage Program states no records of rare or state listed animals or plants, or significant natural communities are at the project site.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Kisco Avenue Groundwater
Site Code: 360203
Program: State Superfund Program
Classification: P *
EPA ID Number:

Location

DEC Region: 3
Address: Kisco Avenue
City: Mount Kisco Zip: 10549
County: Westchester
Latitude: 41.217877389
Longitude: -73.724686847
Site Type:
Estimated Size: 15.3 Acres

Site Owner(s) and Operator(s)

Site Description

Location: The Kisco Avenue Groundwater site covers 15.3 acres in a suburban area. It is located in Mount Kisco, NY 10549 between the intersection of Holiday Inn Drive and Kensico Drive and the intersection of Hubbels Road and Kisco Avenue. Site Features: The site covers three automotive dealership and service centers, and a propane supplier east of Kensico Avenue. Occupied buildings comprise one-third to one quarter of the automotive properties, with the remainder covered by asphalt parking for a total of over 150 vehicles, and surrounded by grass and trees along each property's boundaries. The propane supplier comprises one small office building, asphalt parking for cars and fuel trucks, and three above-ground propane tanks. Current Zoning and Land Use: The site is currently active and zoned for commercial use. 24 Kensico Drive is occupied by Suburban Propane and provides fueling services onsite and to customers in the area with fleet trucks. 275 Kisco Avenue is occupied by Lexus of Mt Kisco and used as a dealership and service center. 255 and 227 Kisco Avenue are occupied by Rivera Toyota and used as a service and parts center. 250 Kisco Avenue is occupied by BMW Mt Kisco and used as a dealership and service center. The nearest residential property is approximately 800 feet east-northwest of the site. Past Use of the Site: The only known uses for the site have been as automotive dealerships and service centers. The buildings at 275 Kisco Avenue and 250 Kisco Avenue have been present since 2009 based on satellite imagery, and land use prior to their construction is currently unknown. During a Fall 2018 sampling event, Trichloroethene was detected at concentrations up to 15,800 parts per billion (ppb) at the southwest corner of 41 Kensico Drive, and continuing downgradient to its northern boundary at a concentration of 2200 ppb. The site is hydraulically upgradient of this property. Site Geology and Hydrogeology: Surficial geology in the area generally consists of historic fill, followed by soft to medium-dense silt and clay or fine-grained sand down to bedrock. Bedrock is likely encountered between 25 and 70 feet below ground surface (bgs). The water table is approximately 5 feet bgs and groundwater generally flows north-northeast.

Site Environmental Assessment

Nature and Extent of Contamination: A Site Characterization is planned to determine the environmental assessment

Site Health Assessment

As information for this site becomes available, it will be reviewed by the NYSDOH to determine if site contamination presents public health exposure concerns.

* **Class P Sites:** "DEC offers this information with the caution that it should not be used to form conclusions about site contamination beyond what is implied by the classification of this site, namely, that there is a potential for concern about site contamination. Information regarding a Class P site (potential Registry site) is by definition preliminary in nature and unverified because the DEC's investigation of the site is not yet complete. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Former Designs for Leisure
Site Code: C360163
Program: Brownfield Cleanup Program
Classification: A
EPA ID Number:

Location

DEC Region: 3
Address: 41 Kensico Drive
City: Mount Kisco Zip: 10549
County: Westchester
Latitude: 41.219444444
Longitude: -73.722583333
Site Type:
Estimated Size: 1.731 Acres

Site Owner(s) and Operator(s)

Site Document Repository

Name: Mount Kisco Public Library
Address: 100 Main Street
Mount Kisco,NY 10549

Site Description

Location: The 1.73 acre site is located in the Village of Mt. Kisco, New York, in Westchester County, and is identified as Block 1, Lot 2 on the Westchester Tax Map. The site is bounded on the west by Kensico Drive; on the east by Branch Brook, beyond which is the MTA-North railroad; on the north by Westchester EMS and TAL Healthcare; and by Suburban Propane to the south. A short distance to the north is the Sawmill Parkway with an entrance to the parkway approximately a block away to the northwest. Site Features: The site is flat and includes an unoccupied slab-on-grade one-story building, with landscaped and paved areas. Branch Brook runs along the eastern site boundary. A few trees are situated along the eastern boundary. Current Zoning and Land Use: The site and the surrounding area are currently zoned as Manufacturing/Industrial. The nearest residential area is a medium-density multi-family district located slightly over 1,000 feet to the northwest on the other side of the Sawmill Parkway. The site is currently vacant. Past Use of the Site: The railroad (just off-site to the east, beyond Branch Brook) has been present since as early as 1892. The current building was first constructed in 1976 and used as a veterinary hospital. In 1982 Design for Leisure, a pool table and bar stool manufacturer, took occupancy of the site and remained until 1998. In 1998 Human Relations Media, a commercial and movie production company occupied the site through October 2017. Site Geology and Hydrogeology: In approximately three-quarters of the site, fill materials consisting of sand, gravel, silt, clay, brick concrete, asphalt, timber, rubber, plastic, and glass is consistently present to an approximate depth of 9 feet below ground surface (bgs). The southwestern quarter of the site is generally underlain by medium-dense sand with occasional clayey silt layers. The fill is underlain by a soft to medium-dense silt layer, a clay layer, and a fine-grained sand layer. Bedrock is present at about 24 feet bgs in the southwest corner and about 71 feet bgs in the central eastern portion of the site. The groundwater table varies from 0.05 to 5.52 feet bgs and flows generally from southwest to northeast. A zone of transitional permeability runs along the central north-south axis of the site, composed primarily of silty and clayey fines, which reduce hydraulic conductivity starting at 20 feet bgs.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
benzene
trichloroethene (TCE)
lead
tetrachloroethene (PCE)
trans-1,2-dichloroethene
vinyl chloride
cis-1,2-dichloroethene
methyl ethyl ketone
xylene (mixed)
1,1-dichloroethane
1,1-dichloroethene
chloroethane

Site Environmental Assessment

Soil, groundwater, and sediment were analyzed for volatile organic compounds (VOCs), including 1,4-dioxane, semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs) and pesticides. Groundwater was also analyzed for per- and polyfluoroalkyl substances (PFAS). A sub-slab vapor sample was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include lead, chlorinated solvents, and petroleum constituents. Surficial soil samples - Surface soil samples were collected from zero to two inches below ground surface (bgs). With the exception of lead, no contaminants of concern including SVOCs, PCBs, pesticides, or metals were detected at levels exceeding the applicable soil cleanup objectives (SCOs) in surface soil samples collected at the site. Lead was detected in surficial soil samples above the unrestricted SCO in multiple soil samples at a maximum concentration of 144 parts per million (ppm), but below the commercial SCO of 1,000 ppm. Site-related soil contamination does not appear to be a concern for off-site locations. Subsurface Soil - Contaminants detected in subsurface soil samples above unrestricted use criteria include trichloroethylene, acetone, 4,4 DDT, lead, and mercury at maximum concentrations of 13; 0.15; 0.00557; 3,690; and 0.251 ppm, respectively. The only contaminants detected above their respective commercial soil cleanup objective (CSCO) were lead at a

maximum concentration of 3,690 ppm in soil 4-6 feet below grade compared to a CSCO of 1,000 ppm The supplemental remedial investigation (SRI) further delineated the extent of lead contamination that exceeded commercial use SCOs, with the maximum concentration exceeding toxicity characteristic leaching procedure (TCLP) levels at up to 64.2 ppm. Benzo(a)pyrene was detected at a maximum level of 3.1 ppm in the SRI, exceeding its CSCO of 1 ppm at one sampling point at 3-4 feet bgs. No other contaminants were detected above commercial use criteria. TCE was detected at a level exceeding the protection of groundwater SCO of 0.47 ppm, at concentrations up to 13 ppm, near the center of the site. All TCE contamination detected in soil samples was found at least 5 feet below the water table at the southwest corner of the site and averaging 15 feet below the water table. This saturated soil contamination appears to be due to the highly contaminated groundwater entering the site from an off-site, upgradient source. The Department is performing a separate area-wide investigation to determine the source of this contamination affecting this site under site 360203 Kisco Avenue Groundwater. Groundwater - Tetrachloroethene (PCE) and trichloroethene (TCE) and their breakdown products, such as vinyl chloride (VC), 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, and trans-1,2-dichloroethene, were found at concentrations exceeding groundwater standards (typically 5 parts per billion [ppb] and 2 ppb for VC). PCE and TCE were detected at maximum concentrations of 14.2 and 15,800 ppb, respectively. The maximum concentration of TCE was detected in a well near the south-southwest boundary of the site, which is the hydraulically upgradient boundary of the site. The highest concentration of PCE was detected in a well near the center of the site in the zone of transitional permeability. TCE and PCE concentrations in soil samples that exceeded protection of groundwater SCOs were first found at least five feet below the water table. The TCE contamination in the groundwater at this site appears to be from an off-site upgradient source, with no apparent contributions from this site. As noted above, the Department is performing a separate area-wide investigation to determine the source of this contamination. Along the downgradient site boundary, along the northern side of the building, TCE concentrations were detected at two monitoring wells at 2,210 ppb and 2,540 ppb, respectively. Cis-1,2-dichloroethene (cis-1,2-DCE) concentrations at these two wells were at 207 and 228 ppb, respectively. TCE and cis-1,2-DCE are likely to be migrating off-site/down-gradient to the north. As noted above, this contamination is passing under the BCP site from an upgradient off-site source. The maximum concentrations of vinyl chloride, 1,1-dichloroethane, cis-1,2-DCE, and trans-1,2-DCE, which are breakdown products of TCE, were 45.5 ppb, 23.1 ppb, 27.4 ppb, 1,100 ppb and 10.8 ppb, respectively, near the center of the site; while the maximum concentration for 1,1-DCE was 16.2 ppb near the northern (downgradient) perimeter. Petroleum constituents were detected in one well located in the center of the site, including benzene at 2.88 ppb, chloroethane at 23.1 ppb, methyl ethyl ketone at 68.1 ppb, and total xylenes at 8.58 ppb. The standards for these compounds are 1 ppb, 5 ppb, 50 ppb, and 5 ppb, respectively. Benzene was detected in a second well near the down gradient site boundary, at concentration of 7.7 ppb (versus a standard of 1 ppb). This suggests that low levels, if any, petroleum contamination may have migrated off-site. Lead was detected above Class GA standards at 33.3 ppb in one well near the center of the site, compared to the standard of 25 ppb, and is not migrating off-site. No SVOCs, polychlorinated biphenyls (PCBs), or pesticides were detected in site groundwater over Class GA standards. 1,4-dioxane was detected at maximum concentration of 29 ppb in a hydraulically upgradient well near the south-southwest boundary of the site. Samples obtained at two downgradient wells near the northern boundary of the site found maximum concentration of 1.7 and 2.7 ppb of 1,4-dioxane respectively, compared to the maximum contaminant level (MCL) of 1 ppb and may be migrating off-site; however, as with the chlorinated VOCs, this contaminant also appears to originate from an upgradient/off-site source. PFOA was detected above the MCL of 10 parts per trillion (ppt) in one well near the center of the site at 11 ppt and does not appear to be migrating off-site. Sub-slab Vapor - TCE was detected at 3.7 microgram/cubic meter (ug/m3) at the one sub-slab sampling point in the building. The source of chlorinated solvents appears to be upgradient and off-site, and the site is not contributing to the chlorinated solvent plume found in site groundwater and soil vapor. Additional investigation under a separate site will be required to determine if there are any off-site soil vapor intrusion (SVI) issues resulting from this upgradient groundwater plume that is impacting this site. Surface Water and Sediment - Surface water and sediment were sampled from the adjacent stream during the supplemental remedial investigation to assess whether the site impacted the adjacent waterway. No contaminants of concern were detected above laboratory reporting limits in surface water samples. The only contaminant detected above Class C Freshwater Sediment Guidance Values (SGV) was lead at 180 and 201 ppm in the mid-stream and downstream samples, respectively. The concentration of lead in the upstream sample was 38.4 ppm. The Class C SGV for lead is 130 ppm. Given the distance from the one soil sample location that exceeded the commercial use SCO for lead to the stream, it appears the primary source of the lead in the sediment is likely from offsite sources including a stormwater outlet near the northeast/upstream-most corner of the site, manufacturing facilities and parking lots upstream, and the Metro North railway bed adjacent to the eastern bank of the stream.

