Site Plans

Issued for	**Construction**
Date Issued	**July 23, 2021**
Latest Issue	**April 6, 2025**

Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

Applicant

Greenskies Clean Energy, LLC
127 Washington Ave
West Building, Garden Level
North Haven, CT 06473

Map / Block / Lot:

038 / 68 / 030
028 / 68 / 023

Owner

Mulnite Farms, Inc.
28 Miller Road
Broad Brook, CT 06016

Leonard A. Mulnite Revocable Trust Agreement
& Donna L. Mulnite Revocable Trust Agreement
28 Miller Road
Broad Brook, CT 06016

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Reference Drawings

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Suite 200
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860.807.4300

Licensed Land Surveyor
Northeast Survey Consultants
116 Pleasant St. Suite 302
P.O. Box 109
Easthampton, MA 01027
413-203-5144

STATE OF CONNECTICUT
STEVEN J. KOCH
27483
LICENSED PROFESSIONAL ENGINEER

VHB Project : Photovoltaic Installation
Issued for : Construction

Legend

Exist.	Prop.	
		PROPERTY LINE
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/PROPERTY LINE
		EASEMENT
		BUILDING SETBACK
		PARKING SETBACK
10+00	10+00	BASELINE
		CONSTRUCTION LAYOUT
		ZONING LINE
		TOWN LINE
		LIMIT OF DISTURBANCE
		WETLAND LINE WITH FLAG
		FLOODPLAIN
		100-YEAR FLOOD LIMITS
		GRAVEL ROAD
EOP	EOP	EDGE OF PAVEMENT
BB	BB	BITUMINOUS BERM
BC	BC	BITUMINOUS CURB
CC	CC	CONCRETE CURB
	CG	CURB AND GUTTER
CC	ECC	EXTRUDED CONCRETE CURB
CC	MCC	MONOLITHIC CONCRETE CURB
CC	PCC	PRECAST CONC. CURB
SGE	SGE	SLOPED GRAN. EDGING
VGC	VGC	VERT. GRAN. CURB
		LIMIT OF CURB TYPE
		SAWCUT
		BUILDING
	EN	BUILDING ENTRANCE
	LD	LOADING DOCK
		BOLLARD
D	D	DUMPSTER PAD
		SIGN
		DOUBLE SIGN
		STEEL GUARDRAIL
		WOOD GUARDRAIL
		PATH
		TREE LINE
		WIRE FENCE
		FENCE
		STOCKADE FENCE
		STONE WALL
		RETAINING WALL
		STREAM / POND / WATER COURSE
		DETENTION BASIN
		HAY BALES
		SILT FENCE
		SILT SOCK / STRAW WATTLE
4	4	MINOR CONTOUR
20	20	MAJOR CONTOUR
10	10	PARKING COUNT
	C10	COMPACT PARKING STALLS
DYL	DYL	DOUBLE YELLOW LINE
SL	SL	STOP LINE
		CROSSWALK
		ACCESSIBLE CURB RAMP
		ACCESSIBLE PARKING
VAN	VAN	VAN-ACCESSIBLE PARKING

