

SITE USE PLANS

3901 GOMER COURT, YORKTOWN, NY 10598 5000 KW RATED / 15000 KWH ENERGY STORAGE SYSTEM

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4/14/22

SITE USE PLANS
3901 GOMER COURT, YORKTOWN, NY 10598

PROJECT NUMBER:
908-1385

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	10/13/20	TB	MS	SUP SUBMISSION
	11/12/20	TB	MS	SUP SUBMISSION
	12/07/20	TB	MS	SUP SUBMISSION
	01/21/21	TB	MS	SUP SUBMISSION
	05/12/21	TB	MS	SUP SUBMISSION
	11/09/21	TB	GG	SUP SUBMISSION
	04/14/22	DC	GG	OEM UPDATES

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED AT 11" x 17"

T-1
TITLE PAGE

GENERAL NOTES

- AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE THE EPC PROVIDER HIRED BY THE SYSTEM/PROJECT OWNER.
- WHEN THERE IS A CONFLICT BETWEEN THESE GENERAL NOTES AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
- 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.
- THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A CONSTRUCTION LEVEL DESIGN AND ASSOCIATED DRAWINGS AND DETAILS.
- COORDINATE THESE DRAWINGS WITH SPECIFICATIONS AND MANUFACTURER INSTALLATION AND OPERATION MANUALS.
- UNLESS OTHERWISE NOTED, THE DESIGN REPRESENTED ON THESE PLANS IS BASED ON THE INFORMATION AND CRITERIA LISTED IN THE "BASIS OF DESIGN" SECTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SUCH INFORMATION IN PREPARATION OF THE CONSTRUCTION DESIGN.
- 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.
- UNLESS INDICATED AS EXISTING (E), ALL PROPOSED MATERIALS AND EQUIPMENT SHALL BE CONSIDERED TO BE NEW.
- ALL EQUIPMENT AND COMPONENTS SHALL BE MOUNTED IN COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS, CONSTRUCTION DETAILS, AND/OR PRUDENT INDUSTRY STANDARDS.

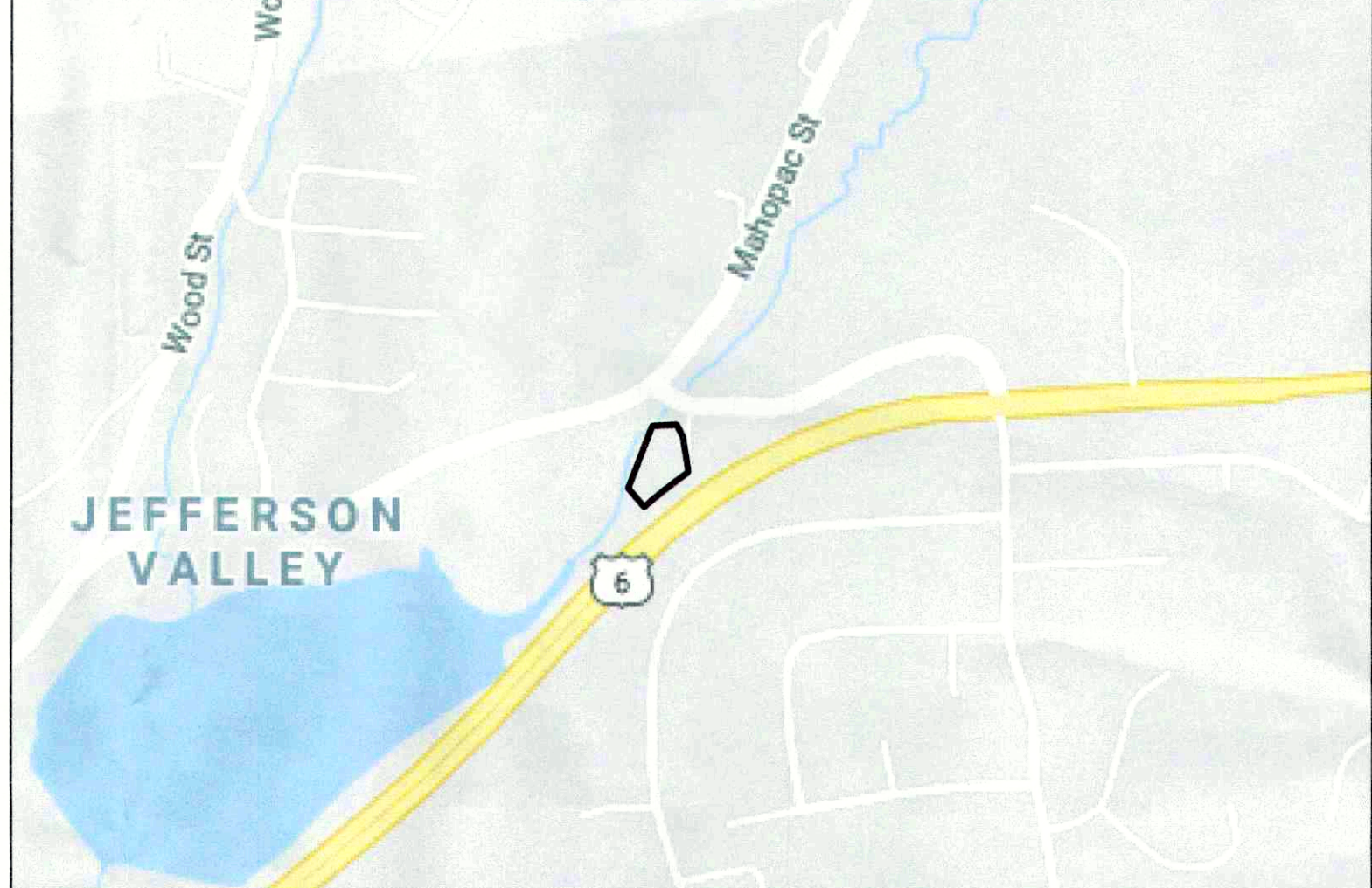
PROJECT SCOPE

THIS PROJECT CONSISTS OF THE INSTALLATION OF ENERGY STORAGE EQUIPMENT, PER THE SYSTEM DESCRIPTION, BELOW. THE LITHIUM ION ENERGY STORAGE MODULES WILL BE INSTALLED IN PURPOSE BUILT CONTAINERS (CUBES) WITH INTEGRATED BATTERY MANAGEMENT SYSTEM, HEATING, VENTILATION, AIR CONDITIONING UNIT(S), AND FIRE SUPPRESSION SYSTEMS. THE ENERGY STORAGE MODULES WILL BE WIRED IN SERIES AND CONNECTED TO THE POWER CONVERSION SYSTEM, WHICH WILL CONVERT DC TO AC WHILE THE BATTERIES ARE DISCHARGING.

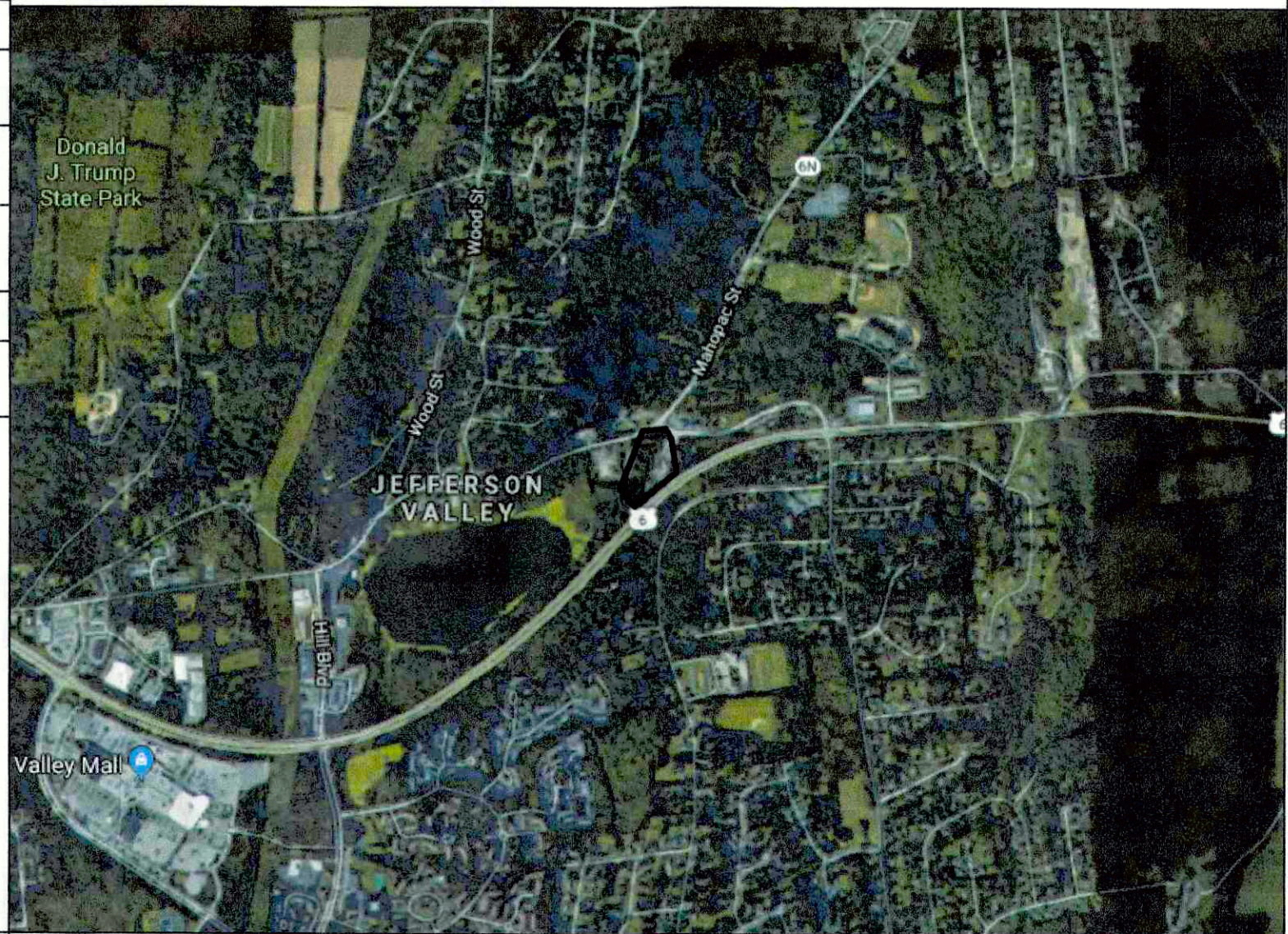
ENERGY STORAGE SYSTEM DESCRIPTION

SYSTEM POWER CAPACITY	5000 KWAC
SYSTEM ENERGY CAPACITY	15000 KWH
POWER CONVERSION SYSTEM INFORMATION	(2) POWER ELECTRONICS FREEMAQ PCSK FP3350K LIMITED TO 2500KW
TRANSFORMER CAPACITY	(2) 2500 KVA
AGGREGATE NAMEPLATE CAPACITY	5000 KW
MAXIMUM EXPORT TO UTILITY	5000 KW

LOCATION MAP



AERIAL VIEW



APPLICABLE CODES AND STANDARDS

2017 NATIONAL ELECTRICAL CODE
2020 BUILDING CODE OF NEW YORK STATE
NFPA 855 - STANDARD FOR THE INSTALLATION OF STATIONARY ENERGY STORAGE SYSTEMS
UL-1741 - INVERTERS, COMBINER BOXES
UL-1642 - STANDARD FOR LITHIUM BATTERIES
UL-1973 - STANDARD FOR BATTERIES FOR USE IN LIGHT ELECTRIC RAIL (LER) APPLICATIONS AND STATIONARY APPLICATIONS
UL-9540 - STANDARD FOR ENERGY STORAGE SYSTEM AND EQUIPMENT

PROJECT DIRECTORY

LAND OWNER / HOST GOMER PROPERTIES ASSOCIATES LTD. ANN MARIE DRING 3901 GOMER COURT YORKTOWN, NY 10598	CIVIL ENGINEER FIRM: GREENBERGFARROW CONTACT: KERI WILLIAMS PHONE: (781)-929-1651
AUTHORITY HAVING JURISDICTION TOWN OF YORKTOWN 363 UNDERHILL AVENUE YORKTOWN HEIGHTS, NY 10598	ELECTRICAL ENGINEER FIRM: BORREGO SOLAR SYSTEMS, INC. CONTACT: AHARON WRIGHT PHONE: (978)-221-3081
UTILITY CON EDISON	DESIGN ENGINEER FIRM: BORREGO SOLAR SYSTEMS, INC. CONTACT: CALEB LETOURNEAU PHONE: (978)-735-1606

GENERAL ABBREVIATIONS

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

REV 1.0

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BASIS OF DESIGN

BOUNDARY & TOPOGRAPHIC SURVEY:
LAWSON SURVEYING & MAPPING
JUNE 2020

WETLAND STREAM AND DELINEATION REPORT:
SHUMAKER CONSULTING ENGINEERING & LAND SURVEYING, D.P.C
MARCH 2019

GEOTECHNICAL REPORT:
GZA GEOENVIRONMENTAL OF NEW YORK
APRIL 2021

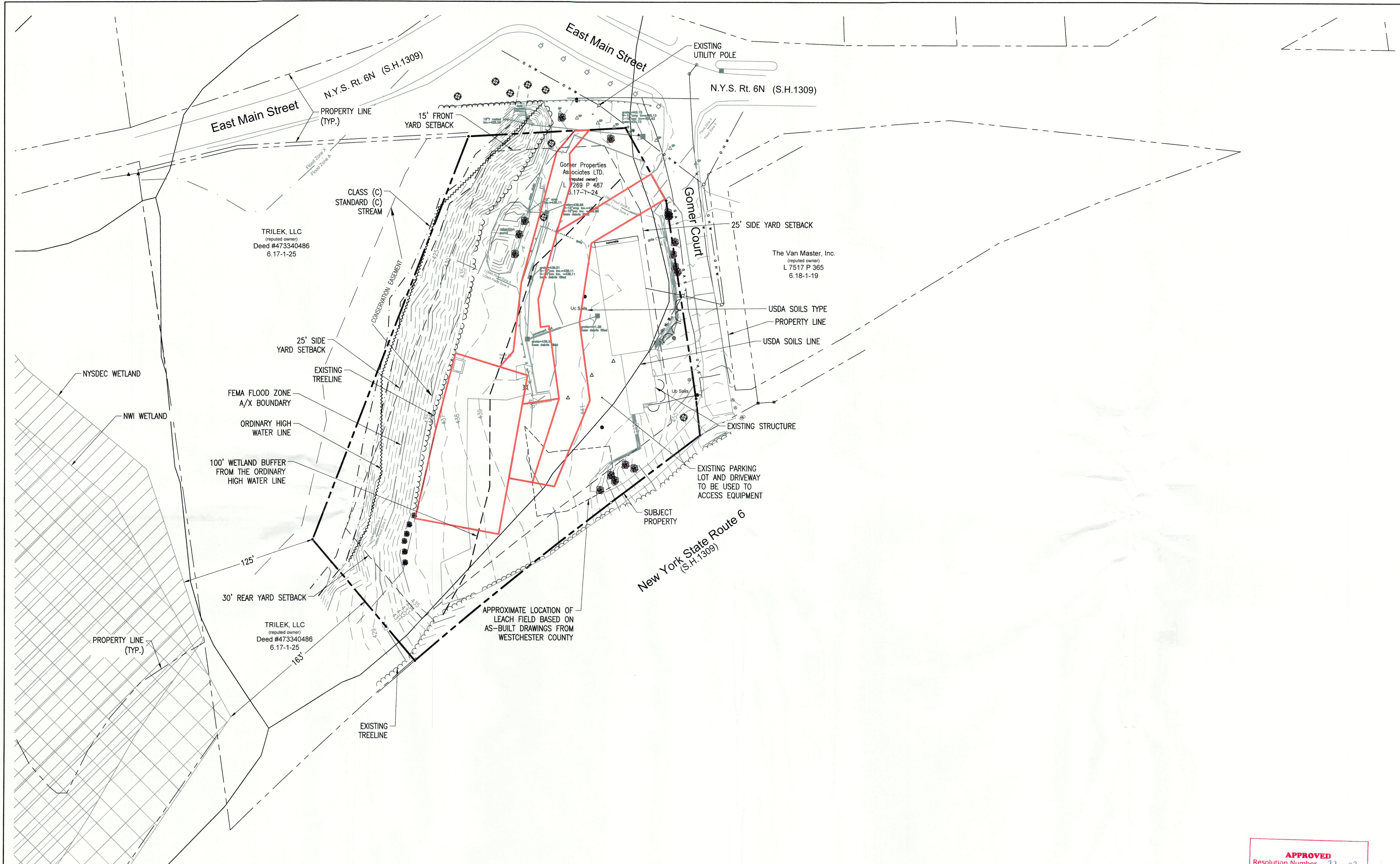
APPLICABLE BUILDING CODE:
2020 BUILDING CODE OF NEW YORK STATE

RISK CATEGORY: I

WIND CRITERIA:
EXPOSURE CATEGORY: C
WIND SPEED (V): 105 MPH
TOPOGRAPHIC FACTOR (K_{zt}): 1.0

SNOW CRITERIA:
GROUND SNOW (P_g): 30 PSF
MIN. FLAT ROOF SNOW (P_{g, min}): 0 PSF
EXPOSURE FACTOR (C_e): 1.0

SEISMIC CRITERIA
SITE CLASS: D
S_s: 0.269
S_i: 0.060
S_{ps}: 0.284
S_p: 0.096



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STATE OF NEW YORK
 GREGORY E. GIBBONS
 093840
 PROFESSIONAL ENGINEER

4/14/22

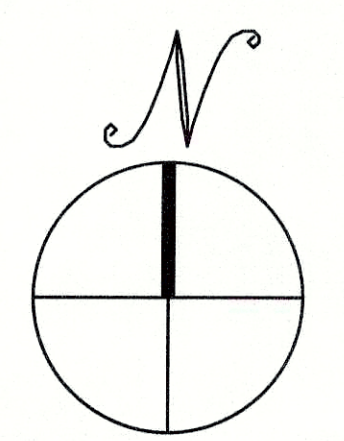
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C-1.0
 EXISTING CONDITIONS PLAN



EXISTING CONDITIONS PLAN

SCALE: 1" = 40'