Site Health Assessment

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Access to the site is unrestricted and people who enter the site can come into contact with contaminated soils or contaminated groundwater if they dig below the ground surface. Volatile organic compounds in contaminated groundwater or contaminated soils may move into the soil vapor (air spaces within the soil), which in turn, may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site related contaminants due to soil vapor intrusion does not represent a current concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any onsite redevelopment. Potential soil vapor intrusion concerns associated with offsite buildings will be evaluated during a separate investigation of the offsite contamination and not part of this BCP investigation.

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Green Lane (Bedford Hills) Shopping Cntr
Site Code: 360032
Program: State Superfund Program
Classification: C
EPA ID Number:

Location

DEC Region: 3
Address: Bedford Road and Green Lane
City: Bedford Hills Zip: 10507
County: Westchester
Latitude: 41.224758108
Longitude: -73.715530418
Site Type: STRUCTURE
Estimated Size: 3 Acres

Site Owner(s) and Operator(s)

Current Owner Name: R.A.J. Development Corporation, Inc.
Current Owner(s) Address: 2 CROTON POINT AVENUE
CROTON-ON-HUDSON,NY, 10520
Owner(s) during disposal: R.A.J. DEVELOPMENT, INC.
Current On-Site Operator: R.A.J. Development Corporation, Inc.
Stated Operator(s) Address: 2 CROTON POINT AVENUE
CROTON-ON-HUDSON,NY 10520

Site Description

This Site Description was reviewed and edited on August 9, 2007. No further review of this delisted site will be conducted Location Description: The Green Lane (Bedford Hills) Shopping Center was located on Bedford Road, between Green Lane and Norm Avenue. The shopping center had seventeen stores including Shop Rite, a bank, and a dry cleaner (Taylor Cleaners). There were two on-site septic systems: one for the Shop Rite store, and another system common to the dry cleaner, the bank and the rest of the stores. Current Condition, Ownership and Use of the Site: Unknown Source of Contamination: The dry cleaner had discharged, over a period of time, low levels of dry-cleaning wastes (rinse waters containing spent perchloroethylene) through the common septic system which consists of two septic tanks, oil/water separators and fourteen leaching pits varying in size from three to eight ft. in diameter and nine ft. deep. In 1992, the dry cleaner was cited and fined for discharging solvents into the septic system. Actions Taken: The septic tank and the leach pits were cleaned in March 1993. A Preliminary Site Assessment (PSA) conducted in July / August 1993 showed that the soils beneath the leach pits did not contain any detectable levels of dry-cleaning solvents, principally perchloroethylene (PCE). PCE and trichloroethylene (TCE) levels in on-site monitoring wells were below the then existing groundwater standards. Based on PSA results, no treatment was required. Quarterly sampling for VOCs of selected on-site monitoring wells commenced in May 1995 and continued for three years. PCE levels continued to decrease consistently until only trace levels of PCE were being detected in early 1997. The site was delisted in early 1999. Future Actions: March 31, 2009: The soil vapor intrusion evaluation appears to support a "no further action" decision, because a clean zone of groundwater above the contaminated zone is precluding the migration of soil vapor (i.e., groundwater data indicate that the site-related VOC contamination is limited to deeper portions of the aquifer and no VOC contamination is present in the shallow groundwater).

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
PERCHLOROETHYLENE (F002 WASTE)

Site Environmental Assessment

A clean zone of groundwater above the contaminated zone is precluding the migration of soil vapor (i.e., groundwater data indicate that the site-related VOC contamination is limited to deeper portions of the aquifer and no VOC contamination is present in the shallow groundwater), so the soil vapor intrusion risk appears to be minimal.

Site Health Assessment

Contact with potential contaminants in soil is not expected because the source of contamination, the septic system, was cleaned. The potential for soil vapor intrusion was evaluated, and no further actions were deemed necessary. Drinking contaminated groundwater is not expected because public water serves the area.

For more Information: E-mail Us

Refine This Search

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3054 I F: (845) 255-4659
www.dec.ny.gov

NEW YORK STATE OF OPPORTUNITY | **Department of Environmental Conservation**

February 23, 2024

GEI Consultants, Inc. PC
Attn: Mallory Smith
1301 Trumansburg Road, Suite N
Ithaca, NY 14850

RE: 333 North Bedford Rd – Tesla Inc. Battery Storage
Permit Jurisdiction Determination
Village of Mount Kisco, Westchester County
DEC ID#: 3-5556-00093/00002

Dear Mallory Smith:

The New York State Department of Environmental Conservation (DEC or Department) has received the inquiry regarding 333 North Bedford Road in the Village of Mount Kisco, Westchester County. The proposal is to install a 5000 KW energy storage system.

Based upon our review of the inquiry received December 20, 2023, we offer the following comments:

STATE-LISTED SPECIES

DEC has reviewed the State's Natural Heritage records. We have determined that the site is located within or near known occurrences of the following species: New England cottontail, Special concern.

New England cottontails are known to use shrubby habitat, including forested wetlands and upland forest with a well-developed shrub understory. However, given the extensive development surrounding the proposed project site, it is unlikely that the site contains New England cottontail; therefore, the Department does not anticipate direct adverse impacts to this species as a result of this project.

The absence of data does not necessarily mean that rare or other state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

PROTECTION OF WATERS

The following stream is located within or near the site indicated: a Subtributary of Kisco River, DEC Water Index ID No. H-31-P44-43-8-3, Class and Standard C(T), and considered "protected."

A Protection of Waters permit is required to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified above as "protected." A permit is not required to disturb the bed or banks of "non-protected" streams.

If a permit is not required, please note, however, you are still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The project site is not within a New York State protected Freshwater Wetland. However, please contact your town officials and the United States Army Corps of Engineers in New York City, telephone (917) 790-8511 (Westchester/Rockland Counties), or (917) 790-8411 (other counties), for any permitting they might require.

WATER QUALITY CERTIFICATION

If the US Army Corps of Engineers (USACE) requires a permit pursuant to Section 404 of the Clean Water Act for the discharge of fill in waters of the US, then a Section 401 Water Quality Certification (WQC) will be required. If the project qualifies for a Nationwide Permit, it may be eligible for coverage under a DEC Blanket WQC. Coverage under a Blanket required compliance with all conditions for the corresponding Nationwide Permit. Additional information can be found on the Department's website at https://dec.ny.gov/regulatory/permits-licenses/waterways-coastlines-wetlands/protection-of-waters-program#Water_Quality_Certification.

REMEDIATION

The project site is located near remediation sites Former Designs for Leisure (C360163) and Kensico Drive & Kensico Avenue Properties (C360243). Due to the scope and nature of the proposed project, and supplemental information received 02/22/2024, the Department does not anticipate impacts from the proposed excavation, and no further review is required at this time.

CULTURAL RESOURCES

We have reviewed the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation. These records indicate that the project is not located within an area considered to be sensitive with regard to archaeological resources. For more information, please visit the New York State Office of Historic Preservation website at http://www.nysparks.com/shpo/.

FEMA FLOODPLAINS/FLOODWAYS

The project site indicated is located within a Federal Emergency Management Agency (FEMA) Floodplain/Floodway. The project sponsor should contact the local municipality to determine if any additional jurisdictions are applicable to the proposal.

SPDES STORMWATER (CONSTRUCTION)

If project activities will disturb over 1 acre of land, the project sponsor must obtain coverage under the current SPDES General Permit (GP-0-20-001) for Stormwater Discharge from Construction Activities, and a Stormwater Pollution Prevention Plan (SWPPP) must be developed which conforms to the requirements of the General Permit. As the Village of Mount Kisco is an MS4 community (Municipal Separate Storm Sewer System), the Town is responsible for review and acceptance of the SWPPP. Please be aware that the MS4 Acceptance Form must be submitted to the Department. Authorization for coverage under the SPDES General Permit is not granted until the Department issues any other necessary DEC permits.

OTHER

Please note that this letter only addresses the requirements for the following permits from the Department: Protection of Waters, State-listed Species, and Freshwater Wetlands. Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under "Programs" then "Division of Environmental Permits."

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

Katherine Coffin

Katherine Coffin
Division of Environmental Permits
Region 3, Telephone No. (845) 256-3158

Cc: Sue Booth-Binczik, DEC Wildlife
Christopher Collet, New Leaf Energy
Sarah Jamison, GEI Consultants

NOTE: Regarding erosion/sedimentation control requirements:
Stormwater discharges require a State Pollutant Discharge Elimination System (SPDES) Stormwater permit from this Department if they either:

- occur at industrial facilities and contain either toxic contaminants or priority pollutants OR
- result from construction projects involving the disturbance of 5000 square feet or more of land within the NYC Department of Environmental Protection East of Hudson Watershed or for proposed disturbance of 1 acre or more of land outside the NYC DEP Watershed

Your project may be covered by one of two Statewide General Permits or may require an individual permit. For information on stormwater and the general permits, see the DEC website at http://www.dec.ny.gov/chemical/8468.html.
For construction permits, if this site is within an MS4 area (Municipal Separate Storm Sewer System), the stormwater plan must be reviewed and accepted by the municipality and the MS-4 Acceptance Form must be submitted to the Department. If the site is not within an MS4 area and other DEC permits are required, please contact the regional Division of Environmental Permits.

GEI Consultants

Consulting
Engineers and
Scientists

Wetland and Waterbodies Delineation Report

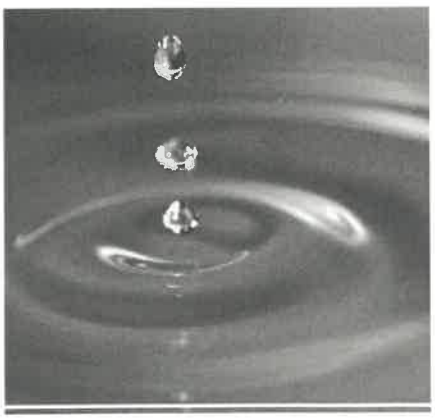
New Leaf Energy, Inc.