Exist.	Prop.	
		CONCRETE
		HEAVY DUTY PAVEMENT
		BUILDINGS
		RIPRAP
		CONSTRUCTION EXIT
27.35 TC×	27.35 TC×	TOP OF CURB ELEVATION
26.85 BC×	26.85 BC×	BOTTOM OF CURB ELEVATION
132.75 ×	132.75 ×	SPOT ELEVATION
45.0 TW× 36.5 BW×	45.0 TW× 36.5 BW×	TOP & BOTTOM OF WALL ELEVATION
		BORING LOCATION
		TEST PIT LOCATION
MW	MW	MONITORING WELL
UD	UD	UNDERDRAIN
12"D	12"D	DRAIN
6"RD	6"RD	ROOF DRAIN
12"S	12"S	SEWER
FM	FM	FORCE MAIN
OHW	OHW	OVERHEAD WIRE
6"W	6"W	WATER
4"FP	4"FP	FIRE PROTECTION
	2"DW	DOMESTIC WATER
3"G	G	GAS
E	E	ELECTRIC
STM	STM	STEAM
T	T	TELEPHONE
FA	FA	FIRE ALARM
CATV	CATV	CABLE TV
		CATCH BASIN
		DOUBLE CATCH BASIN
		GUTTER INLET
		DRAIN MANHOLE
TD		TRENCH DRAIN
		PLUG OR CAP
CO	CO	CLEANOUT
		FLARED END SECTION
		HEADWALL
		SEWER MANHOLE
CS	CS	CURB STOP & BOX
WV	WV	WATER VALVE & BOX
TSV	TSV	TAPPING SLEEVE, VALVE & BOX
		SIAMESE CONNECTION
HYD	HYD	FIRE HYDRANT
WM	WM	WATER METER
PIV	PIV	POST INDICATOR VALVE
W	W	WATER WELL
GG	GG	GAS GATE
GM	GM	GAS METER
E	EMH	ELECTRIC MANHOLE
EM	EM	ELECTRIC METER
		LIGHT POLE
T	TMH	TELEPHONE MANHOLE
T	T	TRANSFORMER PAD
		UTILITY POLE
		GUY POLE
		GUY WIRE & ANCHOR
HH	HH	HAND HOLE
PB	PB	PULL BOX
Matchline	Matchline	MATCHLINE

Abbreviations

General

ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL

Utility

CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PIV	POST INDICATOR VALVE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

Notes

General

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (811 OR 1-800-922-4455) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS.
4. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
7. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
8. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
9. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
10. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND WILL REQUIRE ADHERENCE TO AND REGISTRATION FOR THE CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES, EFFECTIVE DECEMBER 31, 2020 AS AMENDED.
11. STAGING AND STOCKPILE AREAS SHALL NOT BE LOCATED WITHIN ANY WETLAND AND ABUTTING RESOURCE AREA AND SHALL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE.

Utilities

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
4. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
5. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.

Layout and Materials

1. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
2. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
3. FINAL LAYOUT SUBJECT TO CONDITIONS ENCOUNTERED IN THE FIELD.

Demolition

1. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
2. THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
3. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR OR QUALIFIED INSPECTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS OR MORE FREQUENTLY AS NEEDED, (MINIMUM) OR AS REQUIRED PER THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. VEGETATIVE SLOPE STABILIZATION WILL BE IMPLEMENTED WITHIN 14 DAYS AFTER GRADING OR CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. VEGETATIVE SLOPE STABILIZATION WILL BE USED TO MINIMIZE EROSION ON SLOPES OF 3:1 OR STEEPER. ESTABLISHMENT OF TEMPORARY AND PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO-SEEDING OR SODDING. A SUITABLE TOPSOIL, GOOD SEEDBED PREPARATION, AND ADEQUATE LIME, FERTILIZER AND WATER WILL BE PROVIDED FOR EFFECTIVE ESTABLISHMENT OF THESE VEGETATIVE STABILIZATION METHODS. MULCH WILL ALSO BE USED AFTER PERMANENT SEEDING TO PROTECT SOIL FROM THE IMPACT OF FALLING RAIN AND TO INCREASE THE CAPACITY OF THE SOIL TO ABSORB WATER.

Existing Conditions Information

1. BASE PLAN: THE PROPERTY LINES SHOWN WERE DETERMINED BY PLANS AND DEEDS OF RECORD AND MONUMENTS FOUND IN A FIELD SURVEY CONDUCTED BY NORTHWEST SURVEY CONSULTANTS . THE TOPOGRAPHY IS BASED ON A DIGITAL ELEVATION MODELS OF THE 2016 CRCOG LIDAR DATA DISTRIBUTED BY NOAA.
2. DATUMS: THE HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD88. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.