APPROVED
 Resolution Number 22-02
 Date 3/10/2022

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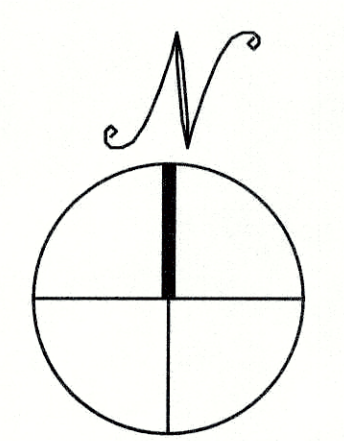
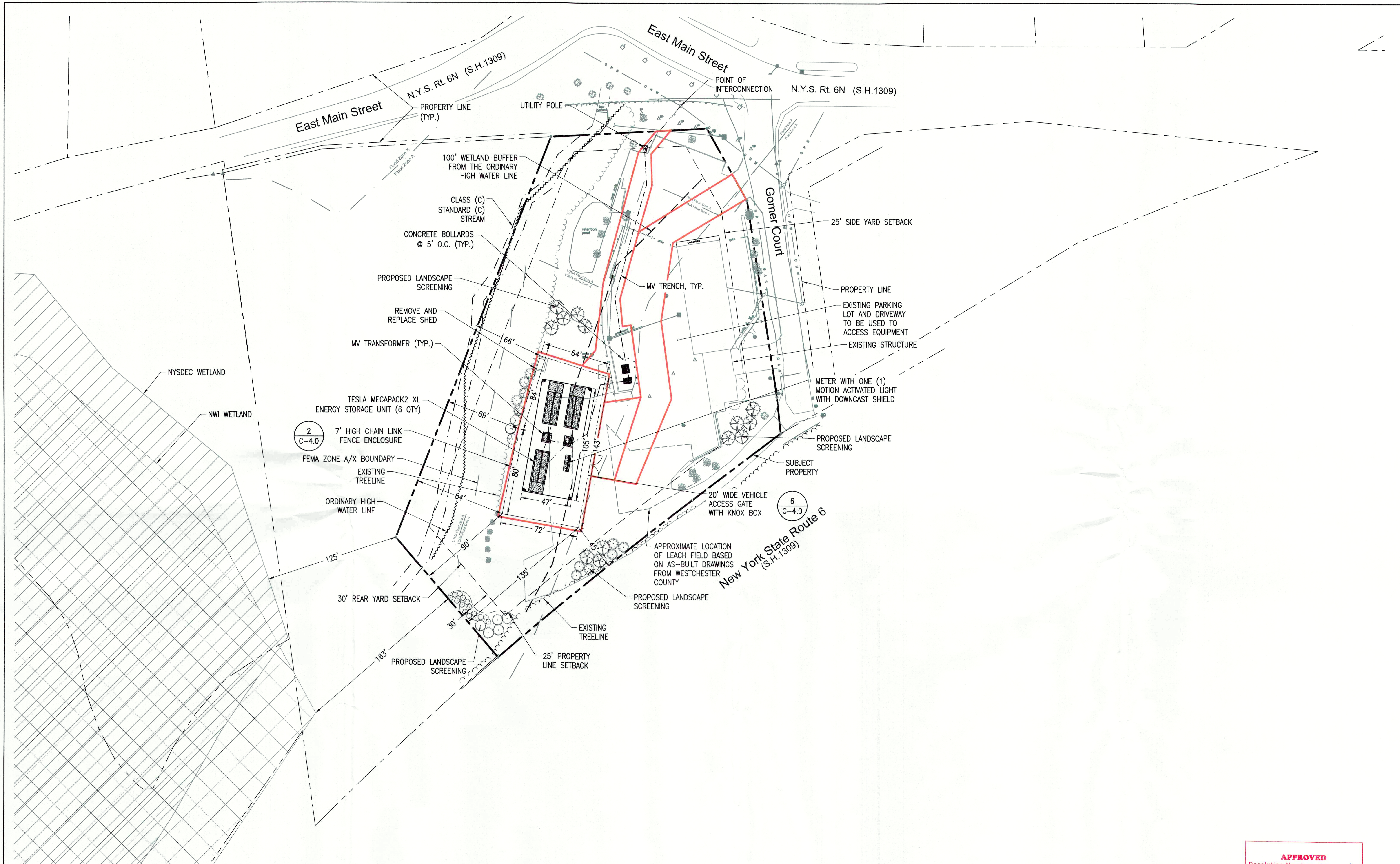
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C-2.0
LAYOUT AND MATERIALS
PLAN - MEGAPACK 2 XL



LAYOUT AND MATERIALS PLAN - MEGAPACK 2 XL

SCALE: 1" = 40'
0 40' 80'

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Resolution Number 22-02
Date 4/14/22

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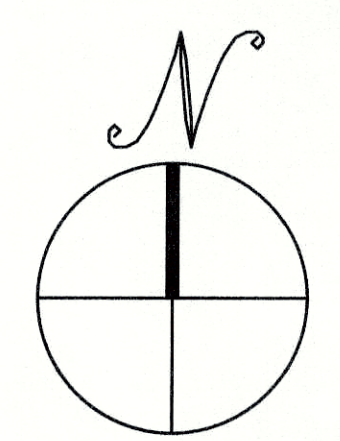
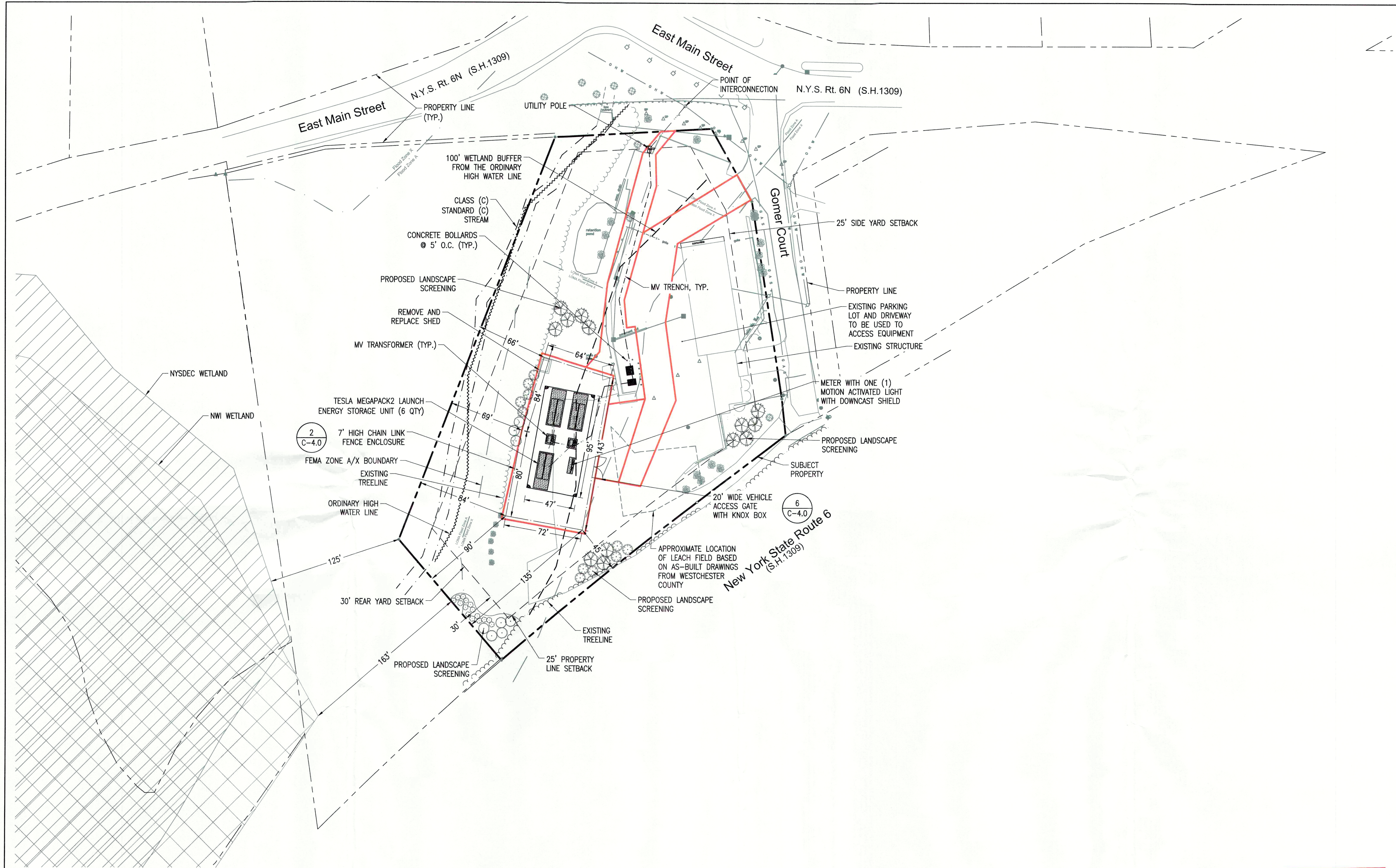
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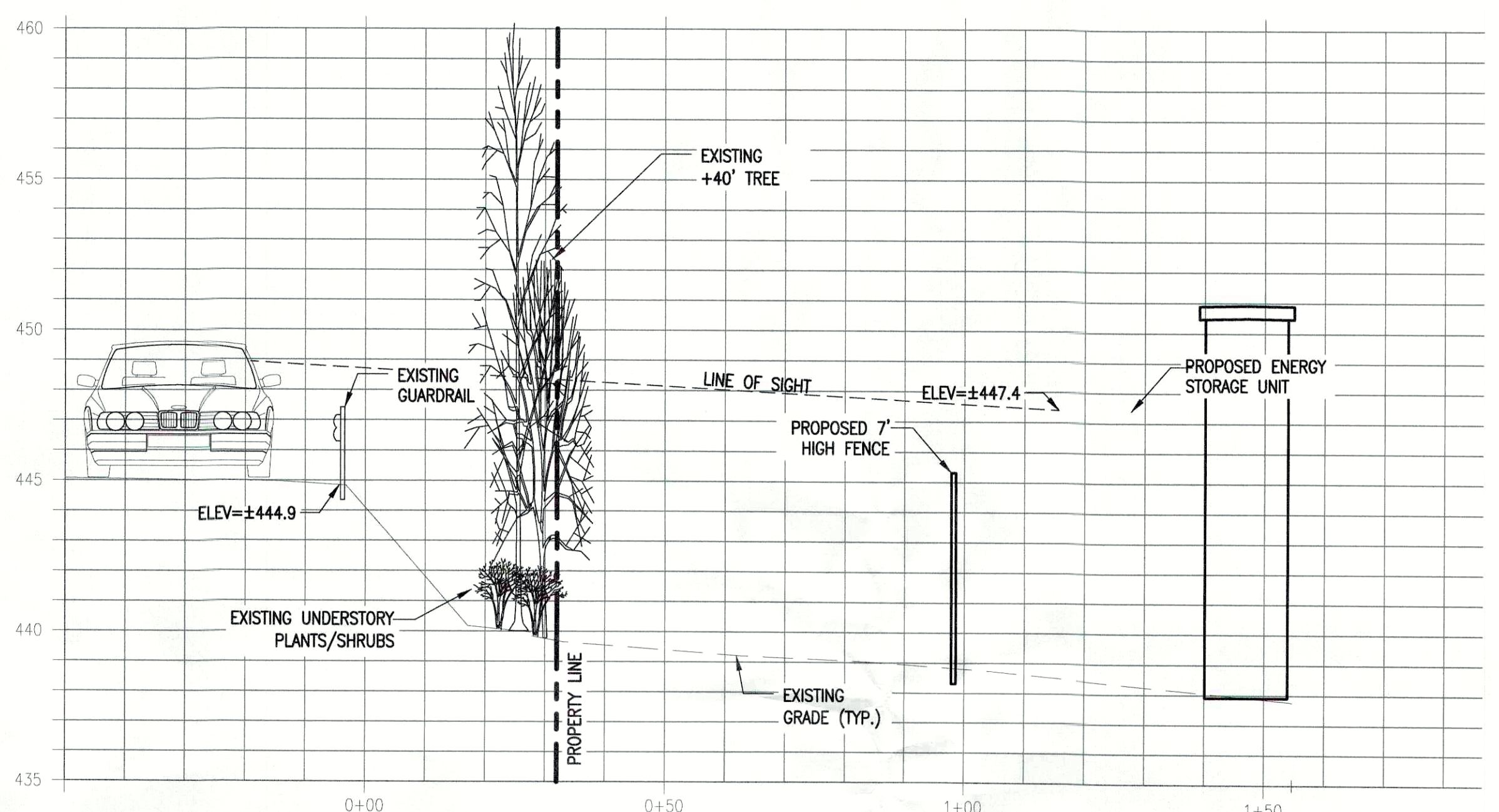
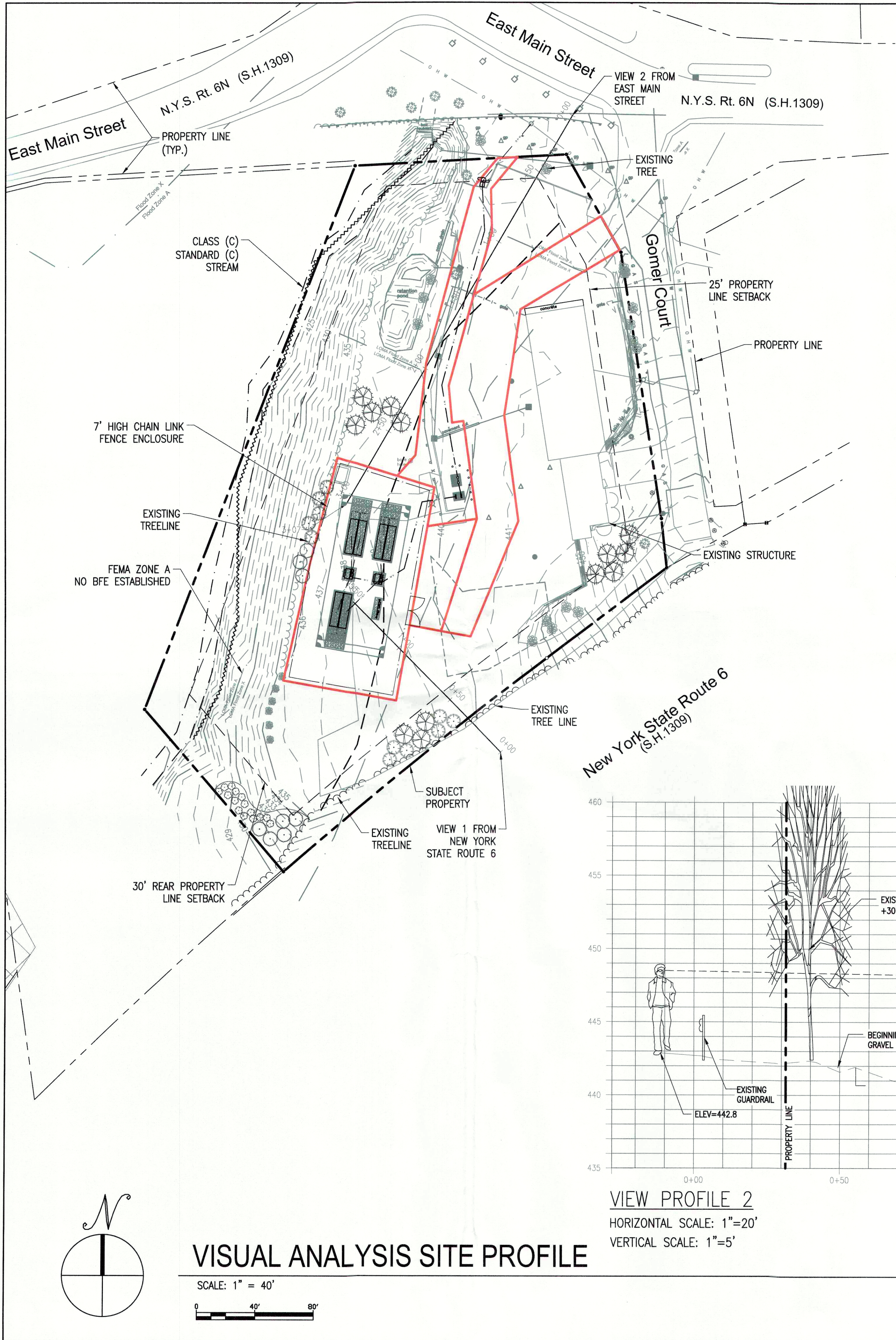


LAYOUT AND MATERIALS PLAN - MEGAPACK 2 LAUNCH

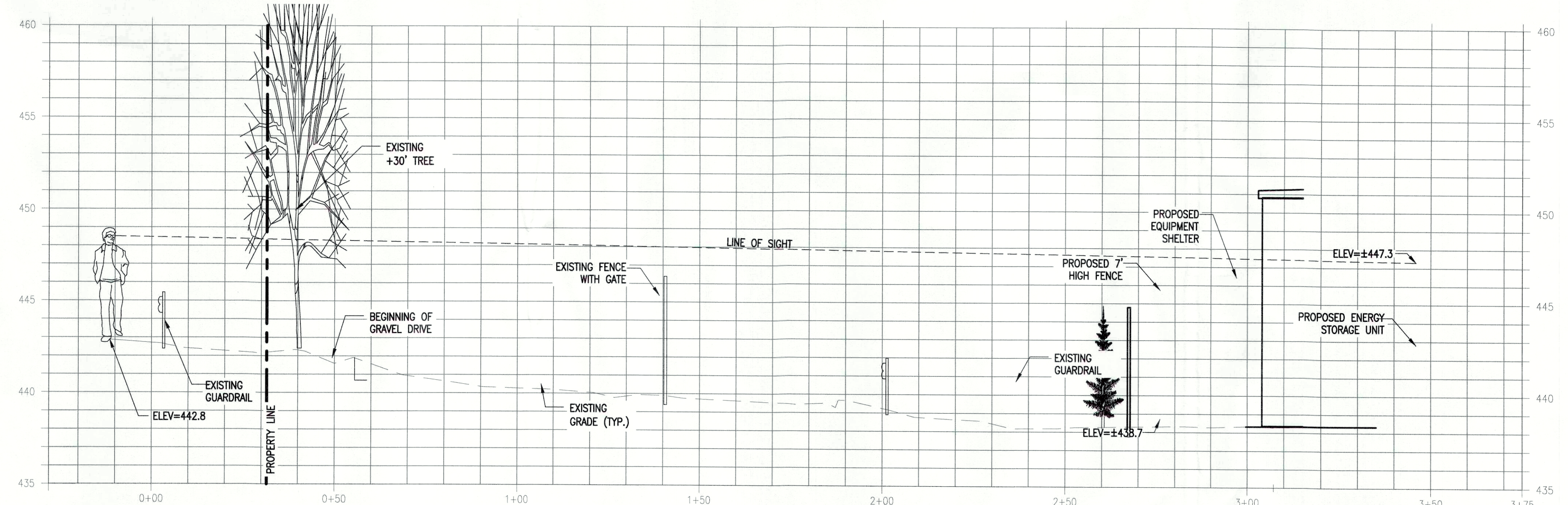
SCALE: 1" = 40'

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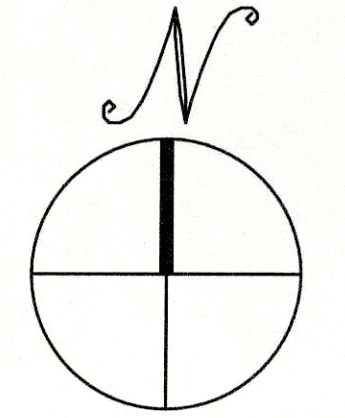
C-2.01
 LAYOUT AND MATERIALS
 PLAN - MEGAPACK 2
 LAUNCH



VIEW PROFILE 1
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=5'



VIEW PROFILE 2
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=5'



VISUAL ANALYSIS SITE PROFILE

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 0 40' 80'

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C-2.1
 VISUAL ANALYSIS SITE PROFILE