333 N. Bedford Rd., Mt. Kisco, New York

Submitted to:
Corina Solis
New Leaf Energy, Inc.
22 Century Hill Drive, Suite 303
Latham, NY 12110

Submitted by:
GEI Consultants, Inc., P.C.
1000 New York Ave., Suite B
Huntington Station, NY 11746

March 2024
Project 2300657



Damon Oscarson
Senior Ecologist

Mallory Smith, PWS
Senior Ecologist/Project Manager

Table of Contents

MS/DK:tc
B:\Working\NEW LEAF ENERGY INC\2300657 North Bedford Rd Mt Kisco\Report\Revised March 2024\Wetland Delin Report North Bedford Rd Mt. Kisco_Rev March 2024.docx

Abbreviations and Acronyms

ERM	Environmental Resource Mapper
FEMA	Federal Emergency Management Act
FIRM	Flood Insurance Rate Map
GEI	GEI Consultants, Inc., P.C.
NFHL	National Flood Hazard Layer
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NYSDEC	New York State Department of Environmental Conservation
USACE	United States Army Corps of Engineers
USACE Manual	1987 United States Army Corps of Engineers Wetlands Delineation Manual
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States
WSS	Web Soil Survey

Executive Summary

The Site at 333 N. Bedford Road is being assessed for development of a ground-mounted battery energy storage system. GEI Consultants, Inc., P.C. (GEI) was contracted to complete a wetland and waterbody delineation for all wetlands and waters of the United States (WOTUS). This wetland and waterbody delineation included a database review of U.S. Geologic Survey (USGS) Topographic Map Series and National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper (ERM), U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Soil Survey, and Federal Emergency Management Act (FEMA) Floodplain Data. After the database review, on-Site field surveys were conducted using the Routine On-Site Determination method as described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE Manual) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region.

The database review identified one NWI mapped freshwater wetland along the southern boundary of the site. A NYSDEC Class C(T) stream/NWI Riverine system was mapped south and west of the Site and an NWI emergent wetland was located along the southern boundary of the site. The Site is almost entirely mapped as one soil type which has hydric rating of 0. Approximately 1% of the Site is a soil type with a hydric rating of 59. Per FEMA, the Site is located partially in an area of minimal flood hazard (Zone X with less than 0.2 percent annual chance of flood).

The field surveys confirmed the presence of the NWI wetland to the south, and a linear ditch/wetland to the west. Though not jurisdictional by the NYSDEC currently, regulatory changes taking place on January 1, 2025 would result in these resources and their 100-ft. Adjacent Areas being regulated. If development is pursued and impacts to the wetlands or Adjacent Areas are anticipated, a NYSDEC wetlands permit will be required. If all resources can be avoided by the project activities, a Letter of No Permit Required can be requested.

1. Introduction

1.1 Site Location and Setting

The proposed project area, located at 333 N. Bedford Rd., Mt. Kisco, Westchester County, New York, encompasses an area of approximately 5.96 acres. The Site consists of a grassy athletic field, paved parking lot areas, and forested areas with a stream and wetland system. Properties surrounding the project area include commercial buildings, parking lots, paved roads, railroad tracks, forested area, and wetlands. The surrounding area consists of residential houses and commercial buildings.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm), the Site is covered by two soil types: Urban land (Uf), with a hydric rating of 0 and Fluvaquents-Udifluvents complex, frequently flooded (Ff), with a hydric soil rating of 59.

Per the FEMA's National Flood Hazard Layer (NFHL) Viewer (https://msc.fema.gov/portal/home), a small portion of the Site at the southern end is located with flood hazard area (Zone AE). The majority of the site is located within Zone X (0.2% Annual Chance Flood Hazard area.)

2. Methodology

Before a site visit was conducted, GEI reviewed several resource reference maps covering the Site. These included: the USGS Mount Kisco, NY 2019 Quadrangle Topographic Map; the USDA NRCS Soils Map; the NYSDEC Environmental Resource Mapper; and the USFWS NWI map. These maps identify potential drainageways, soil units, wetlands, and streams within the Site.

GEI walked the Site to determine the extent and regulatory status of any wetlands and streams present on Site or directly adjacent to the site. Wetland areas (if present) were identified and delineated in accordance with the USACE Manual (Environmental Laboratory, 1987) and the Northcentral and Northeast Regional Supplement (USACE, 2012).

Soils, vegetation, and hydrology were observed and recorded to determine the potential presence of wetland habitats. A soil test pit was dug at representative wetland areas to examine soils for evidence of hydric soil indicators. The soil profile was described, and key characteristics including color and presence of redox concentrations were recorded. Soil colors were determined using Munsell Soil Color Charts (Munsell Color, 2010). Vegetation was evaluated at each soil pit location to determine the presence of hydrophytic plant communities. Wetland indicator status was obtained for each species referring to the USACE Northcentral and Northeast 2020 Regional Wetland Plant List (USACE, 2020). Wetland hydrology indicators were also assessed at each soil pit location, including the presence of standing water, soil saturation within 12 inches of the surface, and/or evidence suggesting episodes of past inundation. Direct observations and indicators of wetland hydrology were evaluated and recorded. A Cowardin classification identification code was assigned to each wetland area based upon the representative wetland features and the Cowardin classification system definitions (Cowardin, et al. 1979).

The wetland boundary and data points were then mapped with a Trimble R1 GNSS receiver to facilitate sub-meter accuracy. Representative photographs of the wetland (if present) and project area were taken and are included in this report (Appendix A).

If no wetlands were present, GEI staff identified and recorded Site conditions including dominant plant species, habitat types, and surrounding land use.

3. Findings

3.1 Database Review

During the database review, various data sources were consulted to identify potential drainageways, soil units, wetlands, streams, and floodplains within the Site. No NYSDEC regulated wetlands were identified within 100 feet of the Site, thought a Class C(T) stream was shown to the south of the Site. One NWI palustrine emergent wetland (PEM1E) was mapped along the south side of the Site and appears to be associated with a mapped stream system (R3UBH). The NRCS soil survey maps indicated one soil type, of which had a hydric rating of 2. Per the FEMA Flood Insurance Rate Maps (FIRMs), the Site is located entirely within an area of minimal flood hazard (Zone X).

3.2 Wetlands and Waterbodies

Representatives from GEI visited the Site on February 9, 2023 and March 14, 2024, and found approximately 6% (0.37 acres) of the Site (5.96 acres) consists of wetlands and waterbodies.

A freshwater stream system originating southeast of the Site drains onto the Site and into an emergent wetland system (PEM1E) along the southwest border. The stream system continues to flow west through the Site then northeast offsite along the train tracks. The emergent wetland system was dominated by common reed (*Phragmites australis*). Some fringe forested wetland area was located along the southern boundary dominated by red maple (*Acer rubrum*), eastern cottonwood (*Populus deltoides*), and highbush blueberry (*Vaccinium corymbosum*). Upland forested areas were dominated by red maple, sugar maple (*Acer saccharum*), burning bush (*Euonymus alatus*), honeysuckle (*Lonicera* sp.), and Asiatic bittersweet (*Celastrus orbiculatus*). Wetland A is anticipated to be under the jurisdiction of the USACE as a wetland hydrologically connected to other on- and off-Site resources. Wetland A would not be under the jurisdiction of the state currently, but would be regulated as of January 1, 2025 as an urban wetland. A 100-ft. Adjacent Area would also be regulated.

The stream system enters the property from the east as an NWI R3UBH and drains into the emergent wetland then flowing offsite to the north as an NWI R5UBH stream. The stream system is a NYSDEC Class C(T) stream described as "waters supporting fisheries and suitable for non – contact activities." Stream A would be under the jurisdiction of the USACE as a perennial stream. It would also be under the jurisdiction of the state as a Class C(T) stream.

In March 2024, a linear ditch wetland was observed off the western boundary of the property, along the foot of a railroad embankment. The wetland was found to be on the far side of a

chain link fence on railroad property. Standing water was present and shrubby vegetation including red maple, honeysuckle, and Asiatic bittersweet dominated the community. This feature is anticipated to be under the jurisdiction of the USACE due to hydrologic connections to other resources. Though not on the subject property and not currently regulated by the NYSDEC, this wetland is anticipated to become state-regulated on January 1, 2025 as an urban wetland. A 100-ft Adjacent Area would also be regulated.

The wetland and waterbodies identified within the Site and their Cowardin descriptions are summarized in Table 1 and a summary of each of these wetlands follows.

Table 1 – Delineated Wetlands and Waterbodies

Feature ID	On-Site Area	Cowardin Classification	Description
Stream A	**0.08 ac.**	R3UBH	Perennial stream system with unconsolidated bottom.
Wetland A	**0.29 ac.**	PEM1E	Freshwater emergent marsh dominated by common reed (*Phragmites australis*).
Ditch Wetland	**370 ft.**	PSS1E	Linear scrub-shrub ditch along the toe of a railroad embankment.
Total Acreage	**0.37 ac. / 370 ft.**		

Notes:
*Acreage within Site based on approximate site boundary lines
R3UBH= riverine, upper perennial, unconsolidated bottom
PEM1E = palustrine emergent, persistent, seasonally flooded/saturated
PSS1E = palustrine scrub-shrub, persistent, seasonally flooded/saturated

4. Conclusions

All delineated resources are anticipated to be under the jurisdiction of the USACE and any disturbances to them would require a federal permit.

Stream 1 is a Class C(T) stream and is therefore regulated by the NYSDEC. Neither of the wetlands are currently regulated by NYSDEC but would become jurisdictional as of January 1, 2025. 100-ft. Adjacent Areas would also be regulated. Any impacts to the stream would require authorization by NYSDEC of an Article 15 Protection of Waters Permit. Any impacts to the wetlands or their 100-ft Adjacent Areas would require authorization of an Article 24 Freshwater Wetlands Permit as of January 1, 2025.Further guidance on anticipated permits and authorizations can be conducted upon review of preliminary site plans.

5. Limitation

The Site investigation described in this report was conducted and prepared on behalf of and for the exclusive use of New Leaf Energy, Inc. No other entity may rely upon the results of the assessment or contents of this report for any reasons or purpose, whatsoever.

GEI performed this investigation in accordance with generally accepted practices of engineers, scientists, and/or consultants providing similar services at the same time, in the same locale, and under like circumstances. No other warranty, expressed or implied, is made as to the professional opinions included by GEI in this report.

6. References

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Munsell Color (Firm), Munsell Soil Color Charts: with Genuine Munsell Color Chips. Grand Rapids, MI: Munsell Color, 2010.

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. http://wetland-plants.usace.army.mil/ U.S. Army Corps of Engineers Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH.

United States Geological Survey Topographic Map, USGS Mount Kisco, 7.5-Minute Series, dated 2019.

United States Department of Agriculture and Natural Resources Conservation Service, Natural Resources Conservation Service (NRCS), Web Soil Survey, January 11, 2023, on-line: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Figure

LEGEND:

- PHOTO DIRECTION AND LOCATION
- APPROXIMATE LOCATION OF CULVERT
- APPROXIMATE LOCATION OF WETLAND SAMPLE POINT
- APPROXIMATE LOCATION OF UPLAND SAMPLE POINT
- APPROXIMATE LOCATION OF STREAM LINE ESTIMATED BY AERIAL IMAGERY MAPPED BY GEI, 2/9/23
- APPROXIMATE LOCATION OF FRESHWATER WETLAND MAPPED BY GEI, 2/9/23
- PROJECT SITE AREA

Battery Energy Storage System Site 333 N Bedford Rd, Mt Kisco Westchester, New York	N 0 180 360 SCALE: 1" = 180'	GEI Consultants	**WETLAND DELINEATION**
New Leaf Energy, Inc.			Figure: 1

March 2024

B:\Working\NEW LEAF ENERGY INC\2300657 North Bedford Rd Mt Kisco\GIS\Wetland_Delineation_North bedford_FINAL.mxd

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

Appendix A

Photo Documentation

Photo No. 1 – Looking northeast from open field southcentral portion of the Site.