Document Use

1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS. BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

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Photovoltaic Installation

MuInite Farms
East Windsor, Connecticut

No.	Revision	Date	Appvd.
1	CSC Comments	11/4/2021	SJK
2	Revised Swale 4	12/28/2021	SJK
3	Revised for Construction	5/12/2022	SJK
4	Revised Panel Layout	5/22/2024	SJK
5	Revised Electrical Layout	4/6/2025	SJK

Designed by DRB | Checked by SJK

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Legend and General Notes

Drawing Number: C-1.0

Sheet 1 of 14

Project Number: 42733.00

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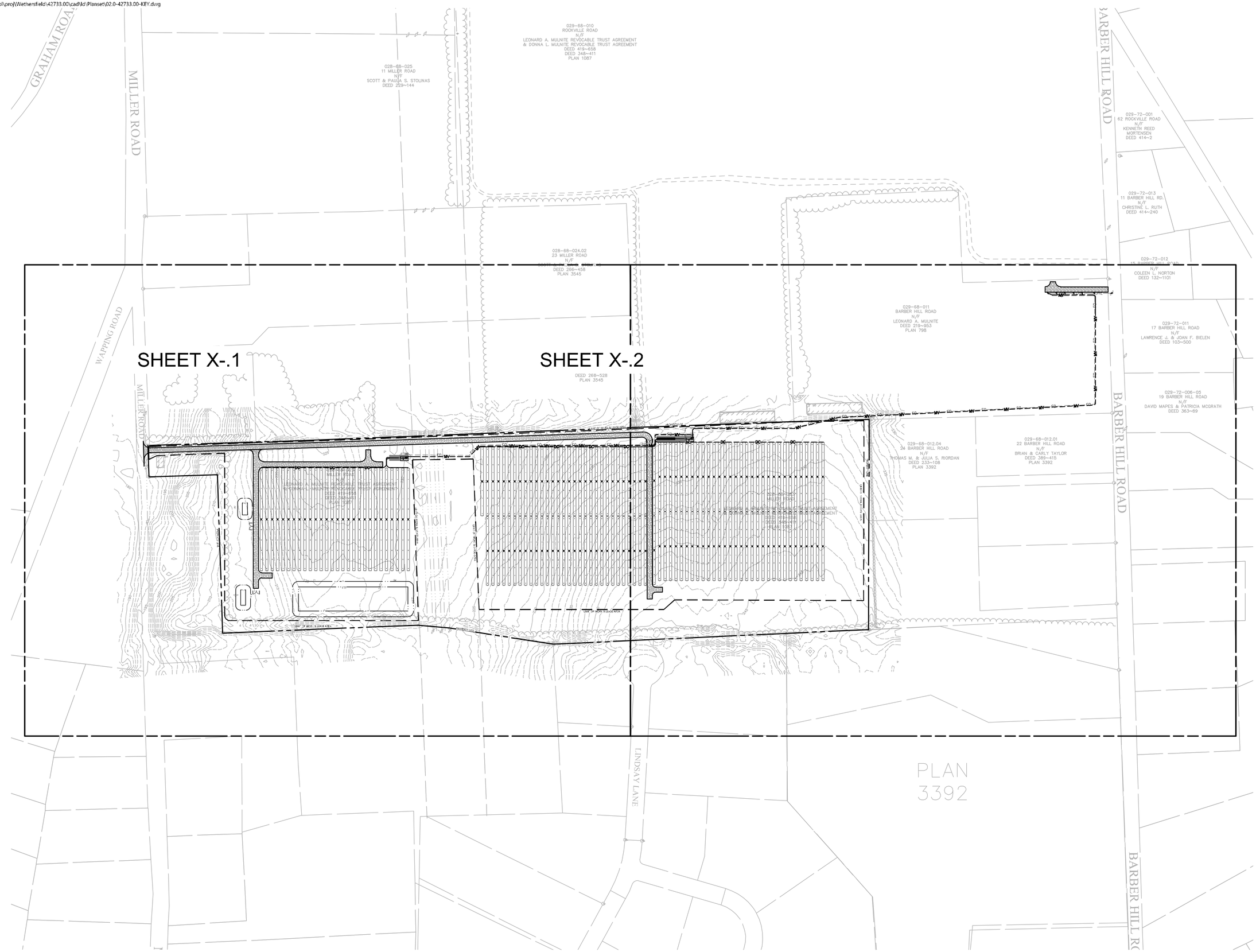