VIEW 1 PHOTO



VIEW 2 PHOTO

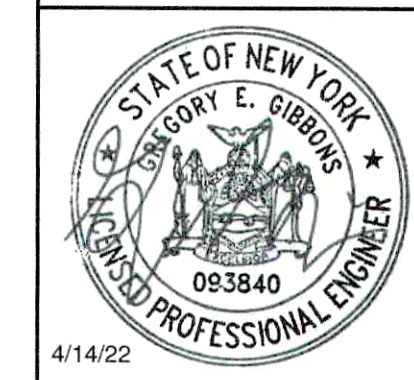
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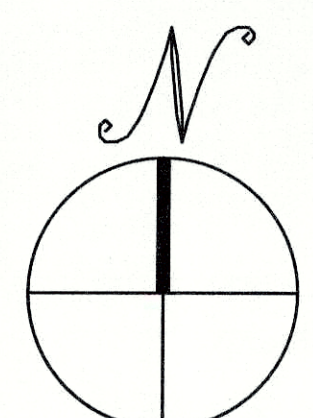
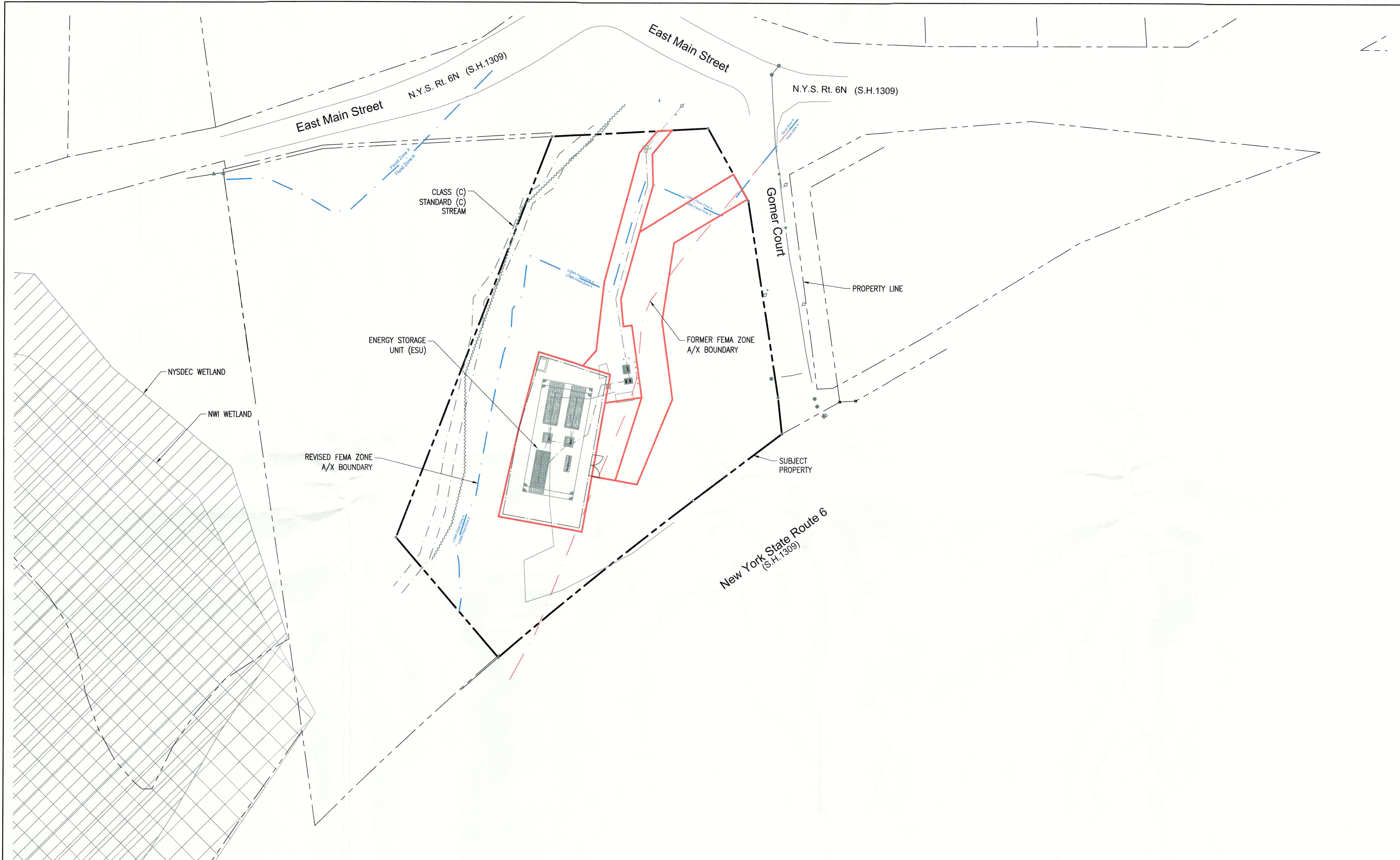
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C-2.2
 VISUAL ANALYSIS SITE PHOTOS



FEMA FLOODZONE COMPARISON

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 0 40' 80'

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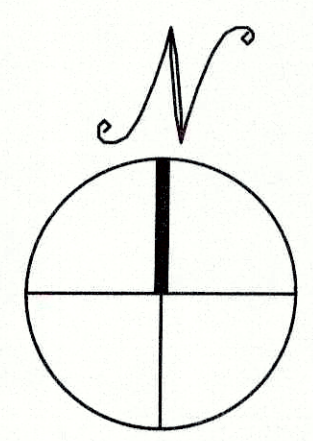
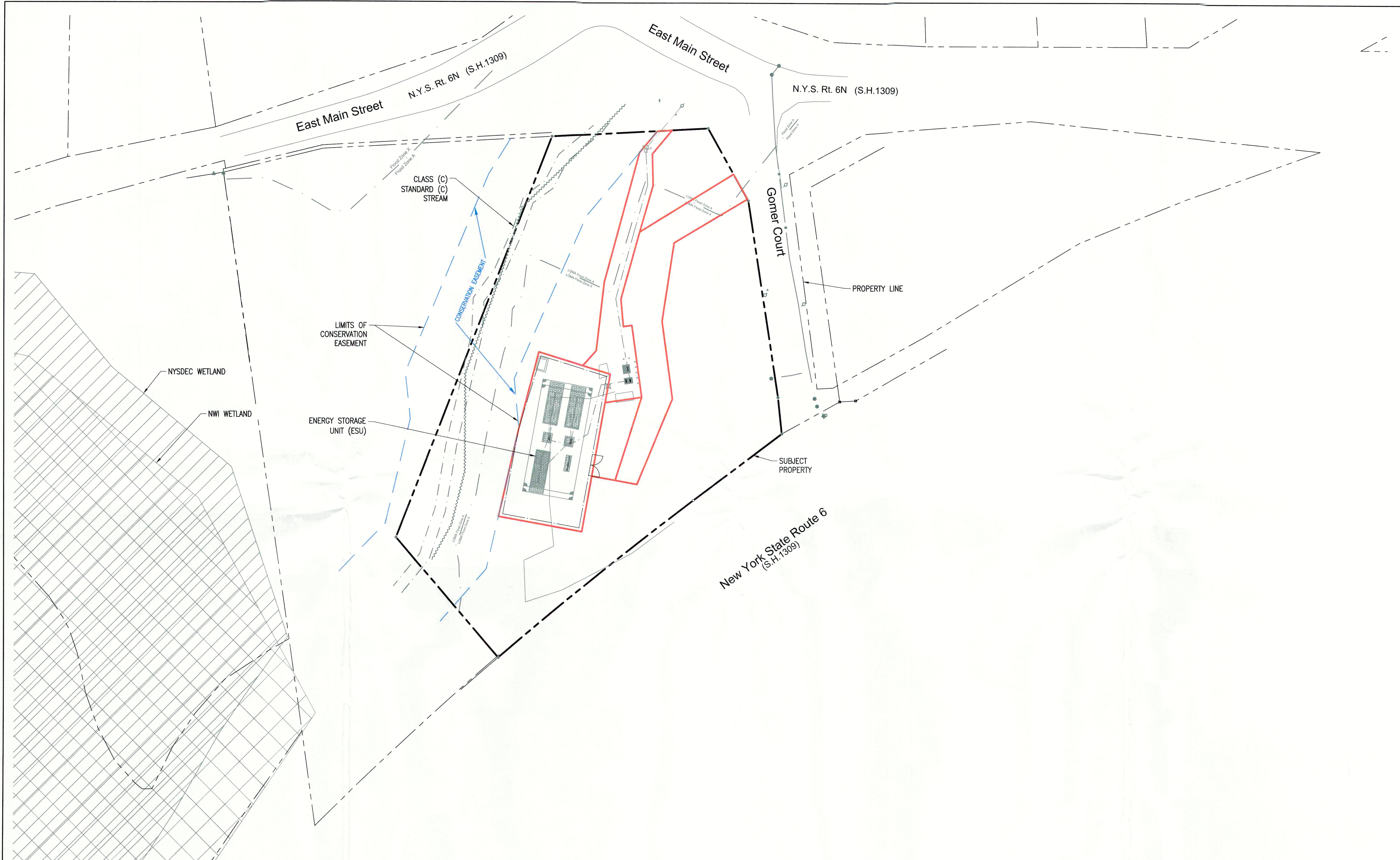
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C-2.3
 FEMA FLOODZONE COMPARISON



CONSERVATION EASEMENT

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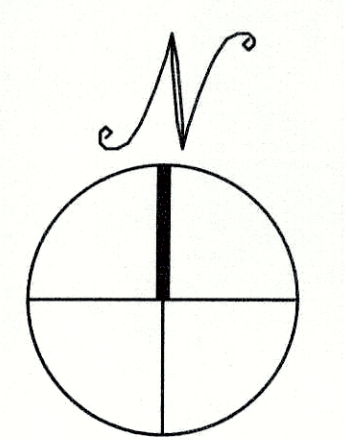
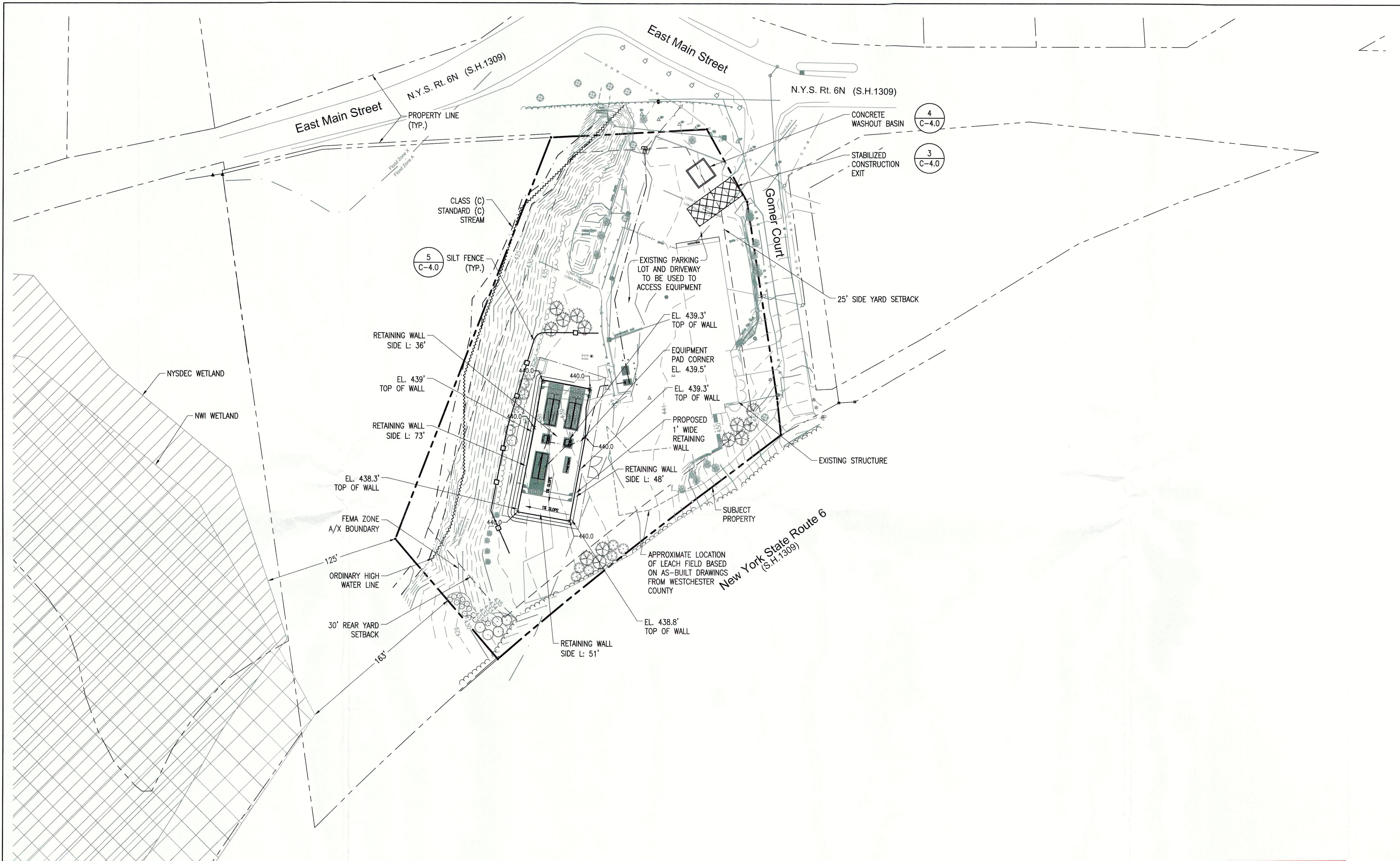
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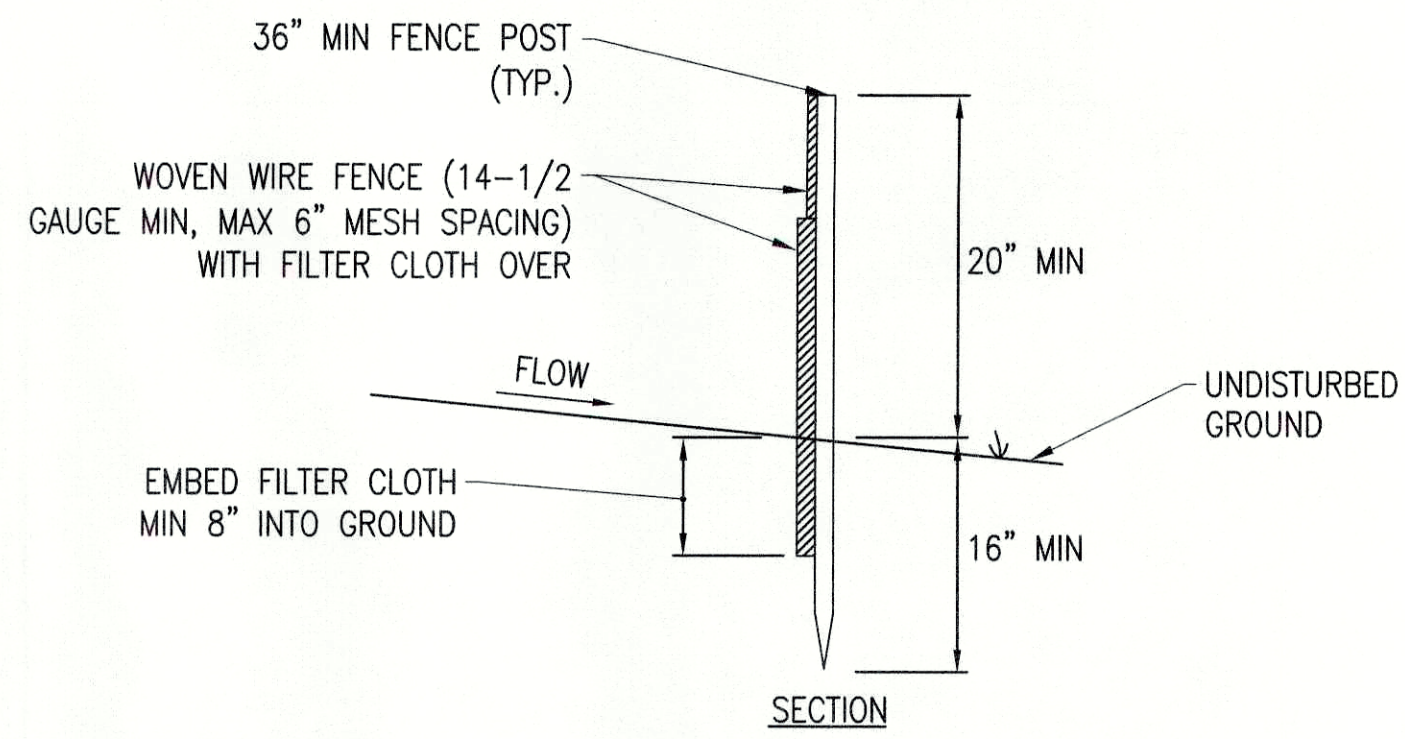
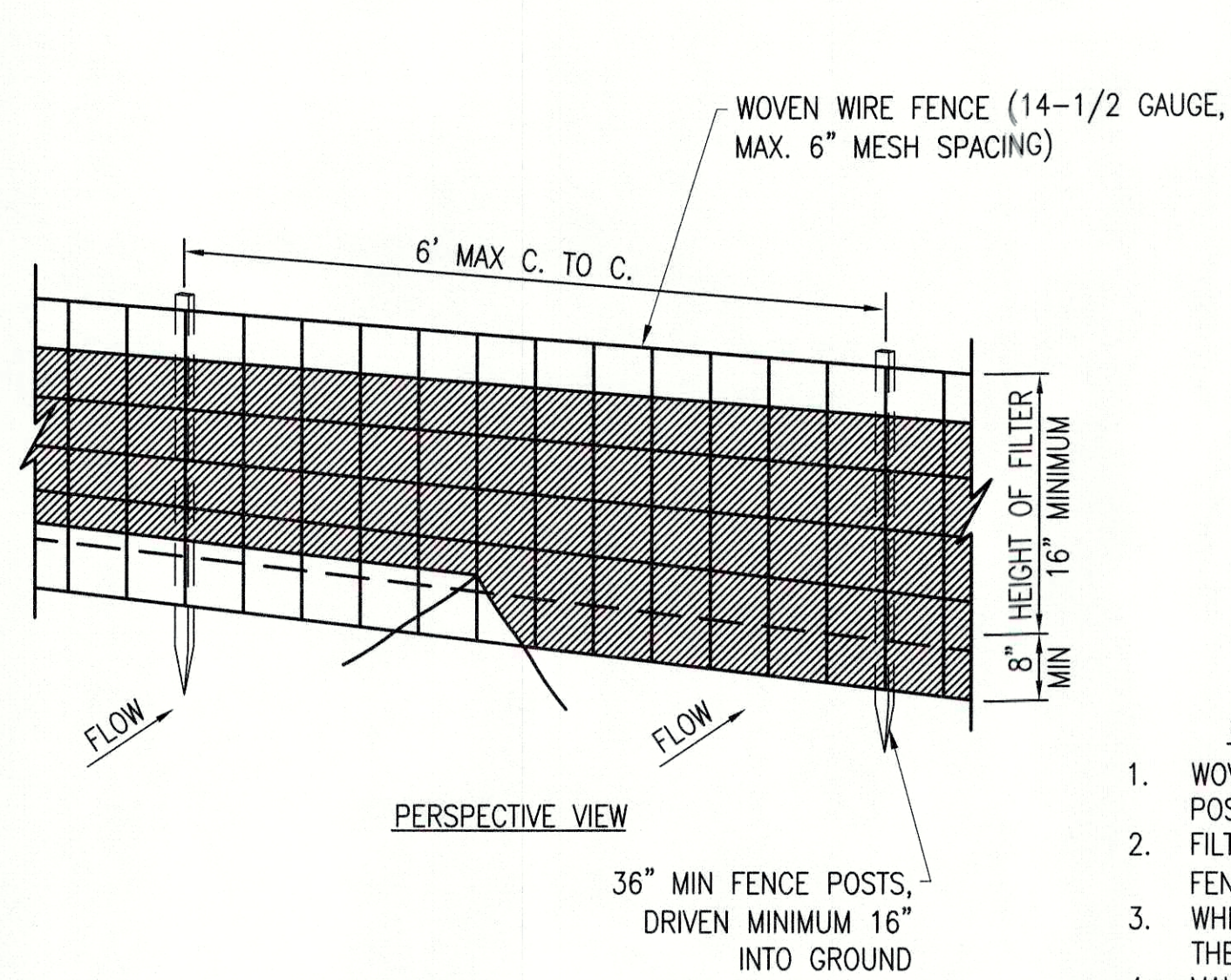
C-3.0
 GRADING AND EROSION CONTROL PLAN



GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 40'
 0 40' 80'