Photo No. 2 – Looking northwest from open field in the southeast portion of the Site.

Photo No. 3 – Looking south from open field in the northwestern portion of the Site.

Photo No. 4 – Looking south at freshwater wetland area and culvert from the western portion of the Site.

Photo No. 5 – Looking at wetland soil core.

Photo No. 6 – Looking west at possible access path east portion of the site.

Photo No. 7 – Wetland ditch along railroad embankment.

Photo No. 8 – Wetland ditch along railroad embankment.

SITE USE PERMIT SET

333 NORTH BEDFORD RD, MOUNT KISCO, NY 10549
BATTERY ENERGY STORAGE SYSTEM

GENERAL NOTES

1. AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE THE EPC PROVIDER HIRED BY THE SYSTEM/PROJECT OWNER.
2. WHEN THERE IS A CONFLICT BETWEEN THESE GENERAL NOTES AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
3. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING: LOCAL BUILDING CODE, LOCAL ELECTRICAL CODE, ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK AND THOSE CODES AND STANDARDS LISTED IN THESE DRAWINGS.
4. THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A CONSTRUCTION LEVEL DESIGN AND ASSOCIATED DRAWINGS AND DETAILS.
5. COORDINATE THESE DRAWINGS WITH SPECIFICATIONS AND MANUFACTURER INSTALLATION AND OPERATION MANUALS.
6. THE EXISTING CONDITIONS REPRESENTED ON THESE PLANS ARE BASED ON PUBLICLY AVAILABLE INFORMATION AND THE SITE DISCOVERY SUMMARIZED IN THESE DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF SUCH INFORMATION AND SUPPLEMENT WITH ANY ADDITIONAL REQUIRED INFORMATION.
7. UNLESS INDICATED AS EXISTING (E), ALL PROPOSED MATERIALS AND EQUIPMENT SHALL BE CONSIDERED TO BE NEW.
8. ALL EQUIPMENT AND COMPONENTS SHALL BE MOUNTED IN COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS, CONSTRUCTION DETAILS, AND/OR PRUDENT INDUSTRY STANDARDS.
9. TO THE EXTENT THAT TREES AND OTHER FEATURES AFFECT THE SYSTEM'S PRODUCTION, SUCH PRODUCTION MODELING IS BASED ON THE EXISTING APPROXIMATE HEIGHTS AND LOCATIONS RELATIVE TO THE SYSTEM AND MAY BE IMPACTED AS TREES GROW AND OTHER FEATURES CHANGE.

PROJECT SCOPE

THIS PROJECT CONSISTS OF THE INSTALLATION OF BATTERY ENERGY STORAGE EQUIPMENT, PER THE SYSTEM DESCRIPTION BELOW. THE ENERGY STORAGE MODULES WILL BE INSTALLED IN PURPOSE BUILT ENCLOSURES WITH INTEGRATED FIRE SUPPRESSION AND COOLING SYSTEMS. THE ENERGY STORAGE MODULES WILL BE WIRED IN SERIES AND PARALLEL TO ACCOMMODATE THE POWER REQUIREMENTS OF THE POWER CONVERSION SYSTEM OR DC-DC CONVERTER (DEPENDENT ON PROJECT REQUIREMENTS). THE COMBINED POWER WILL BE CONNECTED TO CERTIFIED POWER CONVERSION SYSTEMS THAT CONVERT AC/DC AND DC/AC FOR CHARGE/DISCHARGE CAPABILITIES. DC-DC CONVERTERS WILL BE USED IN DC COUPLED PROJECTS WITH ONLY CERTIFIED INVERTERS (DC/AC) DISCHARGING ENERGY TO THE GRID.

ENERGY STORAGE SYSTEM DESCRIPTION

SYSTEM POWER CAPACITY	5000 KWAC
SYSTEM ENERGY CAPACITY	20000 KWH
POWER CONVERSION SYSTEM / INVERTER	(6) TESLA MEGAPACK2 XL

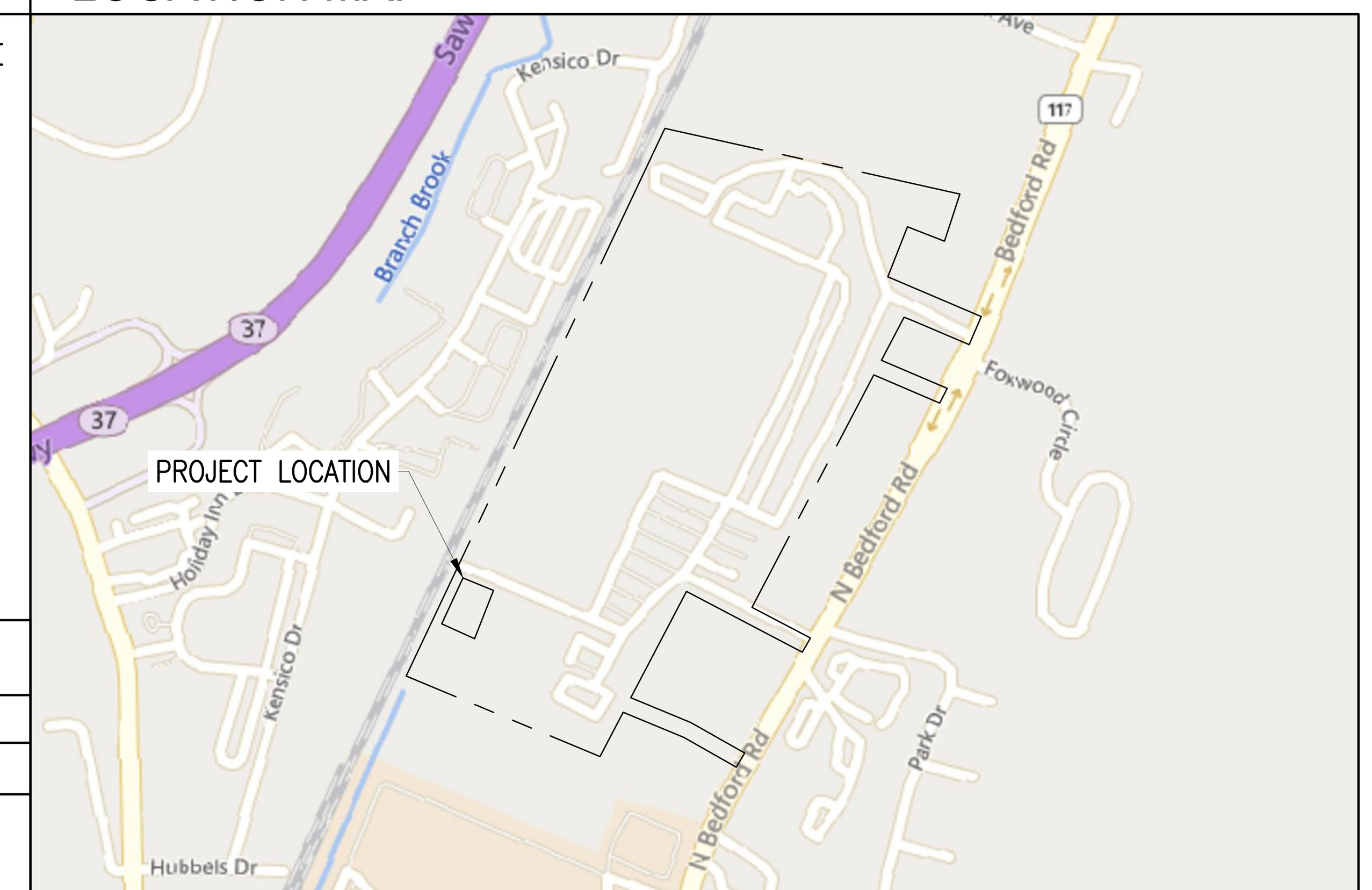
TOTAL SYSTEM DESCRIPTION

TOTAL STORAGE POWER CAPACITY	5000 KWAC
MAXIMUM EXPORT TO UTILITY	4 HOURS AT RATED CAPACITY
STORAGE CHARGING MODE	GRID ONLY

SPECIAL INSPECTIONS

GENERAL CONSTRUCTION SPECIAL INSPECTIONS	CODE/SECTION
1. FIRE RESISTANT PENETRATIONS AND JOINTS	BC 1704.27
2. ENERGY CODE COMPLIANCE INSPECTIONS	BC 110.3.5
FINAL	

LOCATION MAP



AERIAL VIEW

DRAWING LIST

SHEET NUMBER	SHEET TITLE
T-1.0	TITLE PAGE
	CIVIL
C-0.0	CIVIL NOTES
C-1.0	EXISTING CONDITIONS PLAN
C-2.0	TREE CLEARING AND REMOVAL PLAN
C-3.0	LAYOUT AND MATERIALS PLAN
C-4.0	GRADING AND EROSION CONTROL PLAN
C-5.0	CIVIL DETAILS

APPLICABLE CODES AND STANDARDS

2017 NATIONAL ELECTRICAL CODE
2020 BUILDING CODE OF NEW YORK STATE
UL-1741 – INVERTERS, COMBINER BOXES
UL-2703 – RACKING MOUNTING SYSTEMS AND CLAMPING DEVICES FOR PV MODULES
UL-1642 – STANDARD FOR LITHIUM BATTERIES
UL-1973 – STANDARD FOR BATTERIES FOR USE IN LIGHT ELECTRIC RAIL (LER) APPLICATIONS AND STATIONARY APPLICATION
UL-9540 – STANDARD FOR ENERGY STORAGE SYSTEM AND EQUIPMENT
NYSDEC GP-20-001 – NYSDEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY
NYSDEP – REVIEW OF SWPPP UNDER NYSDEP WATERSHED REGULATIONS

PROJECT DIRECTORY

SYSTEM / PROJECT OWNER
NORTH BEDFORD ENERGY STORAGE 1, LLC
NEW LEAF ENERGY
55 TECHNOLOGY DRIVE
SUITE 102
LOWELL, MA 01851

LAND OWNER / HOST
DP 21, LLC
ATTENTION: MARK BLANDFORD
333 N. BEDFORD ROAD SUITE 145
MOUNT KISCO, NY 10549

AUTHORITY HAVING JURISDICTION
VILLAGE OF MOUNT KISCO
104 MAIN STREET
MOUNT KISCO, NY 10549

UTILITY
CON EDISON

CIVIL ENGINEER
FIRM: NEW LEAF ENERGY, INC
CONTACT: CHRIS COLLET
PHONE: 518-857-1527

DESIGN ENGINEER
FIRM: NEW LEAF ENERGY, INC.
CONTACT: BRIAN HUFE
EMAIL: BHUFE@NEWLEAFENERGY.COM

GENERAL ABBREVIATIONS

(E)	EXISTING
AHJ	AUTHORITY HAVING JURISDICTION
AL	ALUMINUM
APPROX	APPROXIMATE
ARY	ARRAY
BESS	BATTERY ENERGY STORAGE SYSTEM
BLDG	BUILDING
NLE	NEW LEAF ENERGY
CL	CENTERLINE
DAS	DATA ACQUISITION SYSTEM
DIA	DIAMETER
DO	DITTO
EW	EAST-WEST
FBO	FURNISHED BY OTHERS
FF	FORWARD FACING
GALV	GALVANIZED
HDG	HOT DIP GALVANIZED
HVAC	HEATING VENTILATION AND AIR CONDITIONING
ID	INSIDE DIAMETER
MFR	MANUFACTURER
MOD	SOLAR MODULE
NS	NORTH-SOUTH
NTS	NOT TO SCALE
OAE	OR APPROVED EQUAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PV	PHOTOVOLTAIC
PVC	POLY VINYL CHLORIDE
SCH	SCHEDULE
SS	STAINLESS STEEL
SSS	SOLAR SUPPORT STRUCTURE
STC	STANDARD TEST CONDITIONS
TBD	TO BE DETERMINED
TP	TAMPER PROOF
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
WP	WEATHER PROOF