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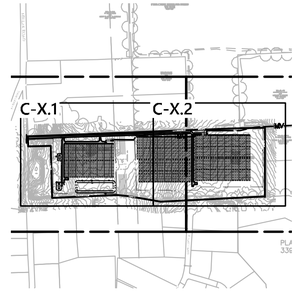

Key

Not To Scale

0 60 120 240 Feet

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Key Plan

Drawing Number

C-2.0

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0 50 100 200 Feet

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Layout and Materials Plan - Overall

Drawing Number
C-3.0

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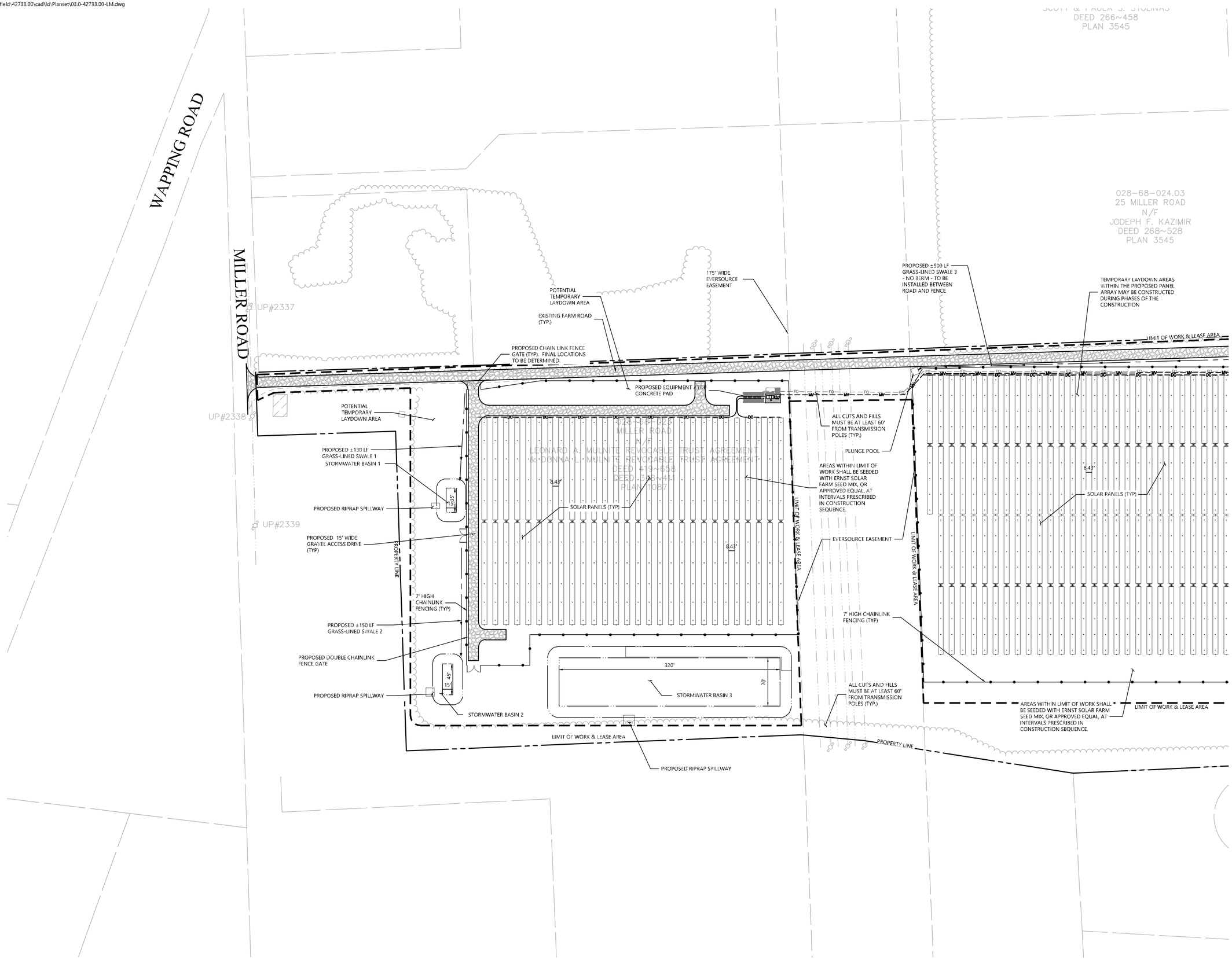