APPROVED
 Resolution Number 22-02
 Date 4/14/22

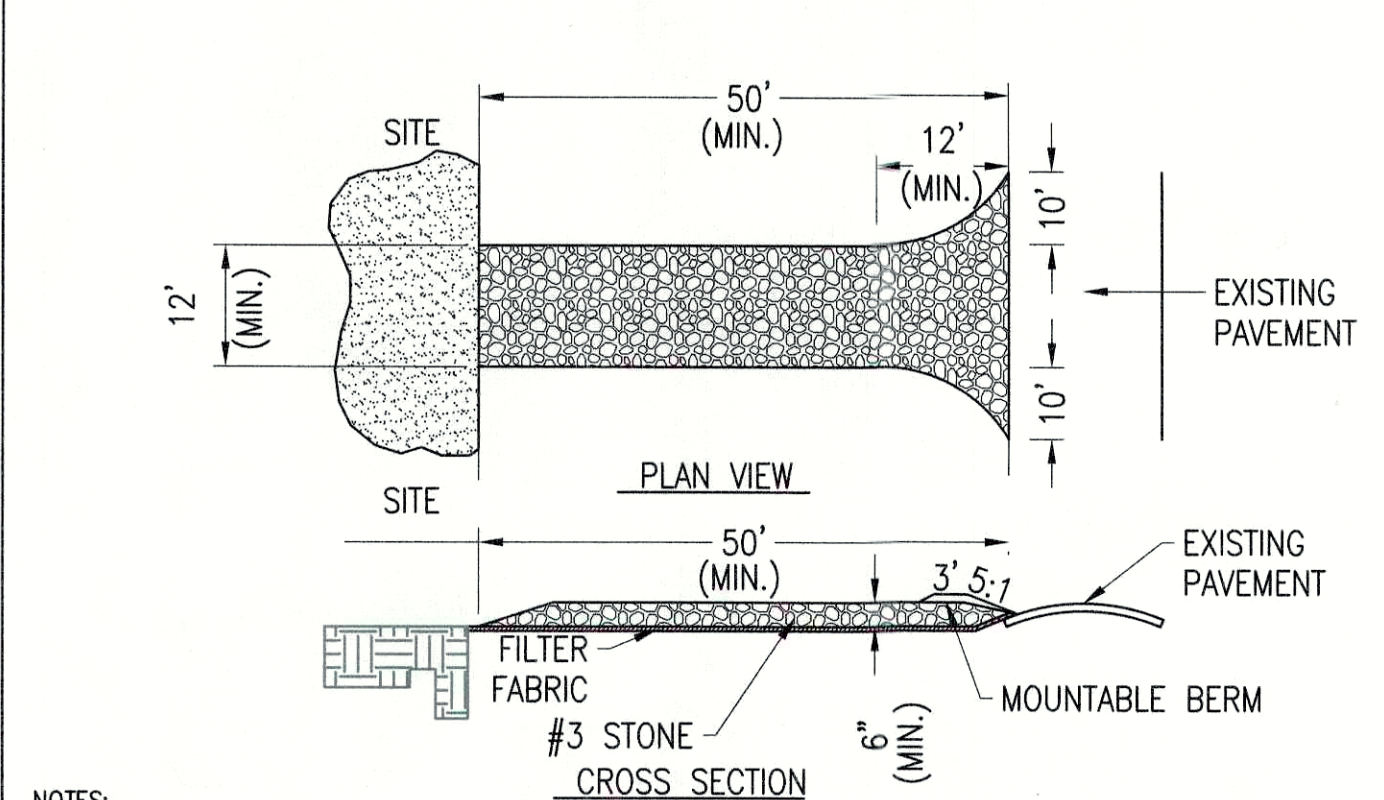


CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 - 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

5 SILT FENCE DETAIL

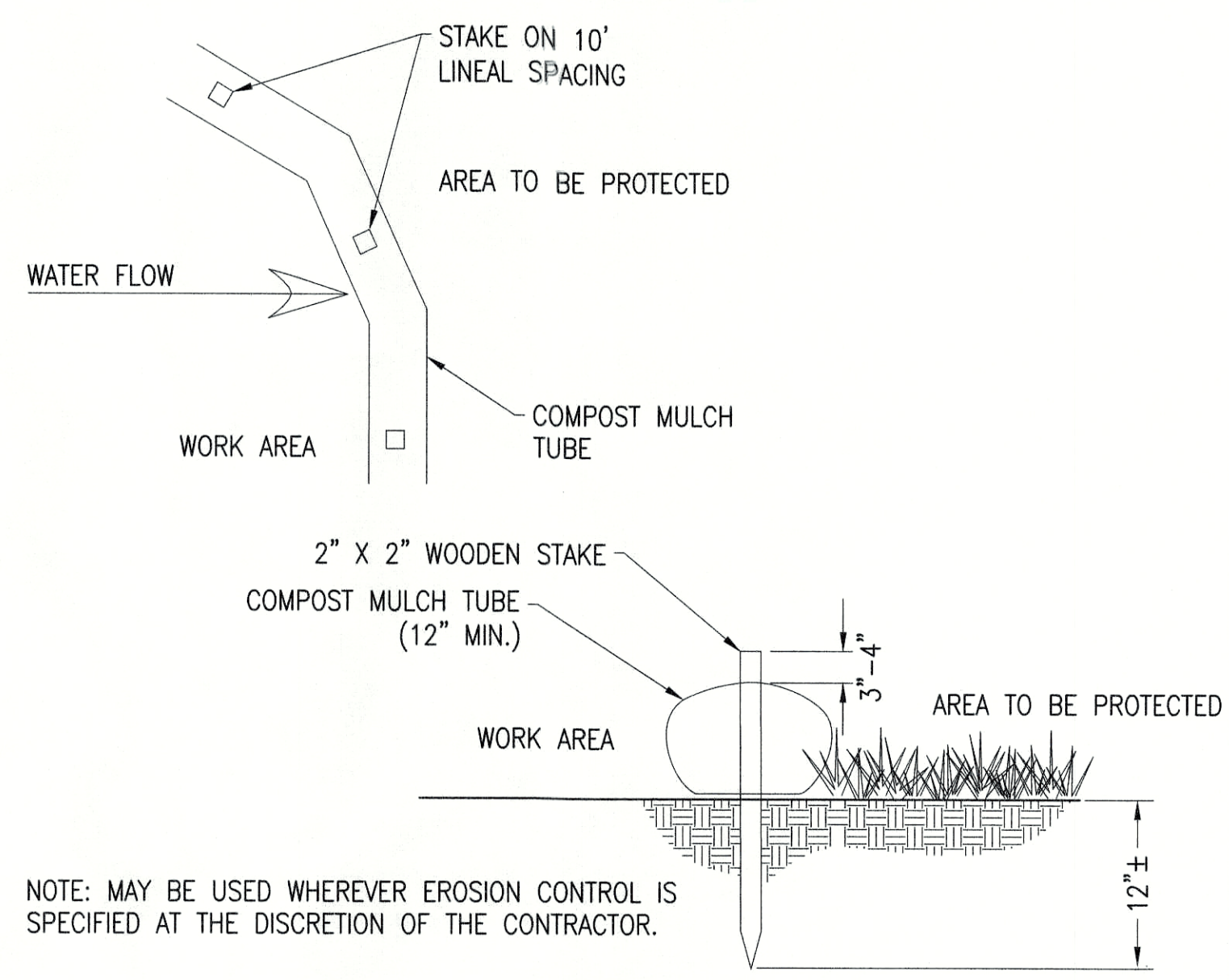
SCALE: N.T.S.
 XD_CIVIL_SILT_FENCE-DETAIL_03-07-2016



- NOTES:
- STONE SIZE - USE NYSDOT 703-0201 SIZE DESIGNATION #3 STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
 - LENGTH- NOT LESS THAN 50 FEET.
 - THICKNESS- NOT LESS THAN 6 INCHES.
 - 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.
 - GEOTEXTILE- SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
 - 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.
 - 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.
 - WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3 STABILIZED CONSTRUCTION EXIT

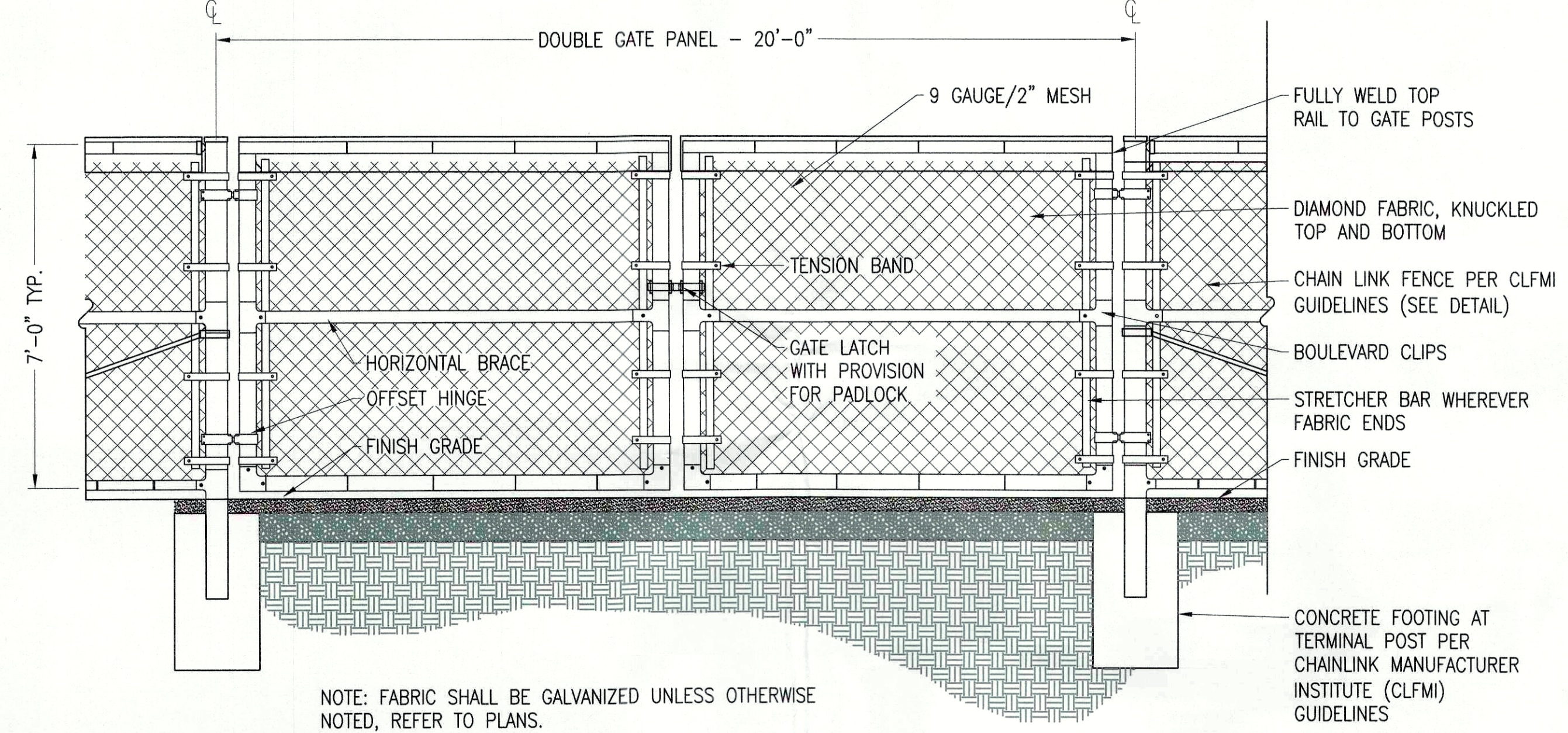
SCALE: N.T.S.
 XD_CIVIL_TEMPORARY_CONSTRUCTION_STABILIZED_CONSTRUCTION_EXIT_NY 2019-04-02



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

1 MULCH TUBE

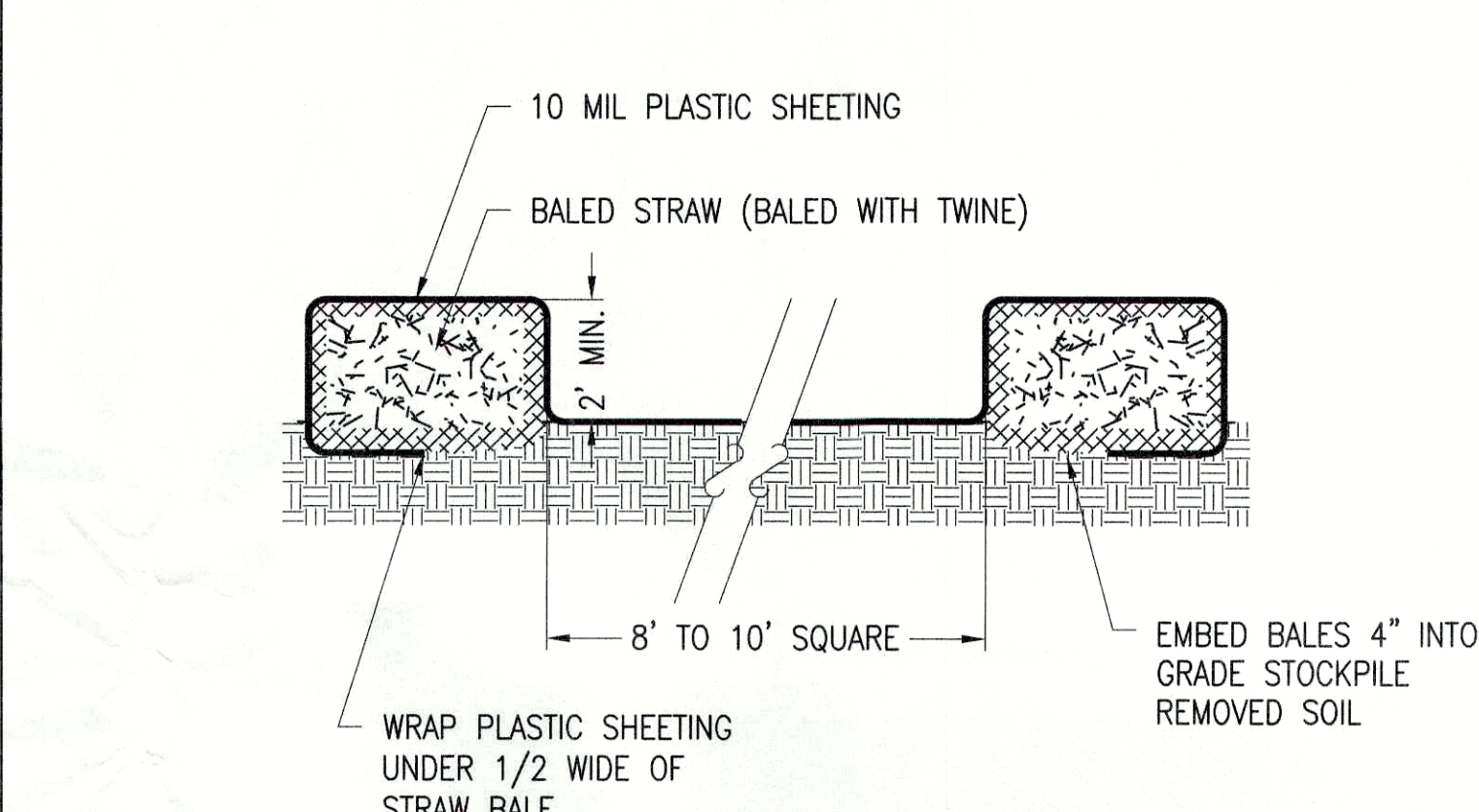
SCALE: N.T.S.
 XD_CIVIL_FILTER_TUBE_FILTER_SOCK 03-29-2016



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

6 VEHICLE GATE

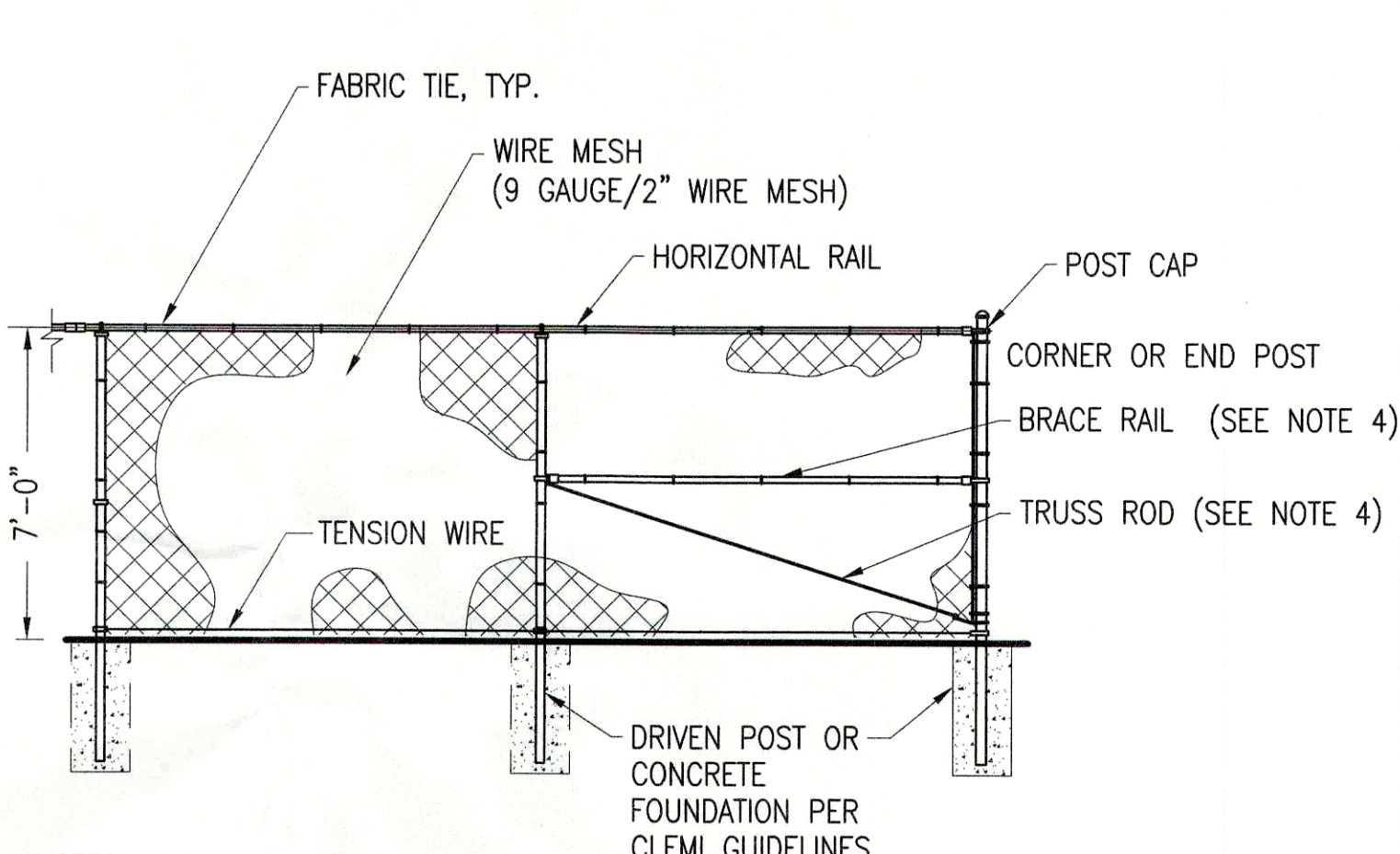
SCALE: N.T.S.
 XD_CIVIL_FENCE_VEHICLE_GATE_7' OR 8' 07-25-2017



- NOTES:
- BASIN SHALL BE INSPECTED DAILY.
 - PLASTIC SHEETING SHALL BE FREE OF TEARS OR HOLES. DAMAGED OR LEAKING BASINS SHALL BE REPLACED OR REPAIRED IMMEDIATELY.
 - 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.
 - DISPOSE OF HARDENED MATERIAL OFF-SITE OR PER THE PROJECTS SWPPP.