REV 1.0

BOUNDARY & TOPOGRAPHIC SURVEY:
COLLIERS ENGINEERING AND DESIGN
SEPTEMBER 20, 2023

WETLAND STREAM AND DELINEATION REPORT:
GEI CONSULTANTS, INC., P.C.
MARCH 2023 AND MARCH 2024

GEOTECHNICAL REPORT:
TO BE DETERMINED

RISK CATEGORY: I
WIND CRITERIA:
EXPOSURE CATEGORY: C
WIND SPEED (V): 101 MPH
TOPOGRAPHIC FACTOR (K_{zt}): 1.0

SNOW CRITERIA:
GROUND SNOW (P_g): 20 PSF
MIN. FLAT ROOF SNOW (P_{f_min}): 0 PSF
EXPOSURE FACTOR: (C_e): 1.0

SEISMIC CRITERIA
SITE CLASS: D
S_S: 0.268
S_I: 0.07
S_{DS}: 0.283
S_{DI}: 0.112

55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (800) 818-5249
FAX: (888) 678-8991
WWW.NEWLEAFENERGY.COM

NOT FOR CONSTRUCTION

STATE OF NEW YORK
TRAVIS D ROSENCRANS
095246
LICENSED PROFESSIONAL ENGINEER
4/10/24

IT IS A VIOLATION OF LAW FOR ANY PERSON TO ALTER ANY DOCUMENT WHICH BEARS THE SEAL OF A PROFESSIONAL ENGINEER, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.

333 N. BEDFORD RD BESS
333 N. BEDFORD RD
MT. KISCO, NY, 10549

CM PROJECT NUMBER:
123-291

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	01/26/24			ZONING BOARD OF APPEALS- SUB #1
	4/9/24			ZONING BOARD OF APPEALS- SUB #2

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

T-1.0

TITLE PAGE

LAST SAVED BY: Travis Rosencranse
PLOT DATE: March 26, 2024 7:42 AM
FILE NAME: C:\Users\TRosencranse\Box\Cad_Bedford\SUP\T-1 TITLE SHEET.dwg

GENERAL CIVIL NOTES

APPROVALS

1. SITE PLAN APPROVAL DATED MONTH DAY, 20__.
2. SEQR NEGATIVE DECLARATION DATED MONTH DAY, 20__.
3. THIS PROJECT IS LOCATED WITHIN THE NYC WATERSHED AND REQUIRES PREPARATION OF A STORMWATER MANAGEMENT POLLUTION PREVENTION PLAN (SWPPP) BE REVIEWED BY NYCDEP FOR APPROVAL.
4. THE PROJECT LOCATION IS WITHIN THE NYCDEP DESIGNATED MAIN STREET AREA.

GENERAL NOTES

1. AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE THE EPC PROVIDER HIRED BY THE SYSTEM OWNER. "SUBCONTRACTOR" IS THE EPC PROVIDER'S INSTALLATION SUBCONTRACTORS (INCLUDING SITE WORK SUBCONTRACTOR) AND CIVIL ENGINEER OF RECORD (CEOR) IS THE EPC PROVIDER'S DESIGNATED CIVIL ENGINEER.
2. EXISTING CONDITIONS ALTA SURVEY INFORMATION WAS PREPARED BY COLLIERS ENGINEERING AND DESIGN DATED SEPTEMBER 20, 2023. HORIZONTAL DATUM IS REFERENCED TO THE NAD83. VERTICAL DATUM IS REFERENCED TO NAVD88.
3. WETLAND BOUNDARIES AND STREAM DELINEATION ARE BASED ON GEI DELINEATION PREPARED IN MARCH 2023 AND MARCH 2024.
4. THERE IS NO GUARANTEE THAT ALL THE EXISTING UTILITIES, WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT LIMITS ARE ON THIS DRAWING. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK AND SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM THIS WORK. A DIG SAFELY NEW YORK TICKET NUMBER INDICATING ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED SHALL BE OBTAINED PRIOR TO COMMENCING WORK. CONTACT "DIG SAFELY NEW YORK" AT 1-800-962-7962 AND PROVIDE 72 HOURS NOTICE TO RECEIVE A TICKET NUMBER.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE ELECTRIC UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE UTILITY CONNECTIONS WITH THE RESPECTIVE COMPANIES PRIOR TO ANY UTILITY CONSTRUCTION.
6. THE SUBCONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT TO THE CONTRACTOR.
7. VILLAGE/TOWN APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES.
8. SUBCONTRACTOR(S) SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND SITE CONDITIONS PRIOR TO BIDDING AND PRIOR TO CONSTRUCTION.
9. ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE CONTRACTOR/CEOR FOR CLARIFICATION AND RESOLUTION PRIOR TO BIDDING OR CONSTRUCTION.
10. AREAS USED AS FOR PARKING DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS INCLUDING, BUT NOT LIMITED TO, REGRADING, LOAMING AND SEEDING. IN NO CASE SHALL PARKING AREAS, LAYDOWN AREAS, CONSTRUCTION TRAILERS, AND PORTABLE TOILETS BE LOCATED WITHIN A WETLAND RESOURCE AREA AND/OR ANY BUFFER ZONES.

SITE PREPARATION NOTES

1. AREAS DESIGNATED FOR TREE CLEARING SHALL BE CLEARED ONLY. NO GRUBBING OR STRIPPING OF TOPSOIL IS NECESSARY, UNLESS SPECIFICALLY SHOWN OTHERWISE.
2. TREE CLEARING AND STUMP REMOVAL SHALL BE IN ACCORDANCE WITH APPROVED LOCAL, STATE, AND FEDERAL PERMITS. TREES TO BE REMOVED SHALL BE MARKED BY THE CONTRACTOR'S PROJECT MANAGER OR SITE SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK ON-SITE.
3. SEASONAL TREE CLEARING RESTRICTIONS MAY BE REQUIRED FOR ENDANGERED SPECIES PROTECTION. THE CONTRACTOR SHALL REFER TO THE TREE CLEARING PLAN FOR ANY RESTRICTIONS.
4. THE SUBCONTRACTOR(S) IS/ARE RESPONSIBLE FOR ANY DAMAGE TO EXISTING SITE CONDITIONS TO REMAIN THAT ARE DUE TO SUBCONTRACTOR(S) OPERATIONS.
5. ITEMS TO BE REMOVED THAT ARE NOT STOCKPILED FOR LATER REUSE ON THE PROJECT OR DELIVERED TO THE OWNER SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE SUBCONTRACTOR(S).
6. THE SUBCONTRACTOR(S) SHALL BE RESPONSIBLE FOR COORDINATING THEIR EFFORTS WITH ALL TRADES.
7. THE SUBCONTRACTOR(S) SHALL COORDINATE ALL ADJUSTMENT OR ABANDONMENT OF UTILITIES WITH THE RESPECTIVE UTILITY COMPANY.
8. TEMPORARY CONSTRUCTION HAUL ROADS SHALL BE USED DURING CONSTRUCTION IF DEEMED NECESSARY BY THE CONTRACTOR. THE USE OF SEPARATION FABRICS SHALL BE USED TO FACILITATE FUTURE REMOVAL AND RECOVERY OF GRANULAR MATERIALS. HAUL ROADS SHALL BE MAINTAINED DURING CONSTRUCTION WITH APPROPRIATE EROSION CONTROL AND STORMWATER REDUCTION MEASURES. ONCE REMOVED, THE SUB-BASE AREA SHOULD BE DECOMPACTED WITH A YORK RAKE, LOAM REPLACED, AND RESEEDED.
9. THE SITE ACCESS ROADS ARE DESIGNED TO MEET STATE FIRE CODE FOR FIRE TRUCK ACCESS. MEANS AND METHODS FOR ACCOMMODATING LARGER CONSTRUCTION DELIVERY VEHICLES MUST BE DETERMINED BY THE CONTRACTOR.
10. THE PROPOSED ROAD DESIGN SHOWN IN THESE PLANS SHALL BE CONSIDERED THE FINAL DESIGN CONDITION. ADDITIONAL MEANS AND METHODS OF CONSTRUCTION DEEMED NECESSARY BY THE OWNER OR CONTRACTOR SHALL BE DESIGNED BY OTHERS AND INCLUDED IN THE INITIAL EPC BID PRICE (INCLUDING, BUT NOT LIMITED TO: TEMPORARY HAUL ROADS, WIDENED OR LENGTHENED ROADS AND TURN OUT AREAS FOR LARGER CONSTRUCTION AND DELIVERY VEHICLES, TEMPORARY PARKING AND LAYDOWN AREAS, MODIFIED GRADING TO SUPPORT CONSTRUCTION AND DELIVERY VEHICLES, ETC.).
11. PROJECT LOCATION IS WITHIN THE EAST HUDSON WATERSHED. PREPARATION OF A SWPPP AND PERMITTING UNDER GP-0-20-001 IS REQUIRED.