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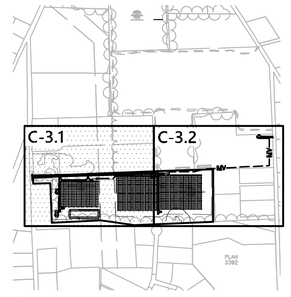

Key

Not To Scale

0 30.000160.0001 120.00Feet

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Layout and Materials Plan 1

Drawing Number

C-3.1

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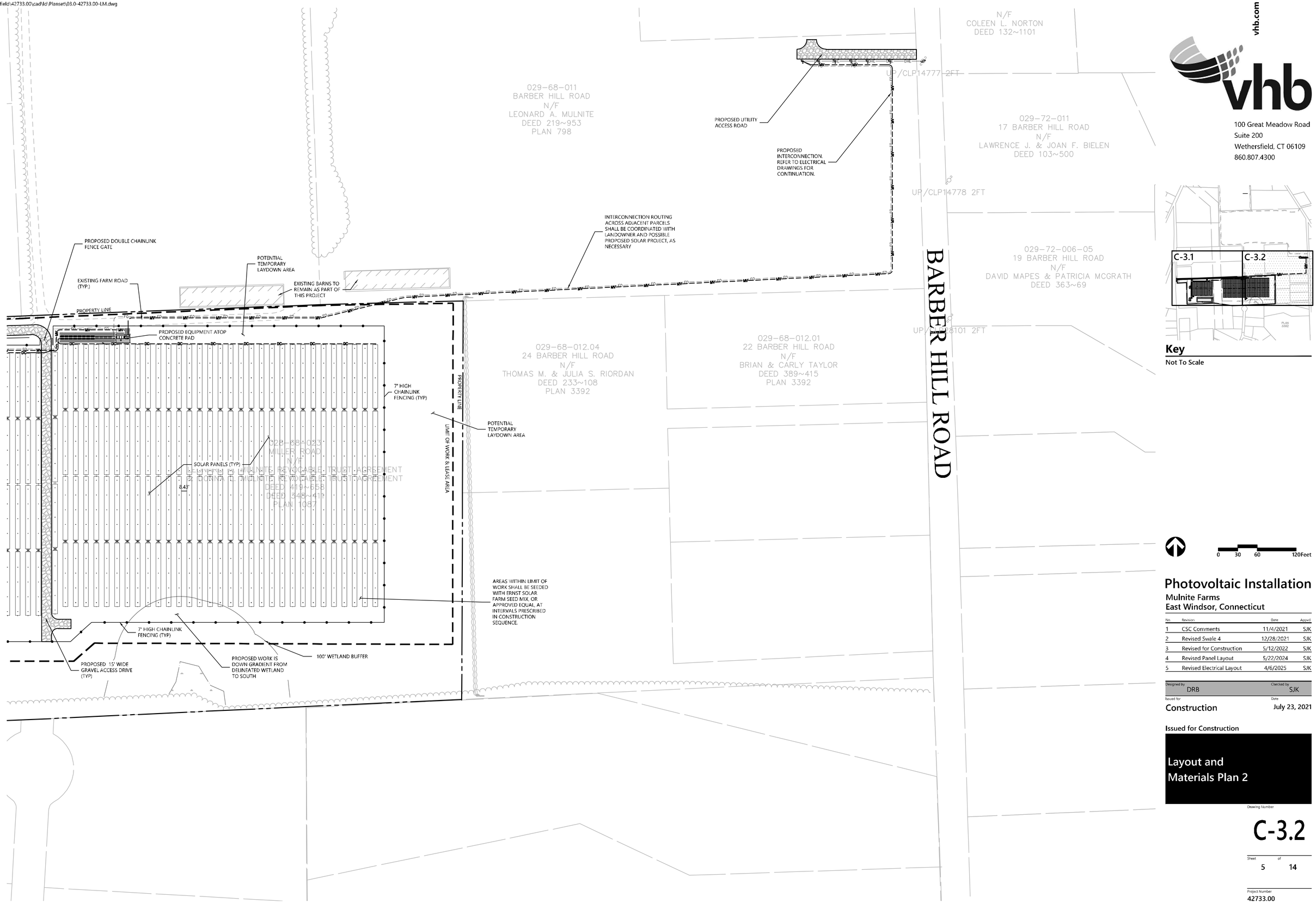