4 CONCRETE WASHOUT BASINS

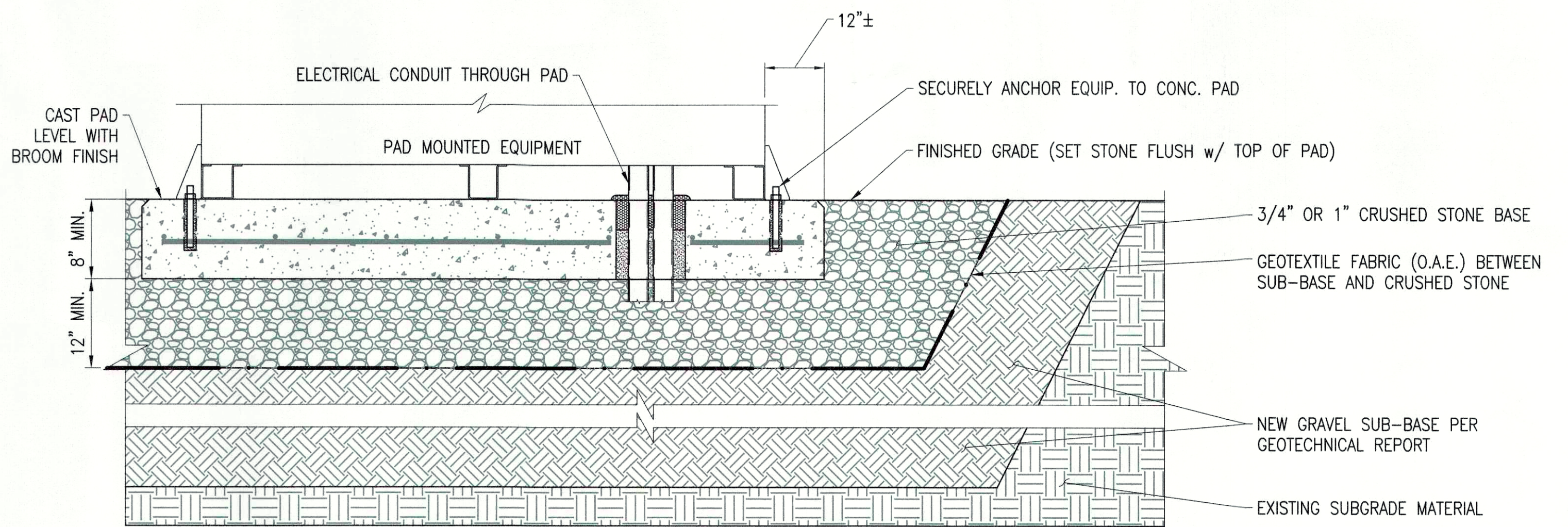
SCALE: N.T.S.
 XD_CIVIL_CONCRETE_WASHOUT_BASINS 07-26-2017



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

2 CHAIN LINK FENCE

SCALE: N.T.S.
 XD_CIVIL_FENCE_7'_CHAIN_LINK 06-10-2016

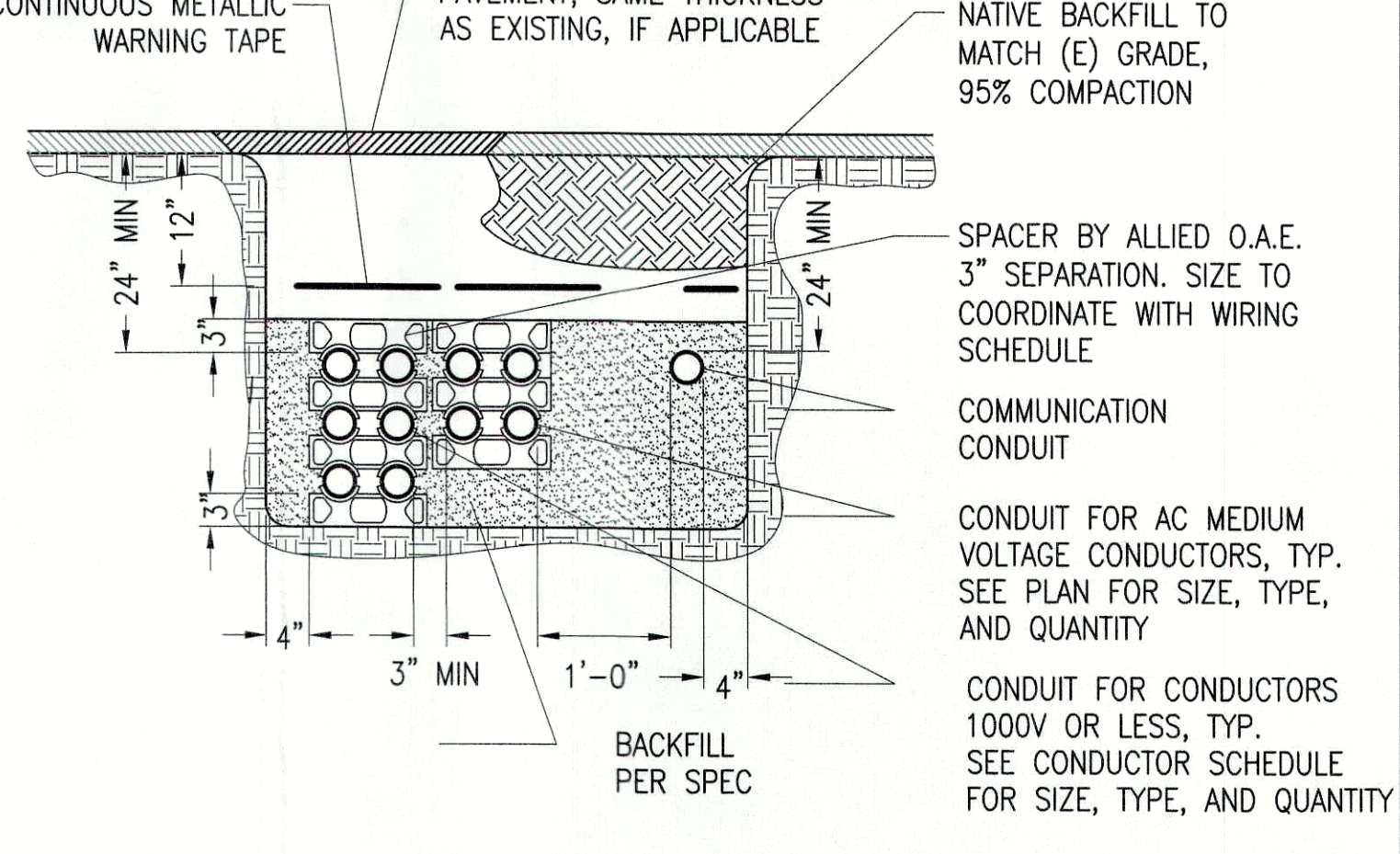


NOTE:
 1. CONTRACTOR SHALL REFER TO SHEET C-0.0 AS WELL AS GEOTECH REPORT PREPARED BY GZA ON APRIL 5TH, 2021 FOR ADDITIONAL FOUNDATION REQUIREMENTS

APPROVED
 Resolution Number 22-02
 Date 1/10/22

8 CONCRETE EQUIPMENT PAD - SECTION

SCALE: N.T.S.
 XD_CIVIL_EQUIPMENT_PAD 2018-08-06



- NOTES:
- MAINTAIN A MINIMUM DISTANCE OF 1' BETWEEN CONDUIT WITH COMMUNICATION WIRING AND ANY CONDUIT WITH ELECTRIC POWER CONDUCTORS. POWER AND DATA CONDUITS MAY CROSS AND THE 1' MIN. MAY BE REDUCED FOR TRENCH SECTIONS LESS THAN 10' OR NEAR EQUIPMENT STUB-UPS.
 - BACKFILL IN ACCORDANCE WITH ELECTRICAL SPECIFICATION SECTION 312000.

7 TYPICAL TRENCH

SCALE: N.T.S.
 XD_ELEC_TYPICAL_TRENCH 2016-10-17

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GreenbergFarrow
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NOT FOR CONSTRUCTION

STATE OF NEW YORK
 SEABY E. GIBBONS
 LICENSED PROFESSIONAL ENGINEER
 093840
 4/14/22

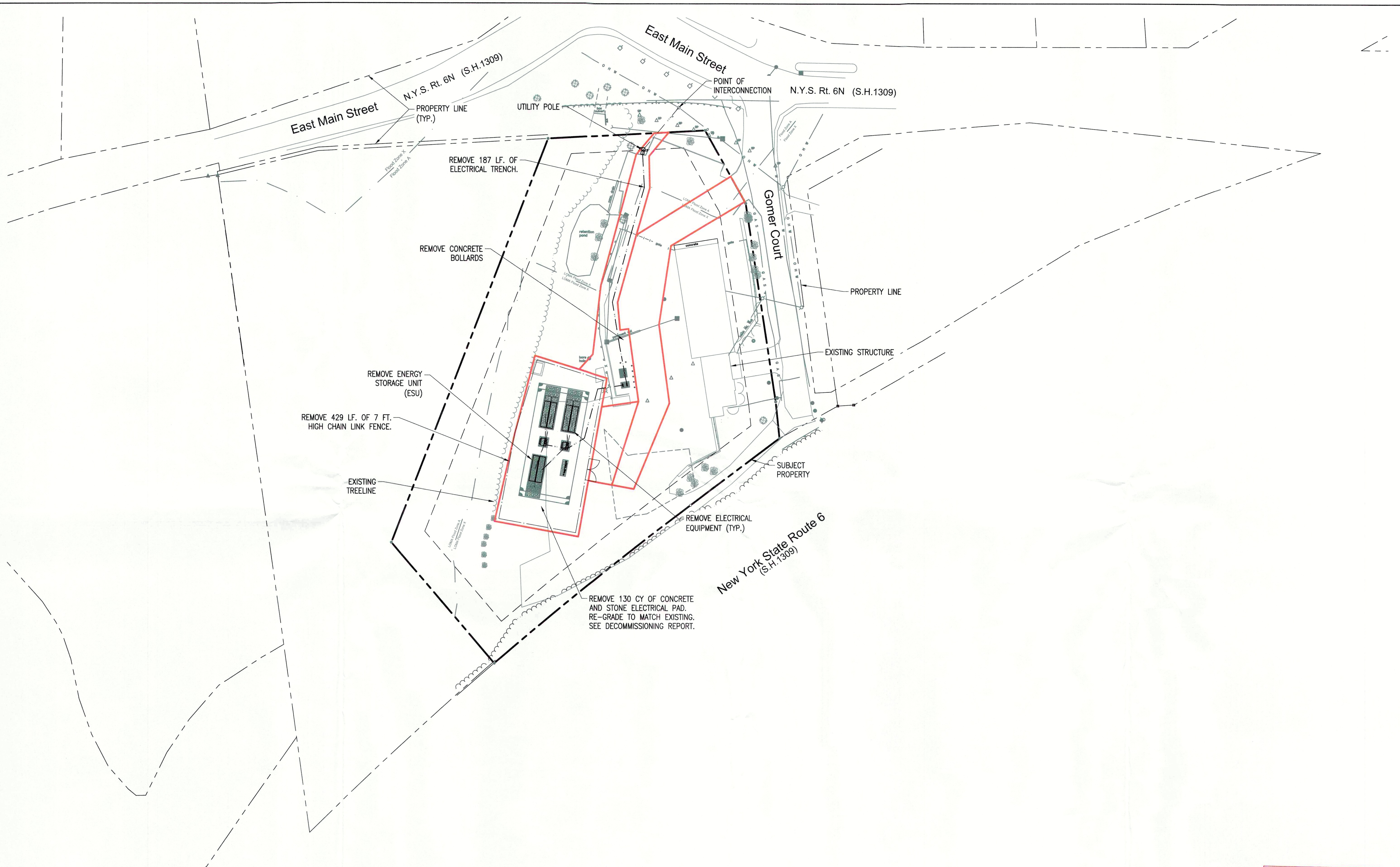
SITE USE PLANS
 3901 GOMER COURT, YORKTOWN, NY 10598

PROJECT NUMBER: 908-1385

DATE	REV	DESCRIPTION	CHECKED	DATE	DATE	DATE	DATE	DATE	DATE
10/13/20	TB	MS SUP SUBMISSION	MS	10/13/20	TB	MS SUP SUBMISSION	MS	11/12/20	TB
11/12/20	TB	MS SUP SUBMISSION	MS	12/07/20	TB	MS SUP SUBMISSION	MS	01/21/21	TB
05/12/21	TB	MS SUP SUBMISSION	MS	05/12/21	TB	MS SUP SUBMISSION	MS	11/09/21	TB
04/14/22	DC	GG SUP UPDATES	GG						

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

C-4.0
 CIVIL DETAILS



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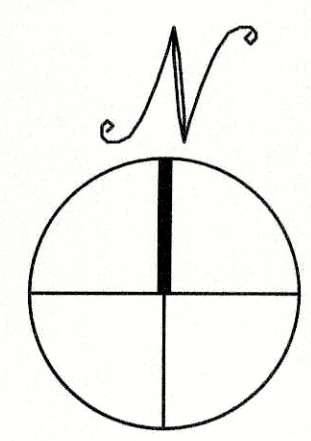
4/14/22

SITE USE PLANS
 3901 GOMER COURT, YORKTOWN, NY 10598

PROJECT NUMBER:
 908-1385

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
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	01/21/21	TB	MS	SUP SUBMISSION
	05/12/21	TB	MS	SUP SUBMISSION
	11/09/21	TB	GG	SUP SUBMISSION
	04/14/22	DC	GG	OEM UPDATES

APPROVED
 Resolution Number 22-02
 Date 4/10/22

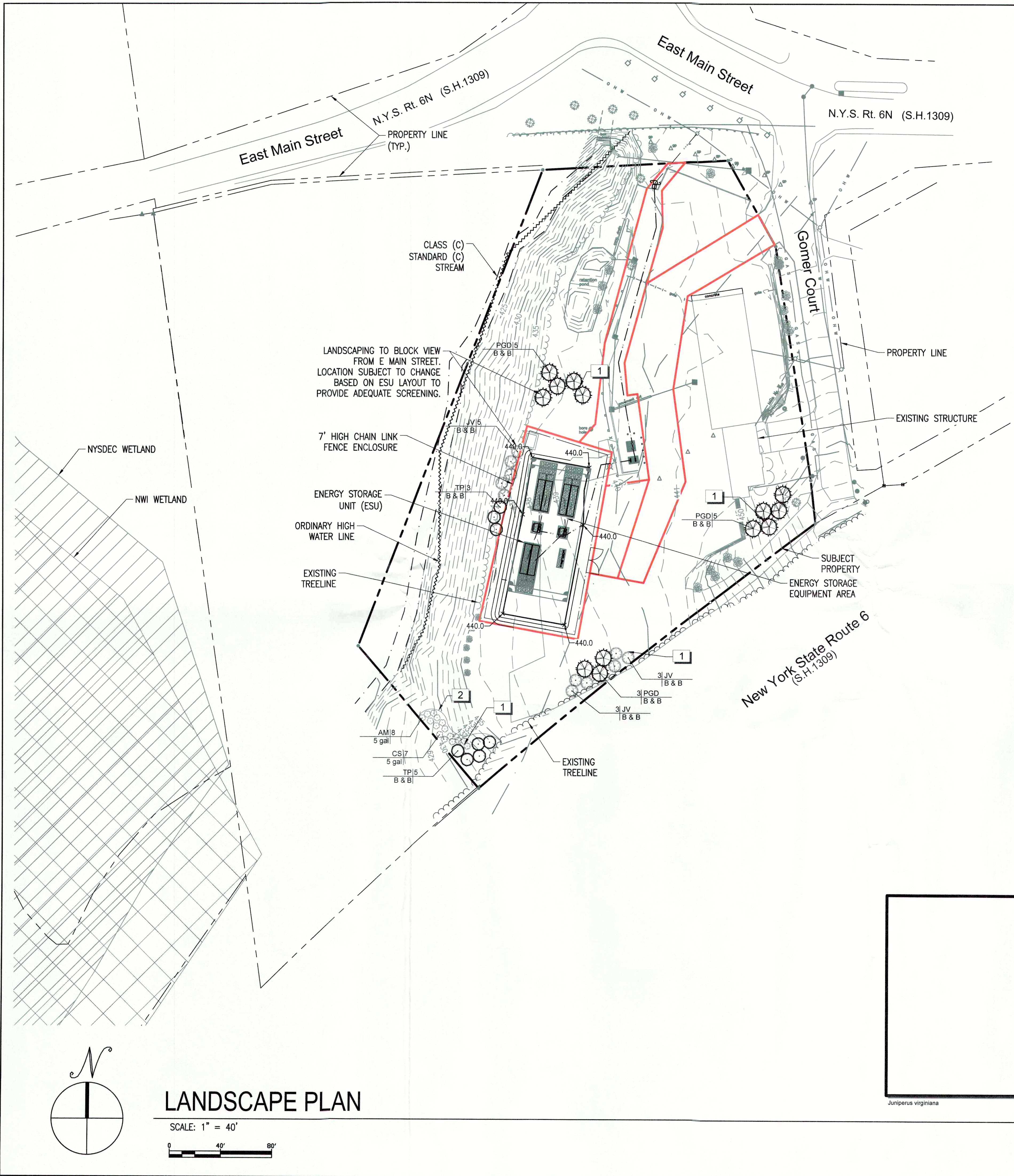


DECOMMISSIONING PLAN

SCALE: 1" = 40'

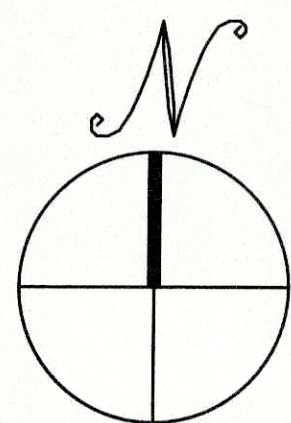
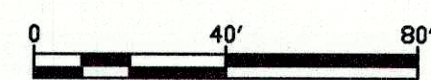
SCALE STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-5.0
 DECOMMISSIONING PLAN



LANDSCAPE PLAN

SCALE: 1" = 40'

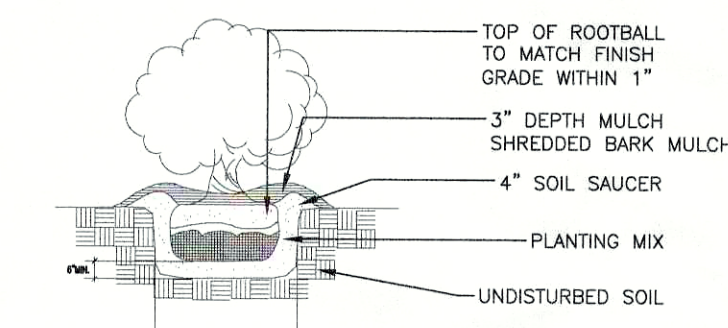


PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	
	JV	11	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	B & B	8' HT. MIN.	
	PGD	13	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	B & B	8' HT. MIN.	
	TP	8	THUJA PLICATA	WESTERN RED CEDAR	B & B	8' HT. MIN.	
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	SPACING
	AM	8	ARONIA MELANOCARPA ELATA	GLOSSY BLACK CHOKEBERRY	5 GAL		60" o.c.
	CS	7	CORNUS SERICEA	RED TWIG DOGWOOD	5 GAL		60" o.c.