EROSION AND SEDIMENT CONTROL MEASURES

1. A SPDES PERMIT SHALL BE IN PLACE PRIOR TO COMMENCING ANY EARTH DISTURBANCE.
2. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR DISTURBANCE AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
3. SEDIMENT BARRIERS SHALL BE INSPECTED AND APPROVED BY THE VILLAGE/TOWN OF MOUNT KISCO OR THEIR REPRESENTATIVE AND THE CONTRACTOR/CEOR BEFORE CONSTRUCTION BEGINS.
4. STRAW BALES AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE OF NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY WHEN INSTALLED.
5. DISTURBED AREAS SHALL BE BLANKETED OR SEEDED AND MULCHED AS SOON AS PRACTICAL AFTER CONSTRUCTION ACTIVITIES IN THAT AREA HAVE CONCLUDED. ALL ERODABLE/BARE AREAS SHALL BE BLANKETED OR SEEDED AND MULCHED WITHIN 7 DAYS WITH TEMPORARY EROSION CONTROL SEEDING.
9. PRIOR TO SEEDING, ACCESS AISLES, TEMPORARY STAGING, STORAGE, AND PARKING AREAS ARE TO BE DE-COMPACTED AND RESTORED PER THE SWPPP.
10. STABILIZE SLOPES GREATER THAN 3:1 (HORIZONTAL: VERTICAL) WITH SEED, SECURED GEOTEXTILE FABRIC, SPRAYED COMPOST BLANKET, OR RIP-RAP AS REQUIRED TO PREVENT EROSION DURING CONSTRUCTION.
11. SEDIMENT BARRIERS SHALL BE CONSTRUCTED AROUND ALL SOIL STOCKPILE AREAS.
12. CLEAN OUT PROJECT DRAINAGE FEATURES AND STRUCTURES (I.E. CULVERTS, BASINS, SWALES, ETC.) AFTER COMPLETION OF CONSTRUCTION.
13. SEDIMENT COLLECTED DURING CONSTRUCTION BY THE VARIOUS EROSION CONTROL SYSTEMS SHALL BE DISPOSED OF ON THE SITE ON A REGULAR BASIS. SEDIMENT SHALL BE REMOVED FROM EROSION CONTROL SYSTEMS WHEN THE HEIGHT OF THE SEDIMENT EXCEEDS ONE-HALF OF THE HEIGHT OF THE SEDIMENT CONTROL MEASURE.
14. AFTER ALL DISTURBED AREAS HAVE BEEN FULLY STABILIZED, THE SUBCONTRACTOR(S) SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AT THE CONTRACTOR/CEOR DIRECTION.
15. AFTER THE REMOVAL OF TEMPORARY EROSION CONTROL MEASURES, THE SUBCONTRACTOR(S) SHALL GRADE AND SEED AREA OF TEMPORARY EROSION CONTROL MEASURE.
16. DAMAGED OR DETERIORATED EROSION AND SEDIMENT CONTROL ITEMS WILL BE REPAIRED IMMEDIATELY AFTER IDENTIFICATION OR AS DIRECTED BY THE CONTRACTOR/CEOR.
17. THE TRAINED CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL PRACTICES AND POLLUTION PREVENTION MEASURES BEING IMPLEMENTED WITHIN THE ACTIVE WORK AREA DAILY TO ENSURE THAT THEY ARE BEING MAINTAINED IN EFFECTIVE OPERATING CONDITION AT ALL TIMES. IF DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR SHALL BEGIN IMPLEMENTING CORRECTIVE ACTIONS WITHIN ONE BUSINESS DAY AND SHALL COMPLETE THE CORRECTIVE ACTIONS IN A REASONABLE TIME FRAME.
18. THE OWNER/OPERATOR SHALL HAVE THE QUALIFIED INSPECTOR CONDUCT INSPECTIONS ONCE EVERY SEVEN CALENDAR DAYS FOR SITE DISTURBANCES LESS THAN FIVE ACRES. FOR SITES WHICH HAVE RECEIVED AUTHORIZATION FROM NYSDEC TO DISTURB FIVE ACRES OR MORE, THE QUALIFIED INSPECTOR SHALL CONDUCT INSPECTIONS TWICE EVERY SEVEN CALENDAR DAYS WITH NO LESS THAN TWO DAYS SEPARATING THE INSPECTIONS.
19. PIPE OUTLETS (IF ANY) SHALL BE STABILIZED WITH STONE. REFER TO DETAILS.
20. WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE DISCHARGED TO AN APPROPRIATE SEDIMENT TRAPPING DEVICE.
21. WHEN TEMPORARY DRAINAGE IS ESTABLISHED, EROSION/SEDIMENTATION CONTROL MEASURES MAY BE REQUIRED BY CONTRACTOR/CEOR.
22. GRAVEL ROADS, ACCESS DRIVES, PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH, AND VEHICLE WASH DOWN FACILITIES, SHALL BE PROVIDED TO PREVENT SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL REACHING A PUBLIC OR PRIVATE ROADWAY SHALL BE REMOVED BEFORE THE END OF EACH WORKDAY.
23. NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OR POLLUTION RUNOFF. NO RE-FUELING SHALL OCCUR WITHIN 100 FEET OF ANY WETLAND RESOURCE AREA AND 200 FEET FROM RIVERFRONT. LEAKING EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.
24. THE COST OF REPAIRING EROSION CONTROL MEASURES OR REMOVING SEDIMENT FROM EROSION CONTROL SYSTEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE APPLICABLE EROSION CONTROL ITEM.
25. EROSION CONTROL MEASURES SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SEDIMENT AND EROSION CONTROL MEASURES ARE OPERATIONAL.
26. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DUST FROM FORMING.
27. EROSION CONTROL MEASURES AS SHOWN ON THESE DRAWINGS IS INTENDED TO CONVEY MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES AS NECESSARY TO PREVENT SOIL EROSION AND TO COMPLY WITH THE PROJECT'S SPDES PERMIT STORMWATER POLLUTION PREVENTION PLAN.

LAYOUT AND MATERIAL NOTES

1. THE CONTRACTOR SHALL HAVE PERIMETER FENCE, ELECTRICAL TRENCHES, AND RACKING STAKED OUT BY A LICENSED LAND SURVEYOR PRIOR TO ANY INSTALLATION OF RACKING OR TRENCHES.
2. EXCESS TRENCH MATERIAL SHALL BE PLACED ON THE SIDES OF THE TRENCH AND PLACED AT OR NEAR THE SAME LOCATION AS WHERE EXCAVATED. AFTER TRENCH HAS BEEN BACKFILLED TOPSOIL REMOVED SHALL BE PLACED ON TOP AND LIGHTLY COMPACTED.
3. SUBCONTRACTOR SHALL INSTALL CONDUITS FOR ALL ELECTRIC CONDUIT CROSSINGS PRIOR TO INSTALLATION OF THE GEOGRID MATERIAL. THE GEOGRID SHALL NOT BE HORIZONTALLY CUT ONCE INSTALLED.

GRADING NOTES

1. WHERE PROPOSED GRADES MEET EXISTING GRADES, SUBCONTRACTOR(S) SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW WORK. PONDING AT TRANSITION AREAS WILL NOT BE ALLOWED.
2. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES, PUBLIC ROADWAYS, AND ELECTRICAL EQUIPMENT AREAS.

PLANTING NOTES

1. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTINGS SHOWN ON THE DRAWINGS.
2. MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
3. PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
4. PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
5. PLANT SIZE AND QUANTITY SHALL NOT CHANGE WITHOUT APPROVAL OF CONTRACTOR/CEOR.

ABBREVIATIONS

BIT	BITUMINOUS
BMP	BEST MANAGEMENT PRACTICE
BVW	BORDERING VEGETATED WETLANDS
CB	CONCRETE BOUND
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
DH	DRILL HOLE
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
ECB	EROSION CONTROL BARRIER
FES	FLARED END SECTION
FH	FIRE HYDRANT
FND	FOUND
GG	GAS GATE
HDPE	HIGH-DENSITY POLYETHYLENE
HW	HEADWALL
ILSF	ISOLATED LANDS SUBJECT TO FLOODING
IP	IRON PIPE
ISW	ISOLATED WETLANDS (FEDERAL JURISDICTION)
LA	LANDSCAPED AREA
LOW	LIMIT OF WORK
N/F	NOW OR FORMERLY
NTS	NOT TO SCALE
OCS	OUTLET CONTROL STRUCTURE
OHW	OVERHEAD WIRE
RCP	REINFORCED CONCRETE PIPE
RET	RETAINING
ROW	RIGHT-OF-WAY
SB	STONE BOUND
TEL	TELEPHONE CABLE
TYP	TYPICAL
UP	UTILITY POLE
WG	WATER GATE

REV 1.1

LEGEND

ROAD (GRAVEL)
FENCE LINE
PROPERTY LINE
FLOW DIRECTION
BANK LINE/FLAG
WETLAND LINE/FLAG
(E) MAJOR CONTOUR
(E) MINOR CONTOUR
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
RIVERFRONT AREA
100-YEAR FLOOD HAZARD AREA
STREAM
STREAM BUFFER
TREELINE
EXISTING TREELINE
SILT FENCE
SILT SOCK
STORM PIPE
ELECTRICAL TRENCH
OVERHEAD ELECTRIC
SEWER LINE
WATER LINE
GAS MAIN
23-23A ASSESSORS MAP-LOT
SIGN
UTILITY POLE (WITH GUY ANCHOR)
HYDRANT
WATER VALVE
INDIVIDUAL TREE
FOUND REBAR PROPERTY MARKERS

NOTE: ITALIC FONTS INDICATE EXISTING CONDITIONS. STANDARD FONTS INDICATE PROPOSED CONDITIONS.

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CM PROJECT NUMBER: 123-291

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1	01/26/24			ZONING BOARD OF APPEALS- SUB #1
	4/9/24			ZONING BOARD OF APPEALS- SUB #2

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-0.0
CIVIL NOTES

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EXISTING CONDITIONS PLAN

SCALE: 1" = 40'

0 40' 80'

NOTES:

1. EXISTING CONDITIONS PLAN IS BASED ON ALTA SURVEY PREPARED BY COLLIERS ENGINEERING AND DESIGN DATED SEPTEMBER 20, 2023.
2. WETLAND AND STREAM DELINEATION ARE BASED ON WETLAND AND WATERBODIES DELINEATION REPORT PREPARED BY GEI CONSULTANTS, INC. ,P.C. DATED MARCH 2023 AND ADDITIONAL FIELD VERIFICATION IN MARCH 2024.

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STATE OF NEW YORK
TIMOTHY D. ROSENCRANS
LICENSED PROFESSIONAL ENGINEER
098248

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C-1.0
EXISTING CONDITIONS PLAN

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LEGEND

(hatch)	TREE CUTTING, STUMPS REMAIN	=	0.00 AC
(cross-hatch)	TREE CLEARING AND GRUBBING	=	0.30 AC
	TOTAL	=	0.30 AC

NOTES:

TREE CLEARING IT NOT WITHIN PRIMARY TREE PROTECTION ZONE, SECONDARY PROTECTION ZONE OR PUBLIC ROW AS DESIGNATED BY THE VILLAGE/TOWN OF MT. KISCO CODE.