REFERENCE NOTES SCHEDULE

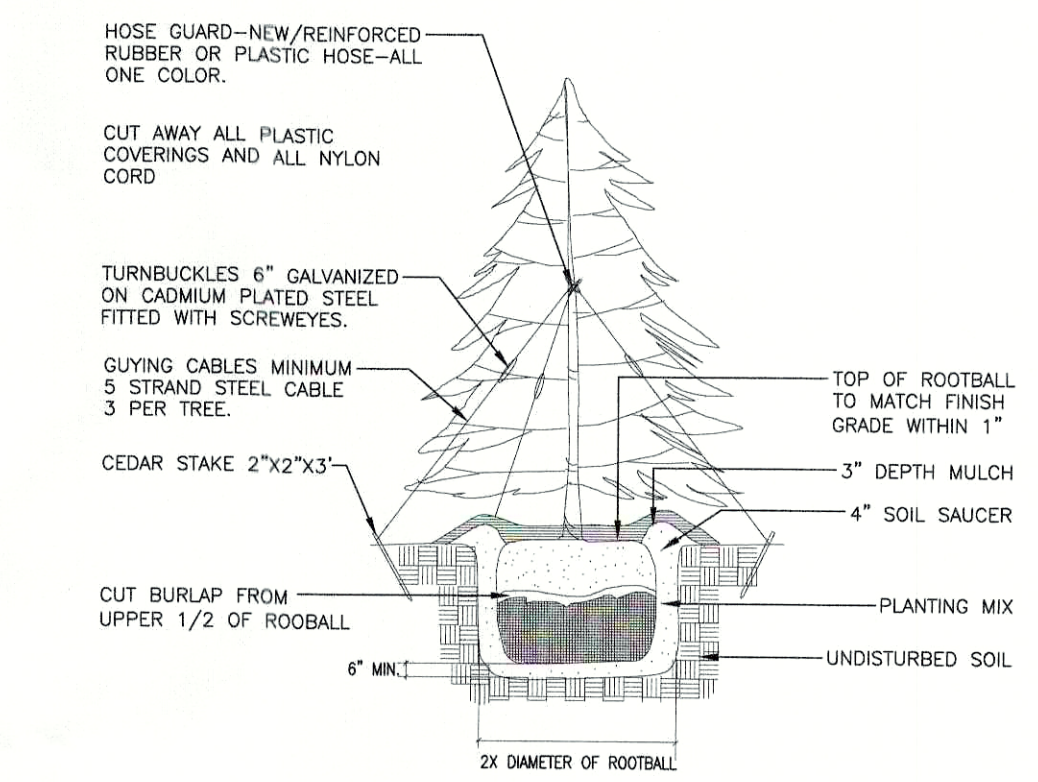
SYMBOL	DESCRIPTION	QTY	DETAIL
1	CONTRACTOR TO INSTALL SHREDDED BARK MULCH BENEATH PLANTINGS TO A DEPTH OF 3"		
2	4" DEPTH SPADE CUT BEDLINE		



1 SHRUB PLANTING DETAIL

NOT TO SCALE

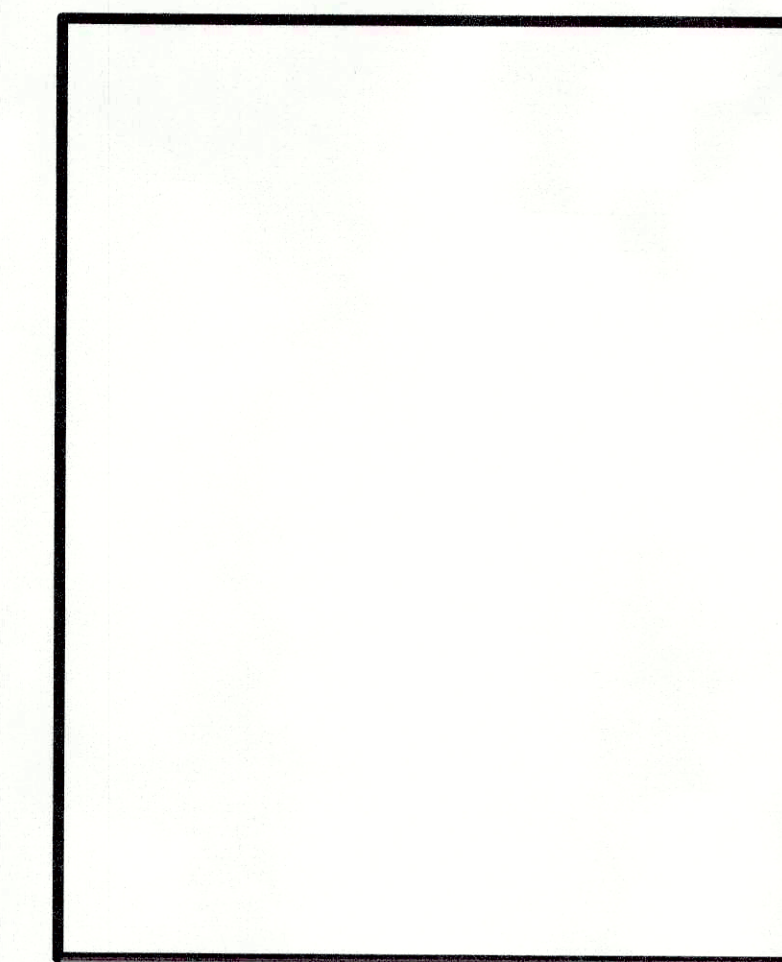
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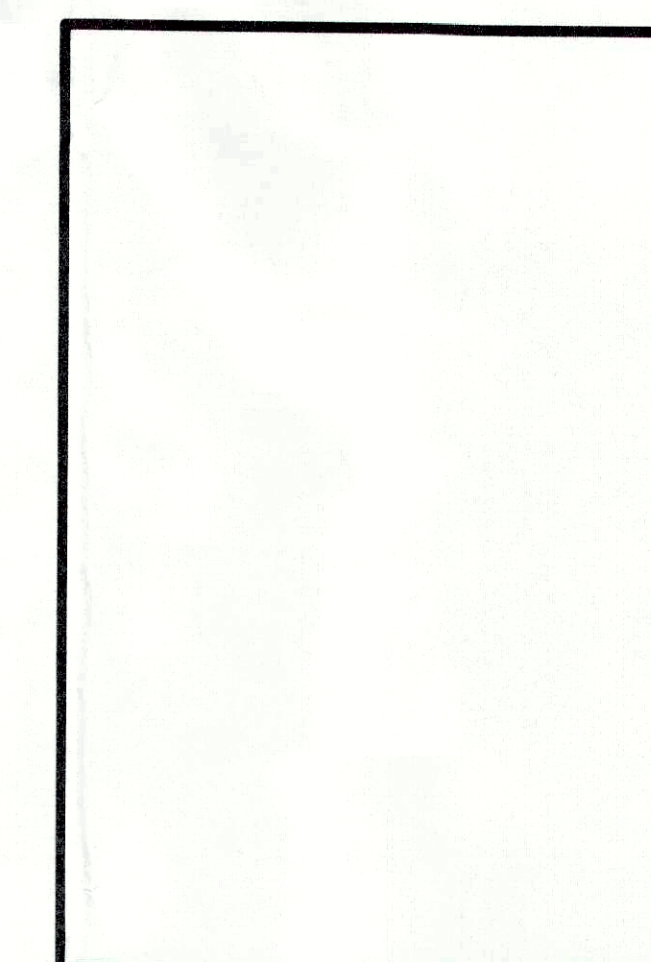
2 EVERGREEN TREE PLANTING DETAIL

1" = 1"

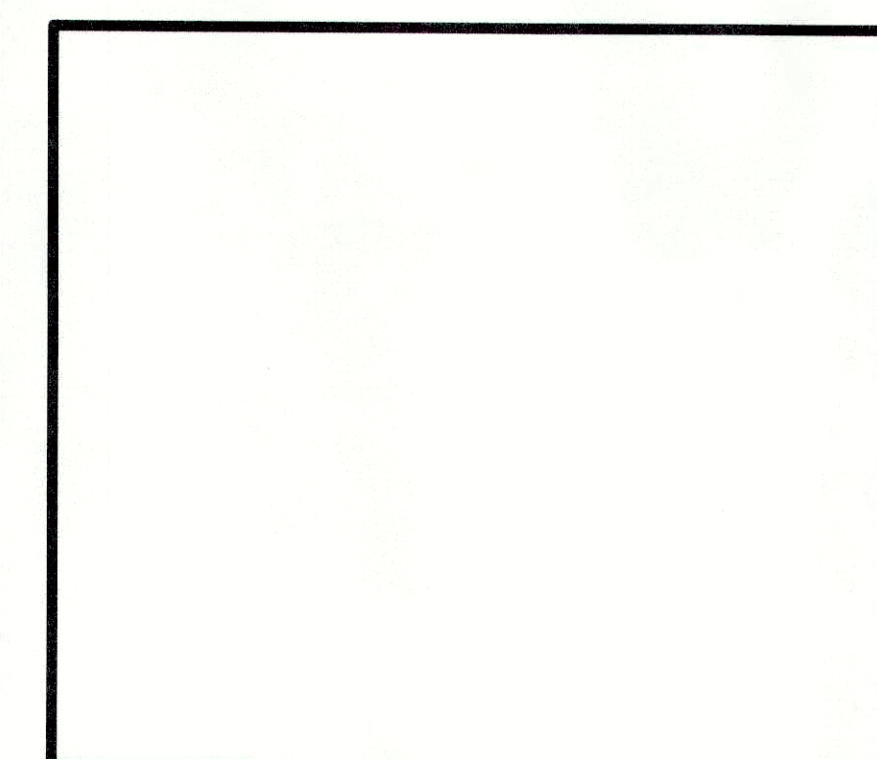
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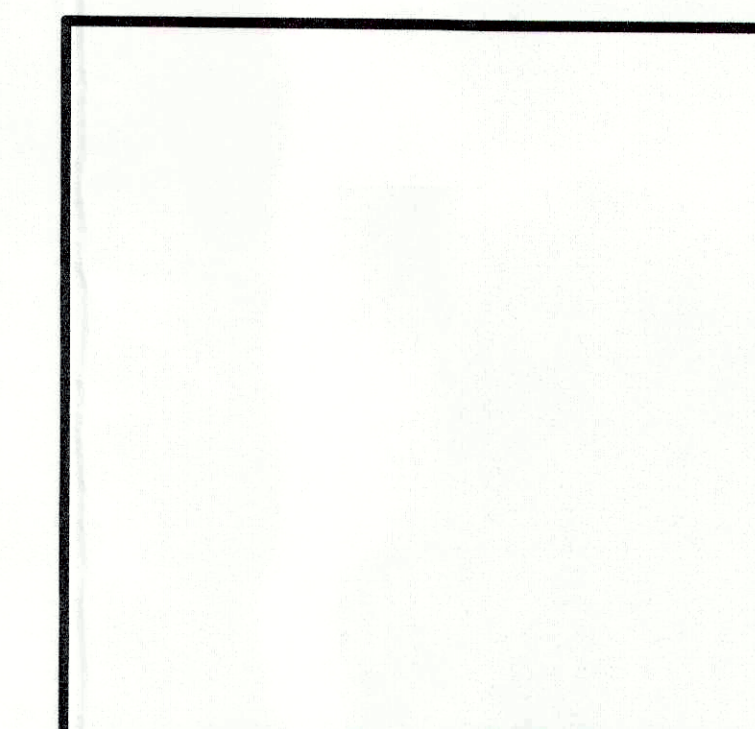
Picea glauca 'Densata'



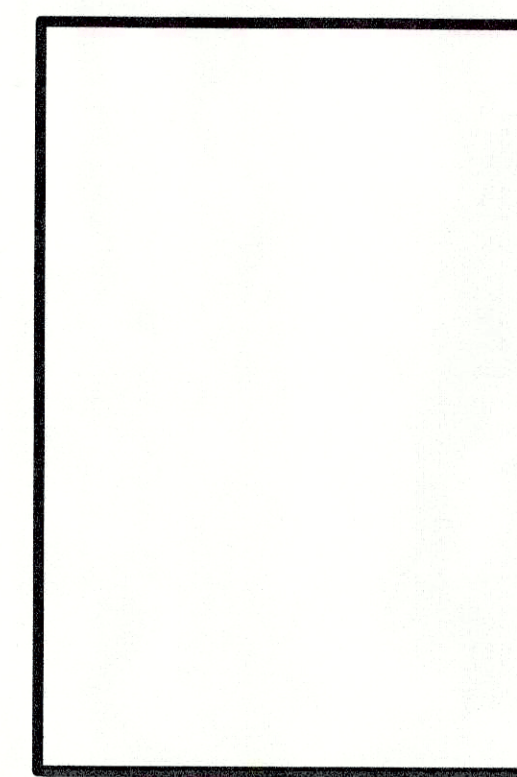
Thuja plicata



Cornus sericea



Aronia melanocarpa elata



Juniperus virginiana

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4/14/22

SITE USE PLANS
3901 GOMER COURT, YORKTOWN, NY 10598

PROJECT NUMBER:
908-1385

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
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	11/12/20	TB	MS	SUP SUBMISSION
	12/07/20	TB	MS	SUP SUBMISSION
	01/21/21	TB	MS	SUP SUBMISSION
	05/12/21	TB	MS	SUP SUBMISSION
	11/09/21	TB	GG	SUP SUBMISSION
	04/14/22	DC	GG	OEM UPDATES

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

APPROVED
Resolution Number 22-02
Date 1/10/22

C-6.0
LANDSCAPE PLAN

NOT FOR CONSTRUCTION

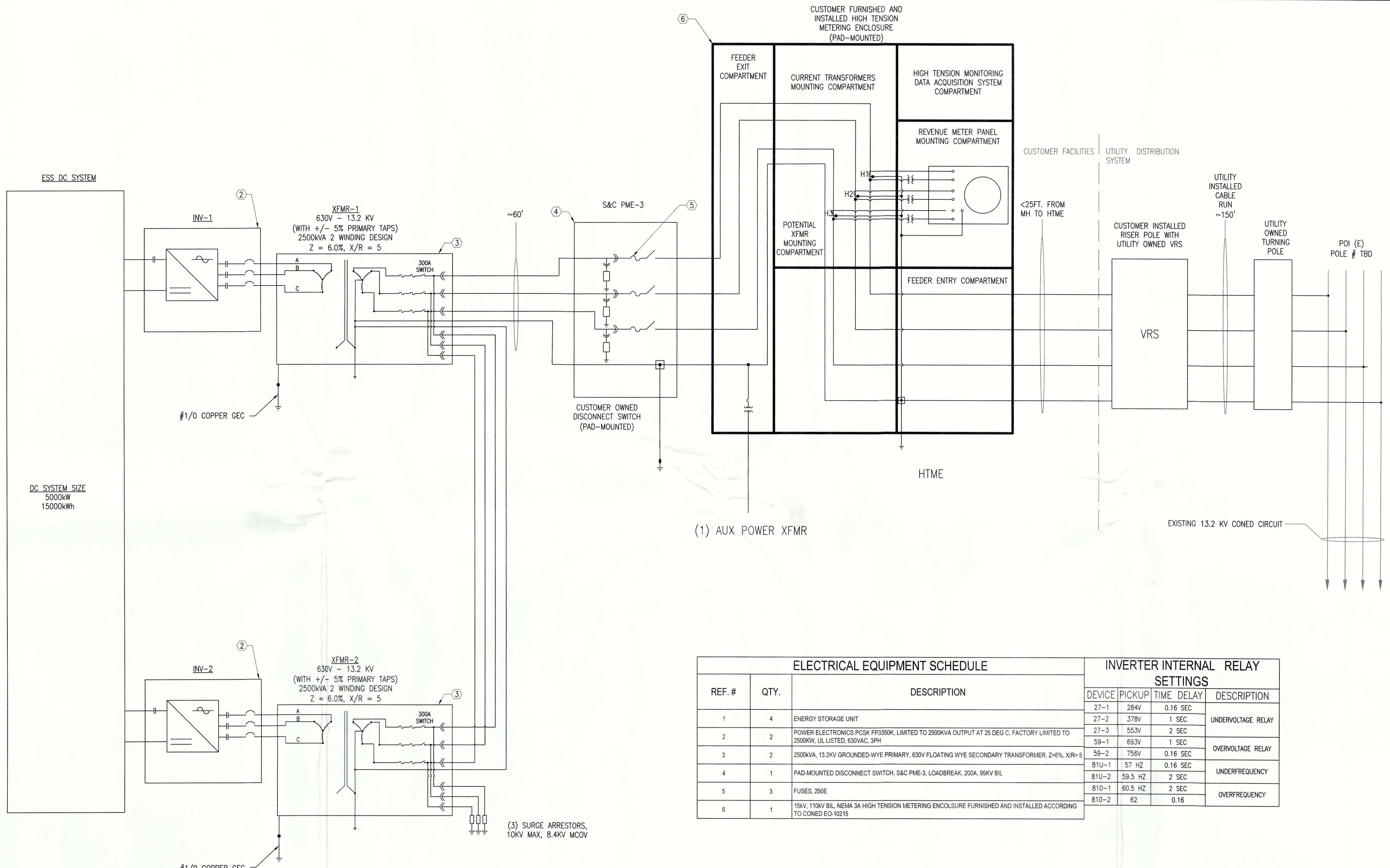
SITE USE PLANS
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	11/12/20	TB	MS	SUP SUBMISSION
	12/07/20	TB	MS	SUP SUBMISSION
	01/21/21	TB	MS	SUP SUBMISSION
	05/12/21	TB	MS	SUP SUBMISSION
	11/09/21	TB	GG	SUP SUBMISSION

SCALE: AS SHOWN ON DRAWING
ARE VALID ONLY WHEN PLOTTED
ARCH D 24" X 36"

E-3.3
AC THREE LINE DIAGRAM



REF. #	QTY.	DESCRIPTION	INVERTER INTERNAL RELAY SETTINGS			
			DEVICE	PICKUP	TIME DELAY	DESCRIPTION
1	4	ENERGY STORAGE UNIT	27-1	284V	0.16 SEC	UNDERVOLTAGE RELAY
			27-2	378V	1 SEC	
			27-3	553V	2 SEC	
2	2	POWER ELECTRONICS PCSK FP3350K, LIMITED TO 2500KVA OUTPUT AT 25 DEG C, FACTORY LIMITED TO 2500KW, UL LISTED, 630VAC, 3PH	59-1	693V	1 SEC	OVERVOLTAGE RELAY
3	2	2500KVA, 13.2KV GROUNDED-WYE PRIMARY, 630V FLOATING WYE SECONDARY TRANSFORMER, Z=6%, X/R=5	59-2	756V	0.16 SEC	
4	1	PAD-MOUNTED DISCONNECT SWITCH, S&C PME-3, LOADBREAK, 200A, 95KV BIL	81U-1	57 HZ	0.16 SEC	UNDERFREQUENCY
			81U-2	59.5 HZ	2 SEC	
5	3	FUSES, 250E	810-1	60.5 HZ	2 SEC	OVERFREQUENCY
6	1	15KV, 110KV BIL, NEMA 3A HIGH TENSION METERING ENCLOSURE FURNISHED AND INSTALLED ACCORDING TO CONED EO-10215	810-2	62	0.16	

AC THREE LINE DIAGRAM
SCALE: NTS

APPROVED
Resolution Number 22-02
Date 1/10/22

SHEET NOTES

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	12/07/20	TB	MS	SUP SUBMISSION
	01/21/21	TB	MS	SUP SUBMISSION
	05/12/21	TB	MS	SUP SUBMISSION
	11/09/21	TB	GC	SUP SUBMISSION

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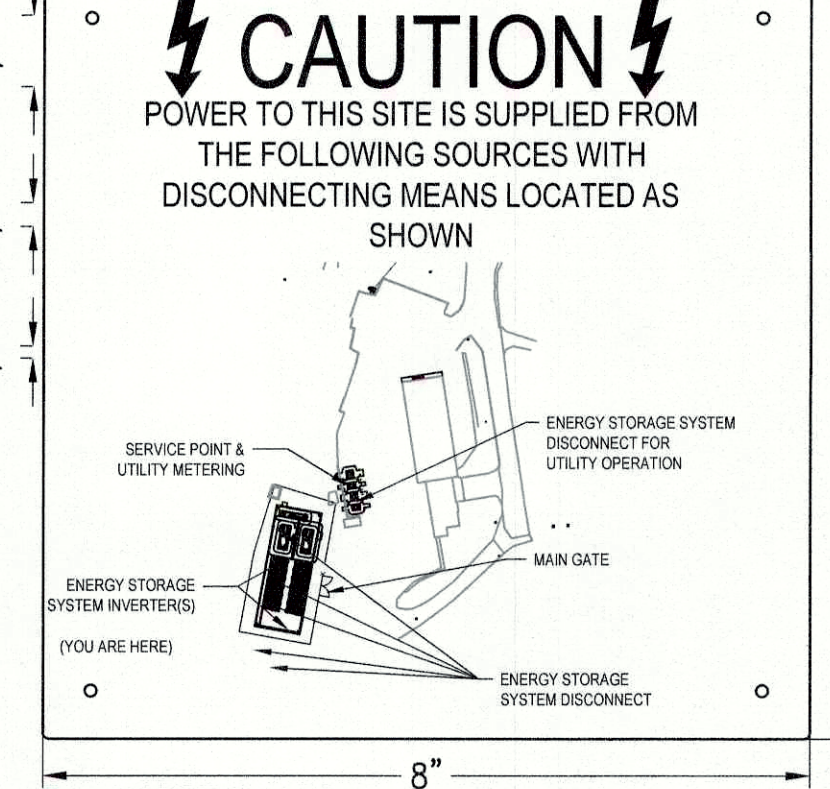
E-6.0
PLACARDS

- GENERAL PLACARD NOTES:
- NOT ALL PLACARDS DESCRIBED IN THESE NOTES MAY APPLY TO THIS PROJECT.
 - ELECTRICAL SUBCONTRACTOR SHALL PROVIDE ALL PLACARDS AS REQUIRED BY THE NEC, LOCAL FIRE DEPARTMENT, THE AUTHORITY HAVING JURISDICTION, AND LOCAL UTILITY REQUIREMENTS. PLACARDS IN ADDITION TO THOSE SHOWN HERE MAY BE REQUIRED BY THE NEC AND ARE THE RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR.
 - PLACARDS SHALL USE ARIAL OR SIMILAR FONT, NON-BOLD.
 - FONT SIZES SHALL BE THE MINIMUM SHOWN IN THESE DRAWINGS.
 - PLACARDS SHALL HAVE LETTERING IN CAPITAL LETTERS.
 - PLACARDS SHALL BE WEATHER RESISTANT AND SUITABLE FOR THE ENVIRONMENT AND COMPLY WITH ANSI Z535.4-2011.
 - PLACARDS SHALL BE ADHERED WHEN POSSIBLE AND MEET WITH UL969 STANDARDS. IF MECHANICALLY AFFIXED TO EQUIPMENT, USE RIVETS OR SCREWS. SEALANTS AND GASKETED HARDWARE SHALL BE USED TO MAINTAIN EQUIPMENT LISTINGS WHERE REQUIRED. NEMA 4R EQUIPMENT SHALL NOT BE DRILLED.
 - SUBMITTALS REQUIRED FOR PLACARDS AND FOR ADHESIVES USED TO SECURE PLACARDS TO EQUIPMENT.
 - PLACARDS WITH MOUNTING HOLES SHOULD BE 1/8" THICKNESS AND HOLES SHOULD BE 1/2" INSIDE FROM THE EDGE.