TREE CLEARING AND REMOVAL PLAN

SCALE: 1" = 40'

0 40' 80'

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TREE CLEARING AND REMOVAL PLAN

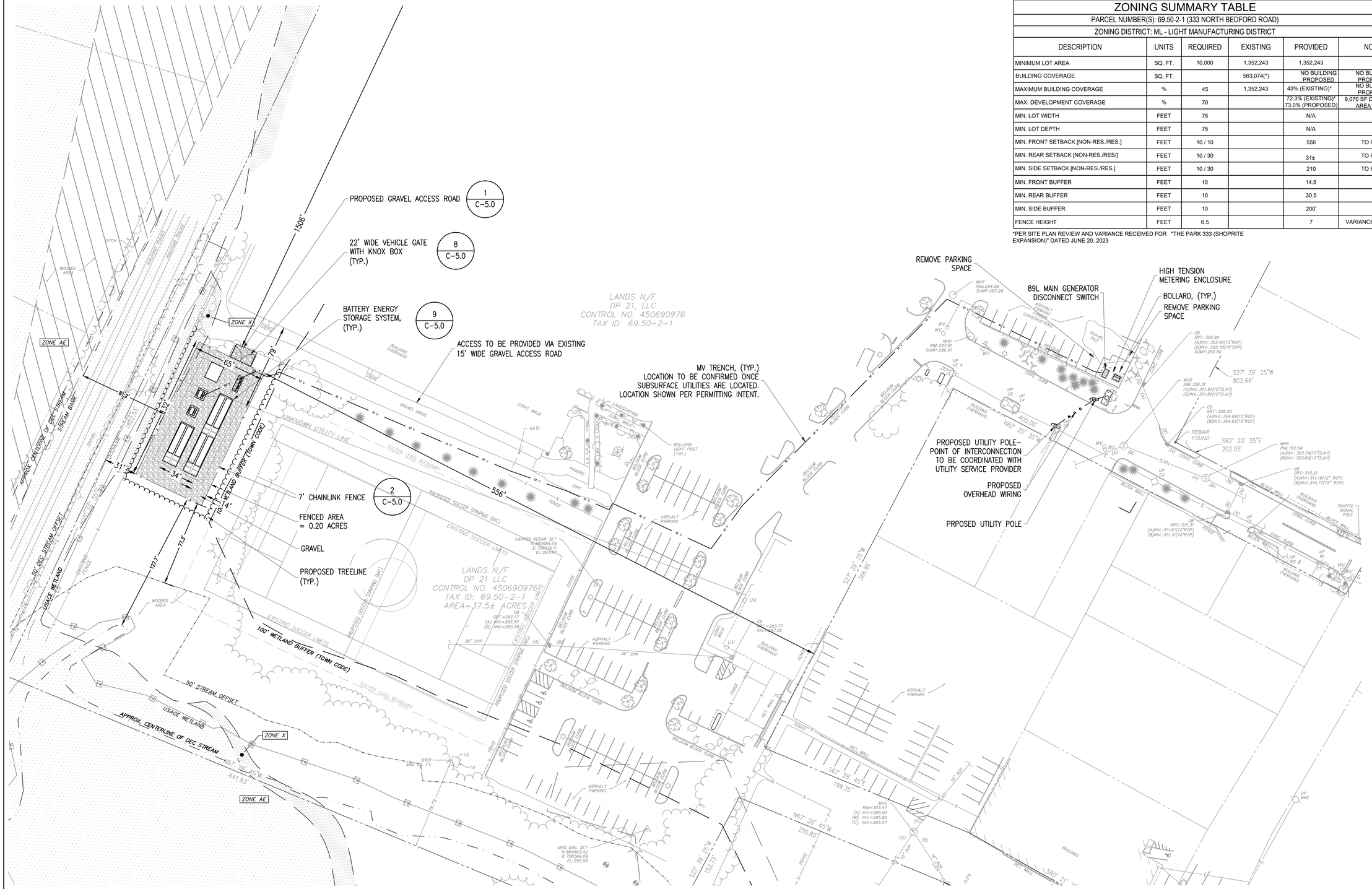
ZONING SUMMARY TABLE

PARCEL NUMBER(S): 69.50-2-1 (333 NORTH BEDFORD ROAD)

ZONING DISTRICT: ML - LIGHT MANUFACTURING DISTRICT

DESCRIPTION	UNITS	REQUIRED	EXISTING	PROVIDED	NOTES
MINIMUM LOT AREA	SQ. FT.	10,000	1,352,243	1,352,243	
BUILDING COVERAGE	SQ. FT.		563,074(*)	NO BUILDING PROPOSED	NO BUILDING PROPOSED
MAXIMUM BUILDING COVERAGE	%	45	1,352,243	43% (EXISTING)*	NO BUILDING PROPOSED
MAX. DEVELOPMENT COVERAGE	%	70		72.3% (EXISTING)* 73.0% (PROPOSED)	9,070 SF DEVELOPED AREA ADDED
MIN. LOT WIDTH	FEET	75		N/A	
MIN. LOT DEPTH	FEET	75		N/A	
MIN. FRONT SETBACK [NON-RES./RES.]	FEET	10 / 10		556	TO FENCE
MIN. REAR SETBACK [NON-RES./RES/]	FEET	10 / 30		31±	TO FENCE
MIN. SIDE SETBACK [NON-RES./RES.]	FEET	10 / 30		210	TO FENCE
MIN. FRONT BUFFER	FEET	10		14.5	
MIN. REAR BUFFER	FEET	10		30.5	
MIN. SIDE BUFFER	FEET	10		200'	
FENCE HEIGHT	FEET	6.5		7	VARIANCE REQUIRED

*PER SITE PLAN REVIEW AND VARIANCE RECEIVED FOR "THE PARK 333 (SHOPRITE EXPANSION)" DATED JUNE 20, 2023



NOTES:
1. EXISTING SUBSURFACE UTILITIES SHALL BE LOCATED PRIOR TO INSTALLATION OF MEDIUM VOLTAGE TRENCHING AND OTHER TELEMETRIC COMPONENTS.

LAYOUT AND MATERIALS PLAN

SCALE: 1" = 40'

0 40' 80'

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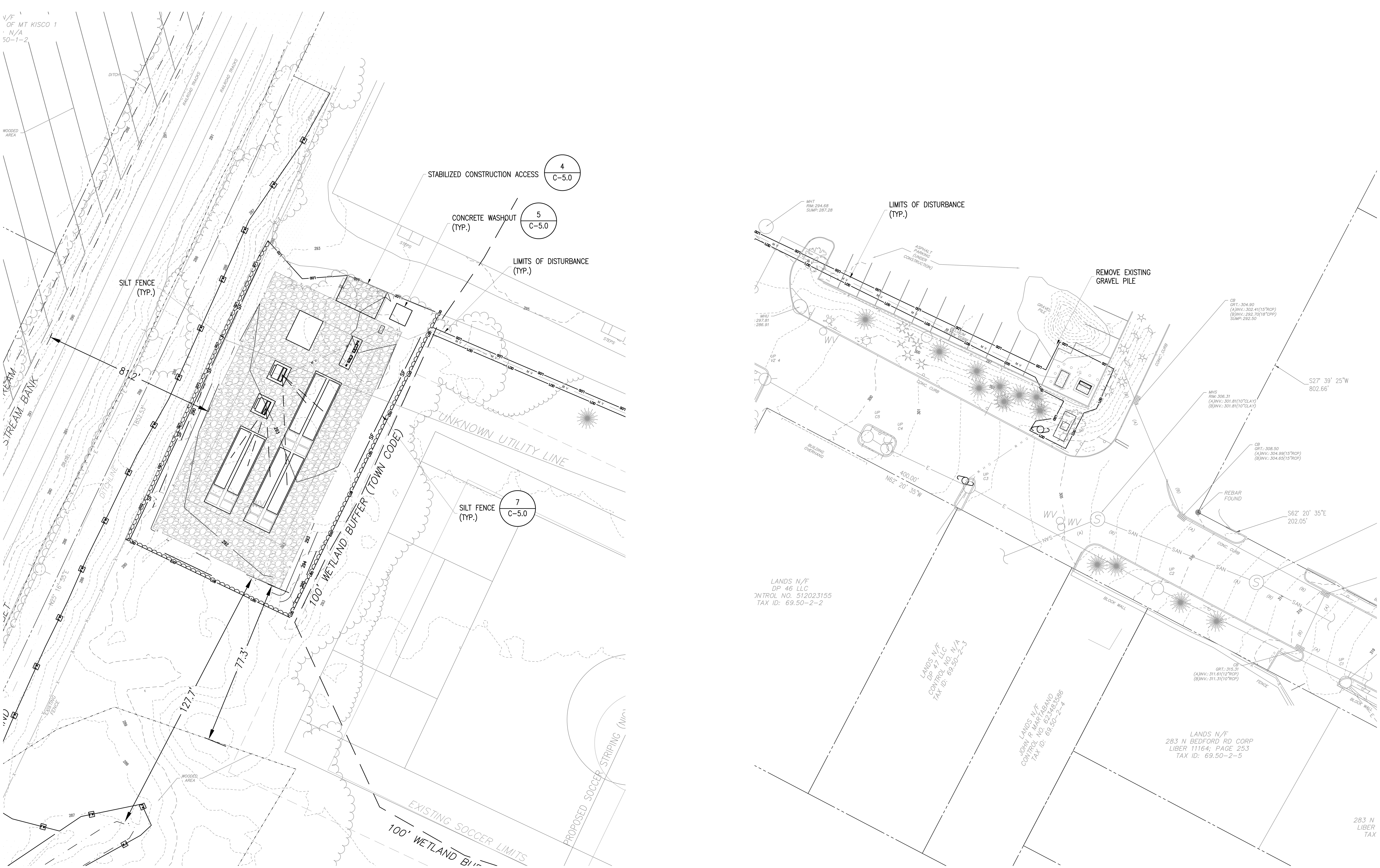
C-3.0
LAYOUT AND MATERIALS PLAN



N

GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 20'

0 20' 40'

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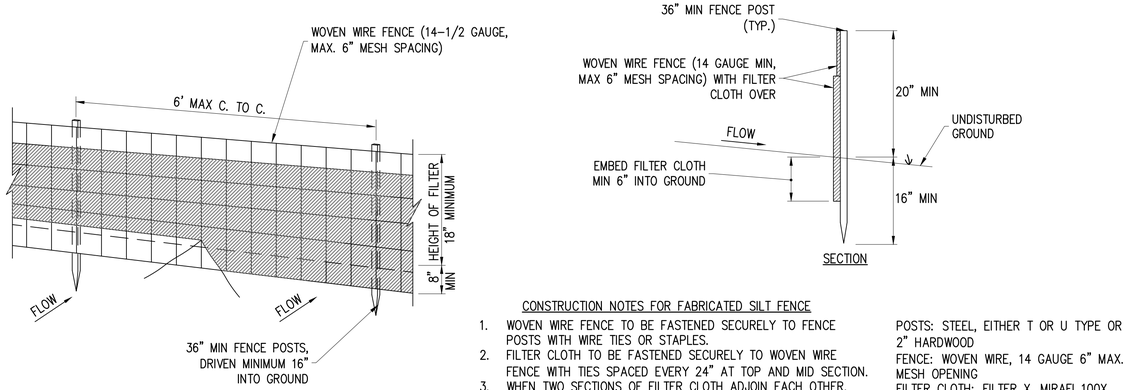
GRADING AND EROSION CONTROL PLAN



PERSPECTIVE VIEW

SECTION

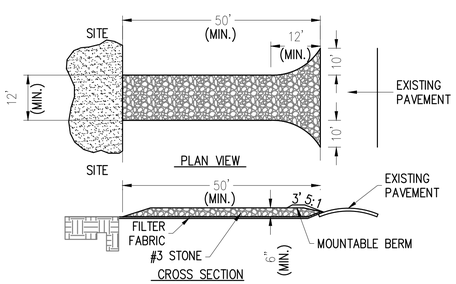
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE.

POSTS: STEEL, EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 14 GAUGE 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

7 SILT FENCE DETAIL

SCALE: NTS
XD_CIVIL_SILT-FENCE-DETAIL 03-07-2016

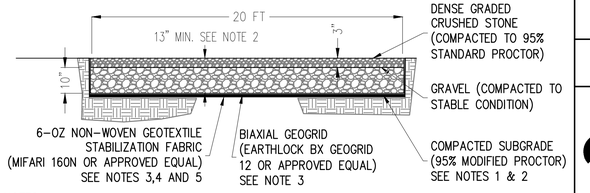


NOTES:

1. STONE SIZE – USE NYSDOT 703-0201 SIZE DESIGNATION #3 STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH– NOT LESS THAN 50 FEET.
3. THICKNESS–NOT LESS THAN 6 INCHES.
4. WIDTH–NOT LESS THAN 12 FEET WHERE MORE THAN ONE (1) ACCESS POINT TO THE SITE. WHERE ONE (1) ACCESS POINT A MINIMUM OF 24 FEET IS REQUIRED.
5. GEOTEXTILE–SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER–SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5: 1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE–THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY.
8. WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

4 STABILIZED CONSTRUCTION ACCESS

SCALE: NTS
XD_CIVIL_TEMPORARY CONSTRUCTION_STABILIZED CONSTRUCTION EXIT_NY 2019-04-02



NOTES:

1. SUBCONTRACTOR SHALL EXCAVATE TO SUITABLE MATERIAL FOR SUBGRADE.
2. SUBCONTRACTOR SHALL COMPACT SUBGRADE TO PROVIDE SUITABLE SURFACE TO PLACE ROAD. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPERATION CRITERIA.
3. SUBCONTRACTOR SHALL FOLLOW MANUFACTURER INSTALLATION PROCEDURES.
4. WHERE OVERLAPPING OF GEOTEXTILE FABRIC IS REQUIRED, SUBCONTRACTOR SHALL OVERLAP A MINIMUM OF 24".
5. SUBCONTRACTOR SHALL REMOVE TEMPORARY CONSTRUCTION ACCESS ROADS, AND RESTORE TO PRE–CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CEOR AND THE GOVERNING AGENCIES.
6. SUBCONTRACTOR SHALL INSTALL CONDUITS FOR ALL ELECTRICAL CONDUIT CROSSINGS PRIOR TO INSTALLATION OF THE GEOGRID MATERIAL. THE GEOGRID SHALL NOT BE HORIZONTALLY CUT ONCE INSTALLED.

1 GRAVEL ACCESS ROAD

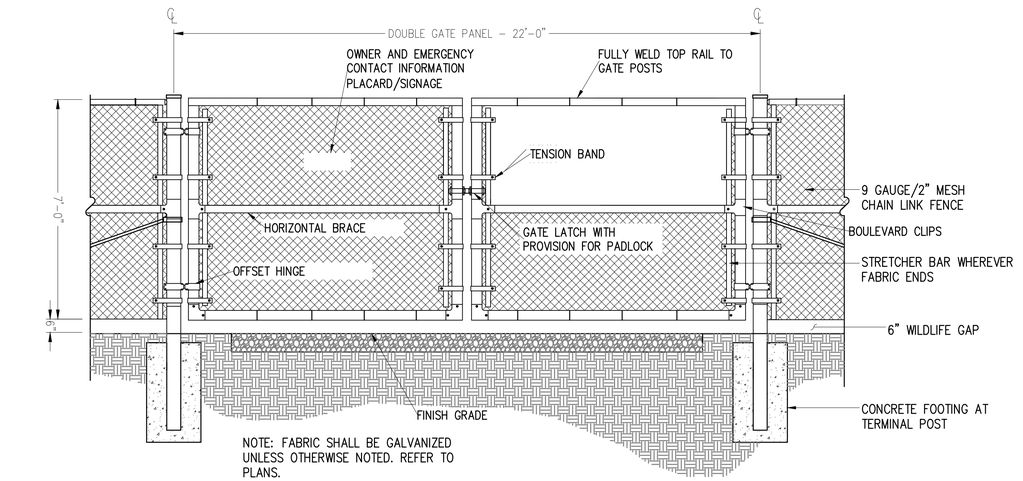
SCALE: NTS
XD_CIVIL_GRAVEL_ROAD_IL 04-30-2019

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (800) 818-5249
FAX: (888) 678-8991
WWW.NEWLEAFENERGY.COM

Creighton Manning

NOT FOR CONSTRUCTION

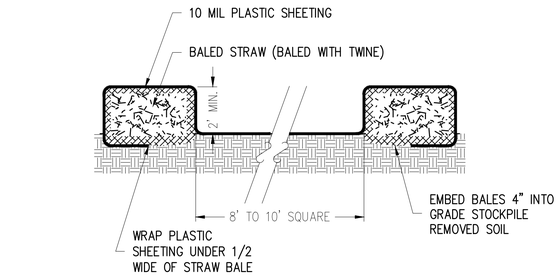
333 N. BEDFORD RD BESS
333 N. BEDFORD RD
MT. KISCO, NY, 10549



NOTE: FABRIC SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. REFER TO PLANS.

8 VEHICLE GATE WITH WILDLIFE GAP

SCALE: NTS
XD_CIVIL_FENCE_VEHICLE GATE_7' 07-02-2020

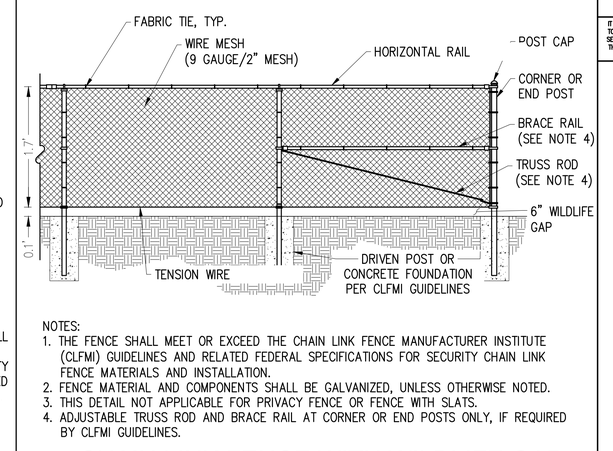


NOTES:

1. BASIN SHALL BE INSPECTED DAILY.
2 .PLASTIC SHEETING SHALL BE FREE OF TEARS OR HOLES. DAMAGED OR LEAKING BASINS SHALL BE REPLACED OR REPAIRED IMMEDIATLY.
3. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE BASIN IS FILLED. WASHWATER FROM WASHOUT BASIN SHALL EVAPORATE OR BE VACUUMED OUT. REMOVE REMAINING HARDENED SOLIDS. REPLACE PLASTIC SHEETING WITH EACH CLEANING. REPLACE STRAWBALES AS REQUIRED.
4. DISPOSE OF HARDENED MATERIAL OFF–SITE OR PER THE PROJECTS SWPPP.

5 CONCRETE WASHOUT BASINS

SCALE: NTS
XD_CIVIL_CONCRETE WASHOUT BASINS 07-26-2017

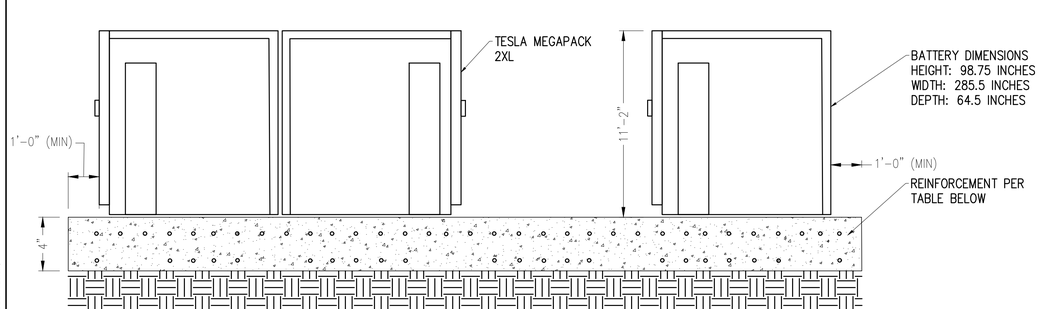


NOTES:

1. THE FENCE SHALL MEET OR EXCEED THE CHAIN LINK FENCE MANUFACTURER INSTITUTE (CLFMI) GUIDELINES AND RELATED FEDERAL SPECIFICATIONS FOR SECURITY CHAIN LINK FENCE MATERIALS AND INSTALLATION.
2. FENCE MATERIAL AND COMPONENTS SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED.
3. THIS DETAIL NOT APPLICABLE FOR PRIVACY FENCE OR FENCE WITH SLATS.
4. ADJUSTABLE TRUSS ROD AND BRACE RAIL AT CORNER OR END POSTS ONLY, IF REQUIRED BY CLFMI GUIDELINES.

2 CHAIN LINK FENCE WITH WILDLIFE GAP

SCALE: NTS
XD_CIVIL_FENCE_7'_CHAIN_LINK_WILDLIFE_GAP 07-02-2020

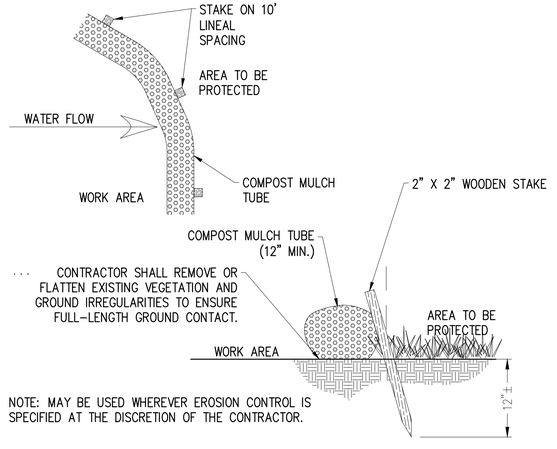


NOTES:

1. CONTRACTOR SHALL REFER TO SHEET C–0.0 AS WELL AS GEOTECH REPORT PREPARED BY GZA ON MAY 28TH, 2021 FOR ADDITIONAL FOUNDATION REQUIREMENTS.
2. STRUCTURAL SLAB SHALL BE CONFIRMED BY STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

9 EQUIPMENT PAD ELEVATION DETAIL

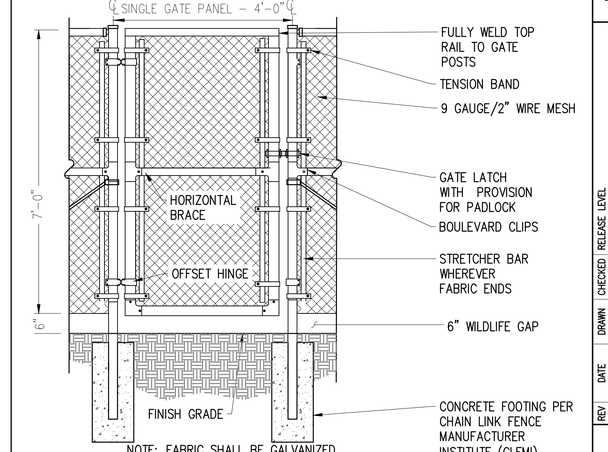
SCALE: NTS
XD_CIVIL_TYPICAL_ESU_ELEVATION



NOTE: MAY BE USED WHEREVER EROSION CONTROL IS SPECIFIED AT THE DISCRETION OF THE CONTRACTOR.

6 MULCH TUBE

SCALE: NTS



NOTE: FABRIC SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. REFER TO PLANS

3 4' ACCESS GATE WITH WILDLIFE GAP

SCALE: NTS
XD_CIVIL_SITE CONSTRUCTION_4' WALK THROUGH GATE 07-25-2017

CM PROJECT NUMBER: 123–291

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	01/26/24			ZONING BOARD OF APPEALS– SUB #1
	4/9/24			ZONING BOARD OF APPEALS– SUB #2

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-5.0
CIVIL DETAILS

LAST SAVED BY: Travis.Rosecrance
PLOT DATE: April 9, 2024 12:55 PM
FILE NAME: C:\Users\TRosecrance\Box\Civil_Bedford\SUPC-5.0 CIVIL DETAILS.dwg