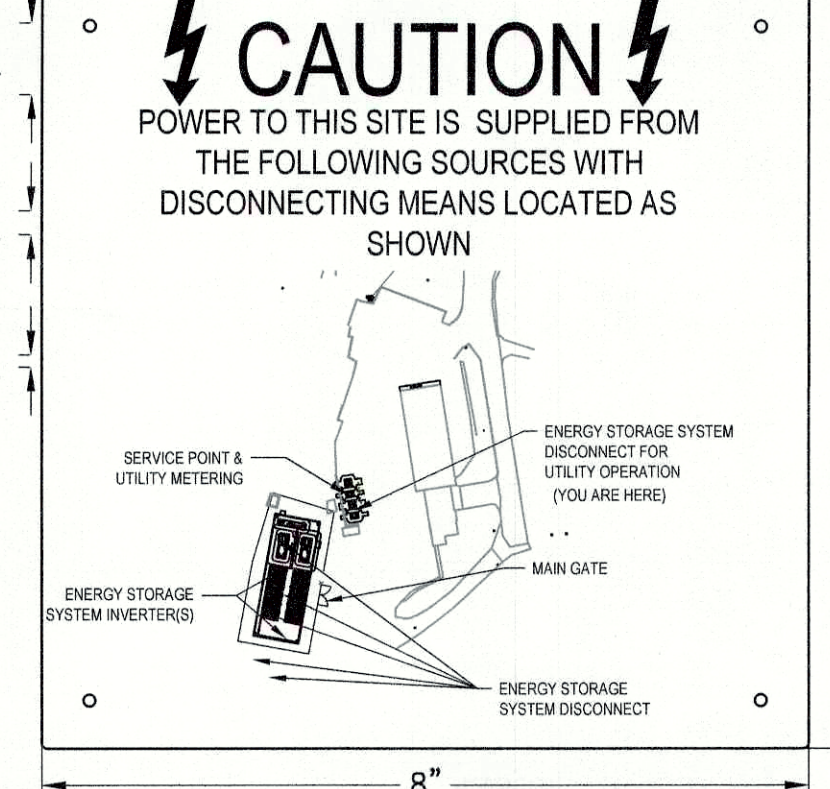
- EQUIPMENT ID PLACARDS:
- SUBCONTRACTOR SHALL LABEL ALL ARRAYS, PULL BOXES, JUNCTION BOXES, COMBINER BOXES, DC SAFETY SWITCHES, CIRCUIT BREAKER SAFETY SWITCHES, MULTIPLE DISCONNECT SAFETY SWITCHES, DC CONTACTOR DISCONNECTS, REMOTE PV TIES, BI-POLAR ARRAY COMBINERS, INVERTERS, AC SAFETY SWITCHES, TRANSFORMERS, PANELBOARDS, CIRCUIT BREAKERS, SWITCHGEAR, RECTIFIERS, DATA MONITORING ENCLOSURES, AND METERING CABINETS. A PARTIAL LIST OF PLACARDS IS SHOWN HERE.
 - EQUIPMENT ID PLACARDS - THE FIRST TYPE OF EACH REQUIRED EQUIPMENT ID PLACARD IS SHOWN HERE. ELECTRICAL SUBCONTRACTOR SHALL GENERATE PLACARDS FOR EACH PIECE OF EQUIPMENT AND NUMBER ALL EQUIPMENT PER THE NAMING AND NUMBERING CONVENTION DEFINED IN THESE PLANS.

V17

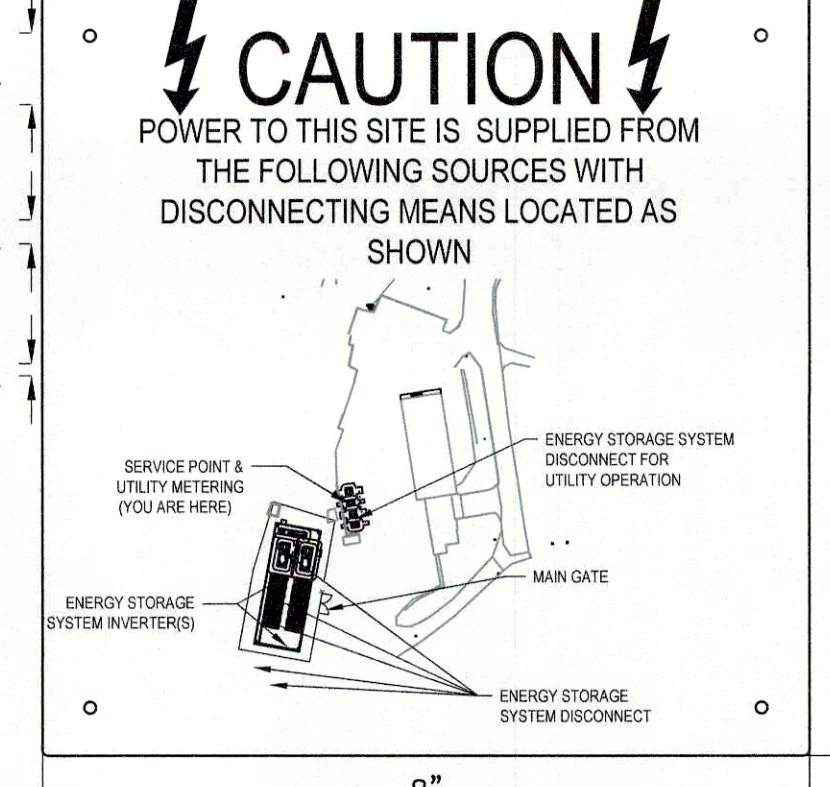
P1: DIRECTORY MAP
LOCATION: EQUIPMENT PAD
BACKGROUND COLOR: RED; TEXT COLOR: WHITE



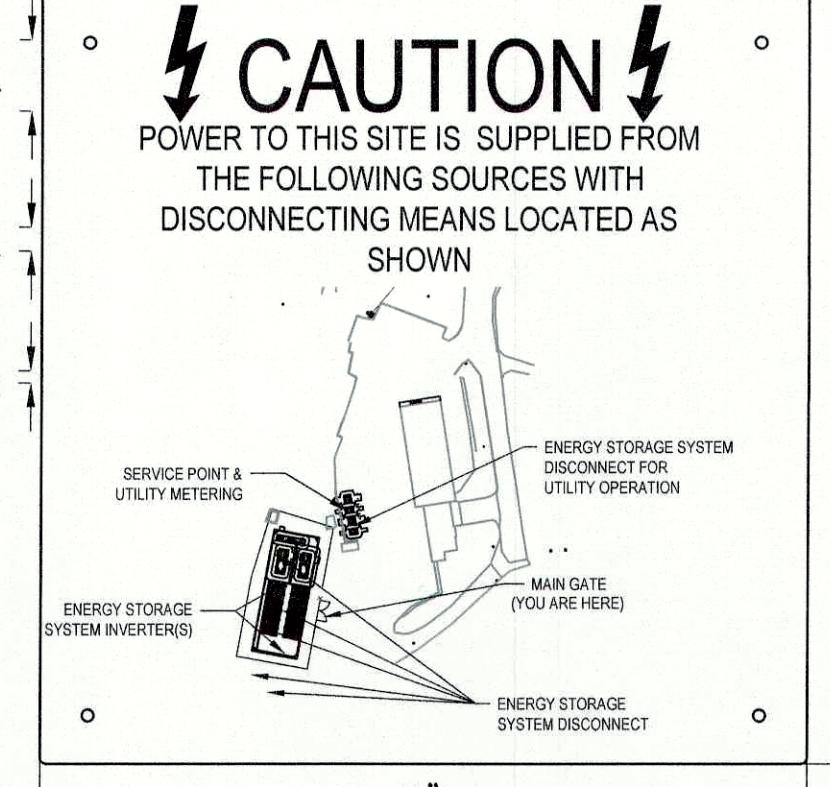
P1: DIRECTORY MAP
LOCATION: AC DISCONNECT
BACKGROUND COLOR: RED; TEXT COLOR: WHITE



P1: DIRECTORY MAP
LOCATION: UTILITY METER
BACKGROUND COLOR: RED; TEXT COLOR: WHITE



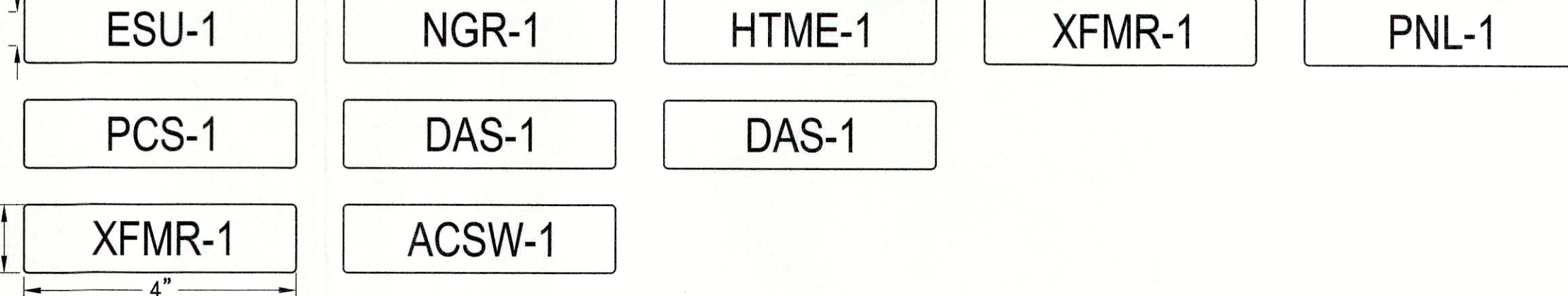
P1: DIRECTORY MAP
LOCATION: MAIN GATE
BACKGROUND COLOR: RED; TEXT COLOR: WHITE



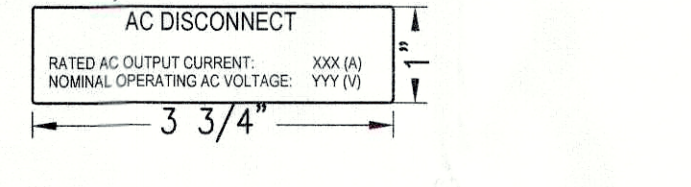
P2: BORREGO O&M CONTACT INFO
LOCATION: UTILITY ACSW, POI, INV-#, DAS
BACKGROUND COLOR: RED
TEXT COLOR: WHITE



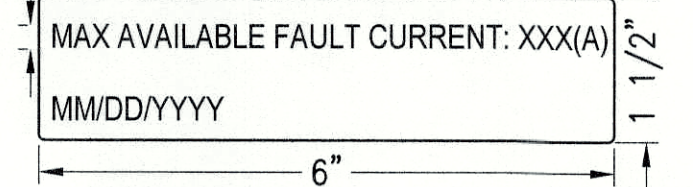
ARRAY AND EQUIPMENT ID
BACKGROUND COLOR: RED; TEXT COLOR: WHITE



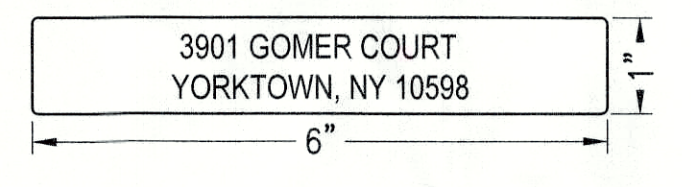
PAC1: UTILITY ESS DISCONNECTING MEANS
LOCATION: ACSW-X
NEC: 690.54
BACKGROUND COLOR: RED; TEXT COLOR: WHITE
HT P/N: 596-00892



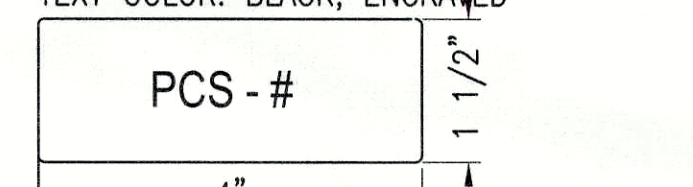
PAC13: FAULT CURRENT
LOCATION: PNL-X, MAIN SERVICE
NEC: 110.24(A)
BACKGROUND COLOR: WHITE
TEXT COLOR: BLACK, ENGRAVED



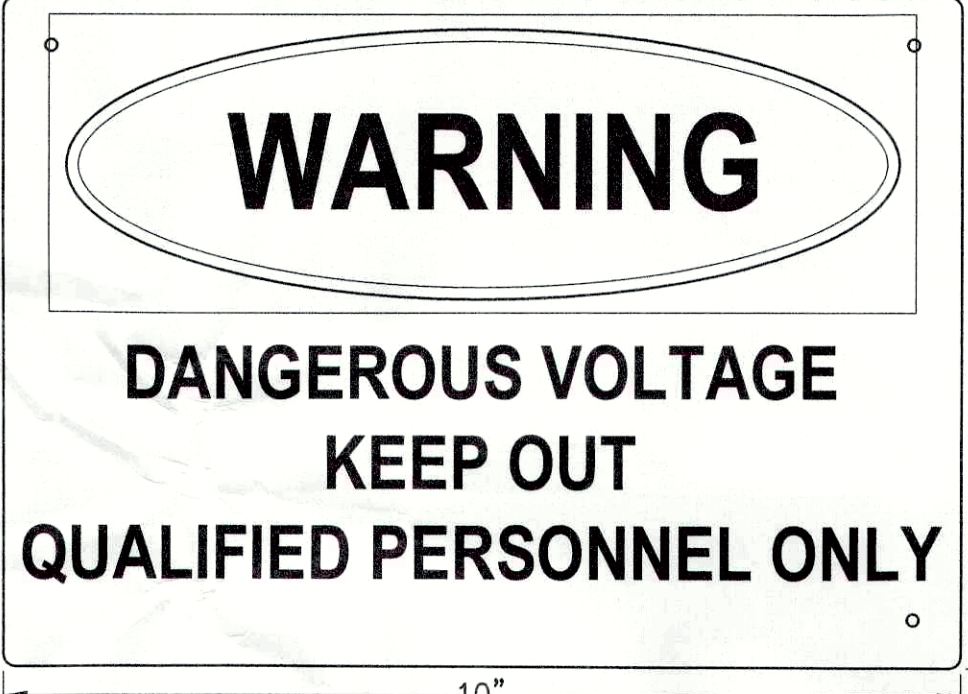
PAC2: SITE ADDRESS
LOCATION: UTILITY ACSW-X
BACKGROUND COLOR: RED
TEXT COLOR: WHITE



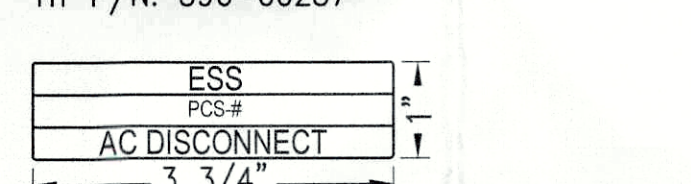
PAC14: SOURCE OF SUPPLY
LOCATION: AT EACH PCS BREAKER OF PNL AND SWBD, MAIN SERVICE
NEC: 408.4(B)
BACKGROUND COLOR: WHITE
TEXT COLOR: BLACK, ENGRAVED



P4: DANGEROUS VOLTAGE
LOCATION: ALL ACCESS POINTS TO THE SITE AND EVERY 250' AROUND THE PERIMETER (ON FENCES AS NECESSARY)
NEC: 110.27(C)
BACKGROUND COLOR: ORANGE; TEXT COLOR: BLACK



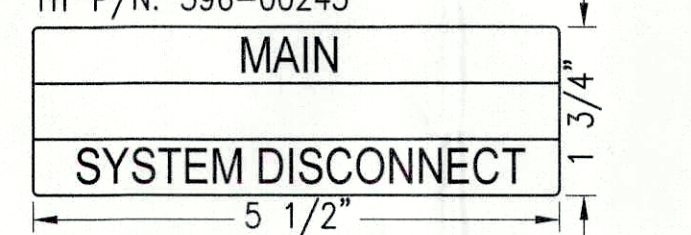
PAC3: AC EQUIPMENT DISCONNECTING MEANS
LOCATION: ACSW-X OR INV-# (IF INTEGRAL ACSW)
NEC: 690.13(B)
BACKGROUND COLOR: RED, WHITE
TEXT COLOR: WHITE
HT P/N: 596-00237



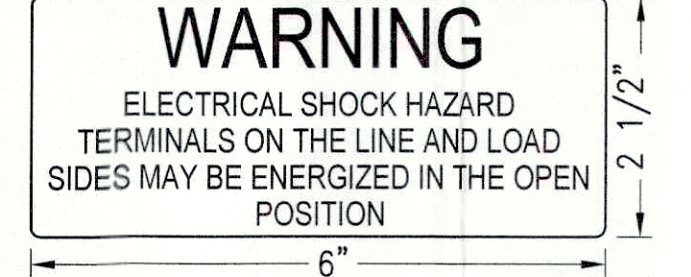
PDC4: FUSE SERVICE WARNING
LOCATION: INV-X
BACKGROUND COLOR: ORANGE AND WHITE
TEXT COLOR: BLACK, ENGRAVED



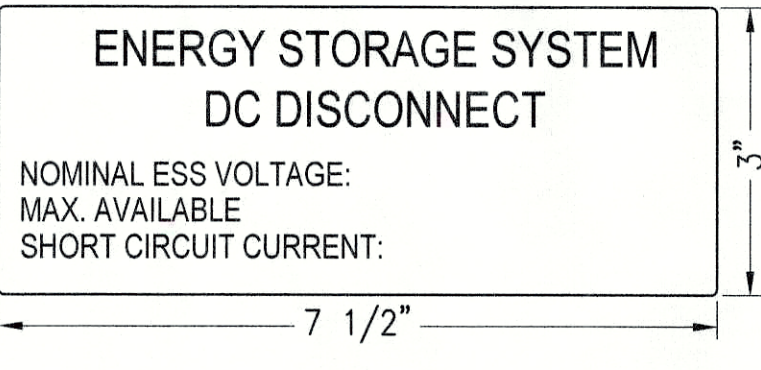
PAC4: PV SYSTEM DISCONNECTING MEANS
LOCATION: ACSW-X OR INV-# (IF CENTRAL INV.)
NEC: 690.13(B)
BACKGROUND COLOR: RED REFLECTIVE, WHITE
TEXT COLOR: WHITE
HT P/N: 596-00243



PAC5: AC DISCONNECT MEANS ENERGIZED
LOCATION: ACSW-X, PNL-X
NEC: 690.13(B)
BACKGROUND COLOR: ORANGE AND WHITE
TEXT COLOR: BLACK
HT P/N: 596-00878



ESS1: ENERGY STORAGE SYSTEM DISCONNECTING MEANS
LOCATION: ESS SW-X
NEC: 706.7(D)
BACKGROUND COLOR: RED; TEXT COLOR: WHITE
HT P/N: 596-00987



APPROVED
Resolution Number 22-02
Date 11/01/22

FREEMAQ PCSK
FREEMAQ MULTI PCSK
UTILITY SCALE BATTERY INVERTER

- POWER CONVERSION SYSTEM
- FIELD REPLACEABLE UNITS
- MODULAR DESIGN
- UP TO 3 INDEPENDENT BESS INPUTS
- ICOOL 3
- 4 QUADRANT
- 3 LEVEL TOPOLOGY
- NEMA 3R / IP55

PROVEN HARDWARE AND ROBUST OUTDOOR DESIGN LATEST WITH THE LATEST CONTROL

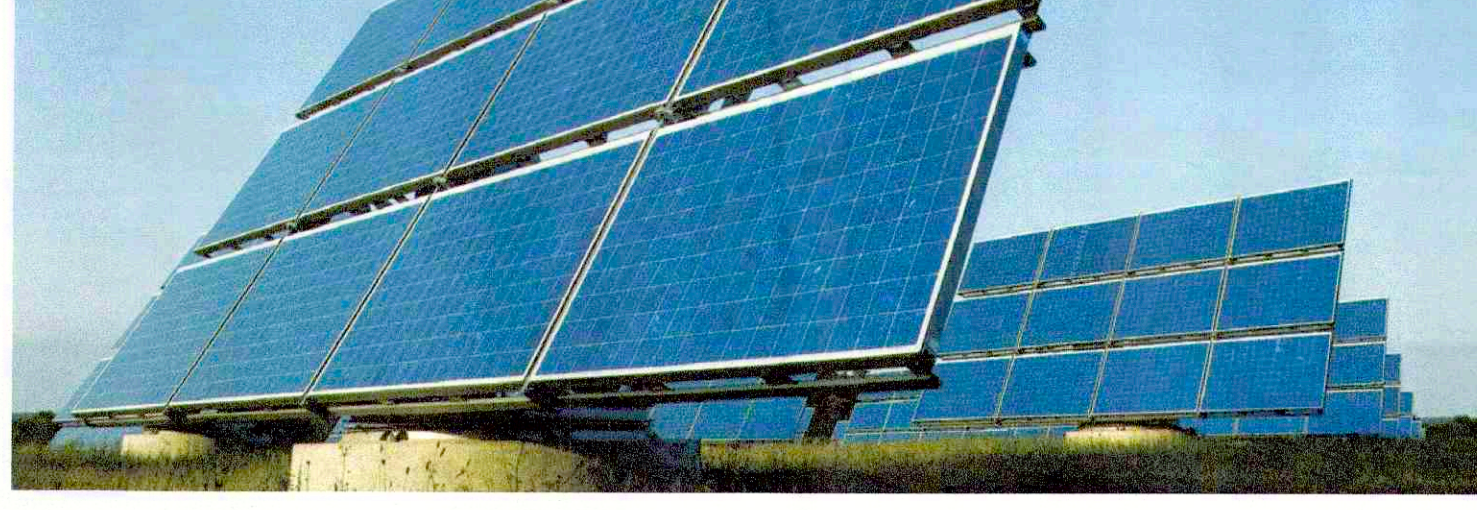
The Freemaq PCSK is a modular solution from 1700 kW to 3800 kW with configurable DC and AC voltages making it compatible with all battery technology and manufacturers. Power Electronics is a proven partner in the solar and energy storage market. The PCSK has been designed to be the lowest LCOE solution in the market for storage applications.

The Power Electronics Freemaq PCSK offers proven hardware to meet storage and grid support challenges. The energy production industry is embracing renewable energy sources. However, high penetration creates power transmission instability challenges, thus Grid Operators require stringent dynamic and static grid support features for solar inverters and Power Conversion Systems (PCS).

The MULTI PCSK can support two or three independent battery systems and optimize the storage facility. The converters can perform grid support functions such as Peak Shaving, Ramp Rate Control, Frequency Regulation, Load Leveling and Voltage Regulation, controlled by a Power Plant Controller or SCADA. The converters stations are turn-key solutions ready for connection to the battery container and MV power distribution wiring. Units are designed for concrete pads or piers, open skids or integrated into full container solutions.

Envirotran
Solar transformer

COOPER POWER SERIES



Making a brighter future possible

As a result of the increasing number of states that are adopting aggressive renewable and alternative energy portfolios, the solar energy market is growing—nearly doubling year over year. Eaton, a key innovator and supplier in this expanding market, is proud to offer Cooper Power™ series Envirotran™ transformers specifically designed for solar photovoltaic medium-voltage applications. Eaton is working with top solar photovoltaic developers, integrators and inverter manufacturers to evolve the industry and change the way we distribute power.

In accordance with this progressive stance, every Cooper Power series Envirotran solar transformer is filled with non-toxic, biodegradable Envirotemp™ FR3™ dielectric fluid made from renewable seed oils. On top of its biodegradability, Envirotemp FR3 fluid substantially extends the life of the transformer insulation, saving valuable resources. What better way to distribute green power than to use a green transformer? In fact, delaying conversion to Envirotran transformers places the burden of today's environmental issues onto tomorrow's generations. Eaton can help you create a customized transformer based on site-specific characteristics including temperature profile, site altitude, solar profile and required system life.

- Some of the benefits gained from this custom rating include:
- Reduction in core losses
 - Improved payback on investment
 - Reduction in footprint
 - Improved fire safety
 - Reduced environmental impact



Finally, when it comes time for decommissioning of your Envirotran solar transformer, virtually all materials, from the durable core and cabinet steel to the biodegradable Envirotemp FR3 fluid, can be easily and economically recycled or reclaimed.

Envirotran solar transformers, when evaluated on total ownership cost (TOC), can save you money on losses and maintenance. For example, the table below shows the savings you could experience by allowing Eaton to site-optimize the transformer design.

Rating	No load loss	Load loss	No load loss @	Load loss @	Price	Total ownership cost
1000 kVA	1800 W	8200 W	\$15,720	\$59,000	\$22,000	\$51,250
Optimized 1250 W	6800 W	\$12,280	\$50,000	\$27,000	\$44,350	14% savings

- Based on 20 years, 5% interest, \$c/kWh.
- 21% average loading.
- 30% average loading.

Note: Values above for illustrative purposes only. Actual values will depend on many factors not discussed here.



TECHNICAL CHARACTERISTICS

	FRAME 1	FRAME 2
NUMBER OF MODULES	4	6
REFERENCES	FP235K2	FP335K2 FP335K3
AC		
AC Output Power (kVA/kW) @50°C [1]	2235	3350
AC Output Power (kVA/kW) @40°C [1]	2310	3465
Max. AC Output Current (A) @50°C	2047	3070
Max. AC Output Current (A) @40°C	2117	3176
Operating Grid Voltage (VAC)	500V-110V	500V-110V
Operating Grid Frequency (Hz)	50/60 Hz	50/60 Hz
Current Harmonic Distortion (THD)	< 3% per IEEE519	< 3% per IEEE519
Power Factor (cosine phi) [2]	0.9 leading, 0.5 lagging	0.9 leading, 0.5 lagging
Reactive power compensation	Four quadrant operation	Four quadrant operation
DC		
DC Voltage Range (full power)	891V-1310V	891V-1310V
Maximum DC voltage	1500V	1500V
DC Voltage Ripple	< 3%	< 3%
Max. DC continuous current (A)	2646	3969
Max. DC short-circuit current (A)	180kA / 5ms	180kA / 5ms
Battery Technology	All type of batteries (BMS required)	All type of batteries (BMS required)
Number of separate DC inputs	2	2 3
Efficiency (Max) (%)	98.70%	98.85%
Efficiency (n)	98.42%	98.59%
Max. Power Consumption (kVA)	8	10
CABINET		
Dimensions (WxDxH) (in)	12 x 7 x 7	12 x 7 x 7
Dimensions (WxDxH) (mm)	12125	3174 x 2 x 2.2
Weight (lbs)	5500	12677
Weight (kg)	5500	5750
ENVIRONMENT		
Type of ventilation	Forced air cooling	Forced air cooling
Degree of protection	NEMA 3R / IP55	NEMA 3R / IP55
Permissible Ambient Temperature	-35°C to +60°C / +50°C / Active Power derating (>50°C)	-35°C to +60°C / +50°C / Active Power derating (>50°C)
Relative Humidity	4% to 100% non condensing	4% to 100% non condensing
Max. Altitude (above sea level)	2000m / +2000m power derating (Max. 4000m)	2000m / +2000m power derating (Max. 4000m)
Noise level [3]	< 79 dBA	< 79 dBA
CONTROL INTERFACE		
Communication protocol	Modbus TCP	Modbus TCP
Power Plant Controller	Optional. Third party SCADA systems supported.	Optional. Third party SCADA systems supported.
Keyed ON/OFF switch	Standard	Standard
Ground Fault Protection	Insulation monitoring device	Insulation monitoring device
Humidity control	Active heating	Active heating
General AC Protection & Disconn.	Circuit Breaker	Circuit Breaker
General DC Protection & Disconn.	DC switch [4]	DC switch [4]
PROTECTIONS		
Overvoltage Protection	AC and DC protection (Type 2)	AC and DC protection (Type 2)
Safety	UL1741, CSA 22.2 No.107.1-14, IEC62109-1, IEC62109-2	UL1741, CSA 22.2 No.107.1-14, IEC62109-1, IEC62109-2
CERTIFICATIONS		
Utility Interconnect [5]	UL 1741 SA - Feb. 2016, IEEE 1547 1-2005	UL 1741 SA - Feb. 2016, IEEE 1547 1-2005

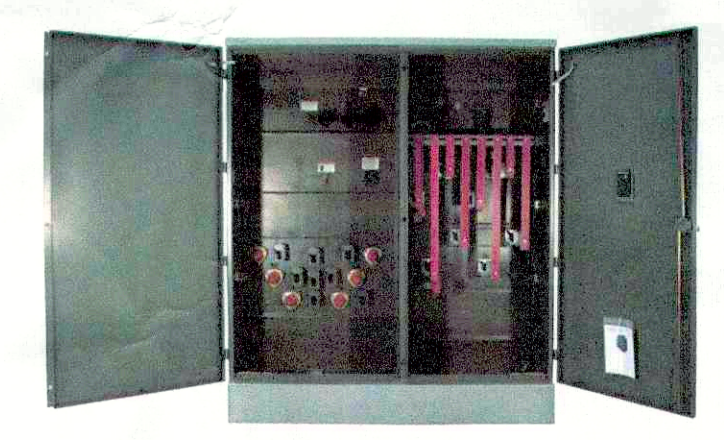
[1] Values at 1100Vdc norm and cos phi = 1. Consult Power Electronics for derating curves.
[2] Consult P.E. charts for available QMW/kVA/Hz/Hz/Hz/Hz.
[3] Readings taken 1 meter from the back of the unit.
[4] Battery short circuit disconnection has to be done on the battery side.
[5] Consult Power Electronics for other applicable standards / grid codes.

Why Envirotran solar transformer?

Environmentally desirable
Envirotran solar transformers are friendlier to the environment. While traditional liquid-filled transformers use mineral oil or synthetic oils, Envirotran transformers use the revolutionary, vegetable oil-based, dielectric coolant—Envirotemp FR3 fluid. Envirotemp FR3 fluid is made from soybeans, making it both non-toxic and non-hazardous. Moreover, because Envirotemp FR3 dielectric fluid is petroleum independent, it doubles as a valuable renewable resource with a carbon-neutral footprint.

Quality matters
Choosing Eaton's Cooper Power series reliable and durable Envirotran solar transformer allows you substantial cost savings, delayed capital expenditures and maximized power handling performance. It all starts with the superior performance of Envirotemp FR3 fluid, preserving and protecting the paper insulation found in each coil. This extended insulation life coupled with the non-hazardous properties of Envirotemp FR3 fluid makes the Envirotran solar transformer design an industry leader in quality and reliability.

High fire point
Envirotemp FR3 fluid, which has a fire point above 300 °C, highly reduces the likelihood of a fire within the transformer. In more than 30 years of field experience, no Cooper Power series less-flammable fluid-filled transformer has resulted in a pool fire. Mineral oil, while exhibiting reliable dielectric properties, typically does not provide an adequate margin of fire safety during transformer failure. With a fire point at nearly double (300 °C compared to 155 °C) of mineral oil, switching to Eaton's Cooper Power series Envirotran solar transformer filled with Envirotemp FR3 fluid will greatly minimize the long-term risk associated with catastrophic transformer failures.



Product scope

Description	Specification
Type	Three-phase, 50 or 60 Hz, 65 °C rise (55 °C, 55 °C/65 °C, 75 °C, 85/75 °C)
Fluid type	Envirotemp FR3 fluid
Size	45-12,000 kVA
Primary voltage	2400-46,000 V
Secondary voltage	208Y/120 V to 14,400 V
Coil configuration	2-winding or 4-winding or 3-winding (low-high-low), 3-winding (low-low-high)
Specialty designs	Inverter/rectifier bridge K-Factor tap to K=18 Vacuum fault interrupter (VFI) UL listed, labeled and classified Factory mutual (FM) approved Solar/wind designs Differential protection Seismic applications (including DSHPC)



For Eaton's Cooper Power series product information, visit Eaton.com/cooperpowerseries

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United States
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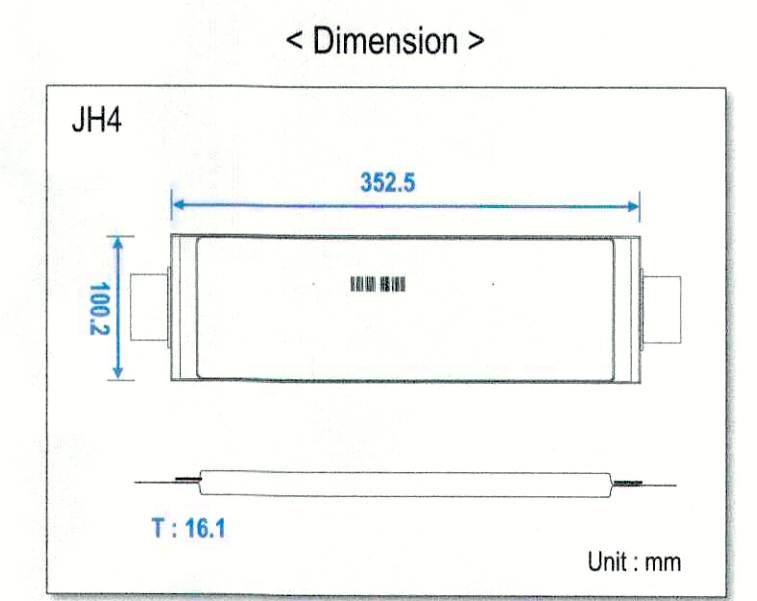
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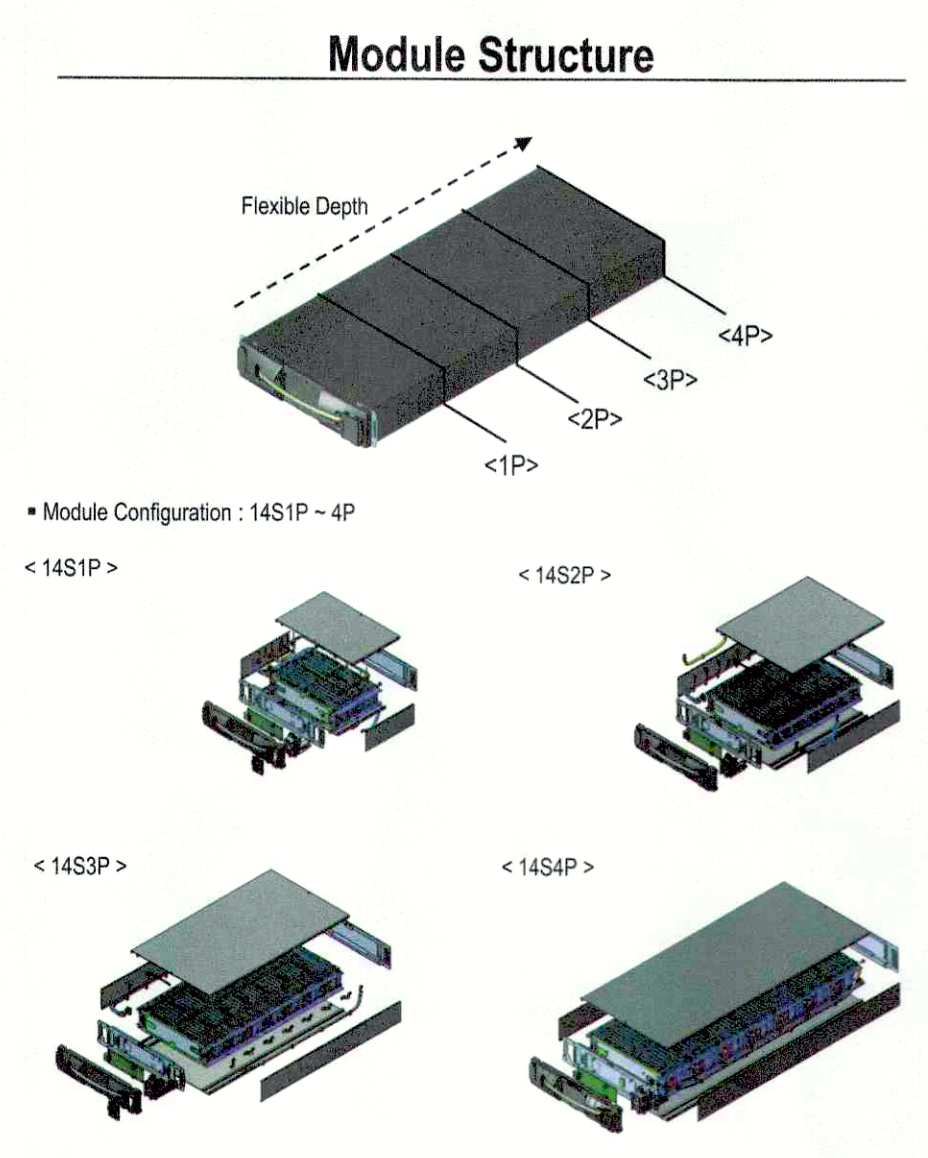
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JH4 Cell Information

Item	Unit	JH4
Nominal Capacity	Ah	72.5
Nominal Energy	Wh	266
Nominal Voltage	V	3.67
Energy Density	Wh/L	468
Specific Energy	Wh/kg	226
Voltage Range	V	3.0 ~ 4.2
Storage Temperature (for shipping state)	°C	-30 ~ 60
Weight	g	1,175
Volume	mL	569
Dimension (W/L/T)	mm	100.2 / 352.5 / 16.1
Chemistry	(+)	NMC
	(-)	Graphite



JH4 - Module Specification



Module Configuration

Specification	JH4			
	14S1P	14S2P	14S3P	14S4P
Cell type	JH4			
Configuration	14S1P	14S2P	14S3P	14S4P
Voltage Range (V)	42 ~ 58.8 (nominal : 51.8)			
Capacity (Ah)	72.5	145	217.5	290
Energy (kWh)	3.7	7.4	11.1	14.8
Max Constant Power	Cell : Max 0.5CP Module : TBD			
Dimension (mm, W x H x D)	445 110 x 338.8	445 x 110 x 586.6	445 x 110 x 846.4	445 x 110 x 1100
Weight (kg)	25	43.5	68	85

※ All product specifications are tentative and subject to change



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NOT FOR CONSTRUCTION

SITE USE PLANS
3001 GOMER COURT, YORKTOWN, NY 10598

PROJECT NUMBER:
908-1385

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
09/18/20	TB	MS	SUP	SUBMISSION
10/13/20	TB	MS	SUP	SUBMISSION
11/17/20	TB	MS	SUP	SUBMISSION
12/07/20	TB	MS	SUP	SUBMISSION
01/21/21	TB	MS	SUP	SUBMISSION
05/12/21	TB	MS	SUP	SUBMISSION
11/09/21	TB	MS	SUP	SUBMISSION

APPROVED
Resolution Number 22-02
Date 1/10/22

SCALE SHOWN ON DRAWING
ARE VALID ONLY WHEN PLOTTED
ARCH D 24" x 36"

E-7.0
DATA SHEETS