Key
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Layout and Materials Plan 2

Drawing Number
C-3.2

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42733.00

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MILLER ROAD

BARBER HILL ROAD

028-68-025
11 MILLER ROAD
N/F
SCOTT & PAULA S. STOLINAS
DEED 229~144

DEED 419~858
DEED 348~411
PLAN 1087

028-68-024.02
23 MILLER ROAD
N/F
SCOTT & PAULA S. STOLINAS
DEED 266~458
PLAN 3545

028-68-024.03
25 MILLER ROAD
N/F
JODEPH F. KAZIMIR
DEED 288~528
PLAN 3545

029-68-011
BARBER HILL ROAD
N/F
LEONARD A. MULNITE
DEED 219~953
PLAN 798

029-68-012.04
24 BARBER HILL ROAD
N/F
THOMAS M. & JULIA S. RIORDAN
DEED 233~108
PLAN 3392

029-68-012.01
22 BARBER HILL ROAD
N/F
BRIAN & CARLY TAYLOR
DEED 389~415
PLAN 3392

028-68-023
MILLER ROAD
N/F
LEONARD A. MULNITE REVOCABLE TRUST AGREEMENT
& DONNA L. MULNITE REVOCABLE TRUST AGREEMENT
DEED 419~858
DEED 348~411
PLAN 1087

LEONARD A. MULNITE REVOCABLE TRUST AGREEMENT
& DONNA L. MULNITE REVOCABLE TRUST AGREEMENT
DEED 419~858
DEED 348~411
PLAN 1087

N87°44'56"E 971.56'
N88°28'31"E 220.00'
S87°19'25"W 922.44'
N84°38'54"W 306.27'
N81°01'49"W 306.27'
S88°06'36"W 99.99'

75' WIDE CLAIR EASEMENT
SEE PLAN 628

LIMIT OF WORK & LEASE AREA

ARBORVITAE HEDGE

DOGS MAY BE SUBJECT TO WATER RIGHTS PER DEED 288-528

LINDSAY LANE

PLAN 3392

0 50 100 200 Feet

Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

No.	Revision	Date	Appvd.
1	CSC Comments	11/4/2021	SJK
2	Revised Swale 4	12/28/2021	SJK
3	Revised for Construction	5/12/2022	SJK
4	Revised Panel Layout	5/22/2024	SJK
5	Revised Electrical Layout	4/6/2025	SJK

Designed by: DRB
Checked by: SJK

Issued for: Construction
Date: July 23, 2021

Issued for Construction

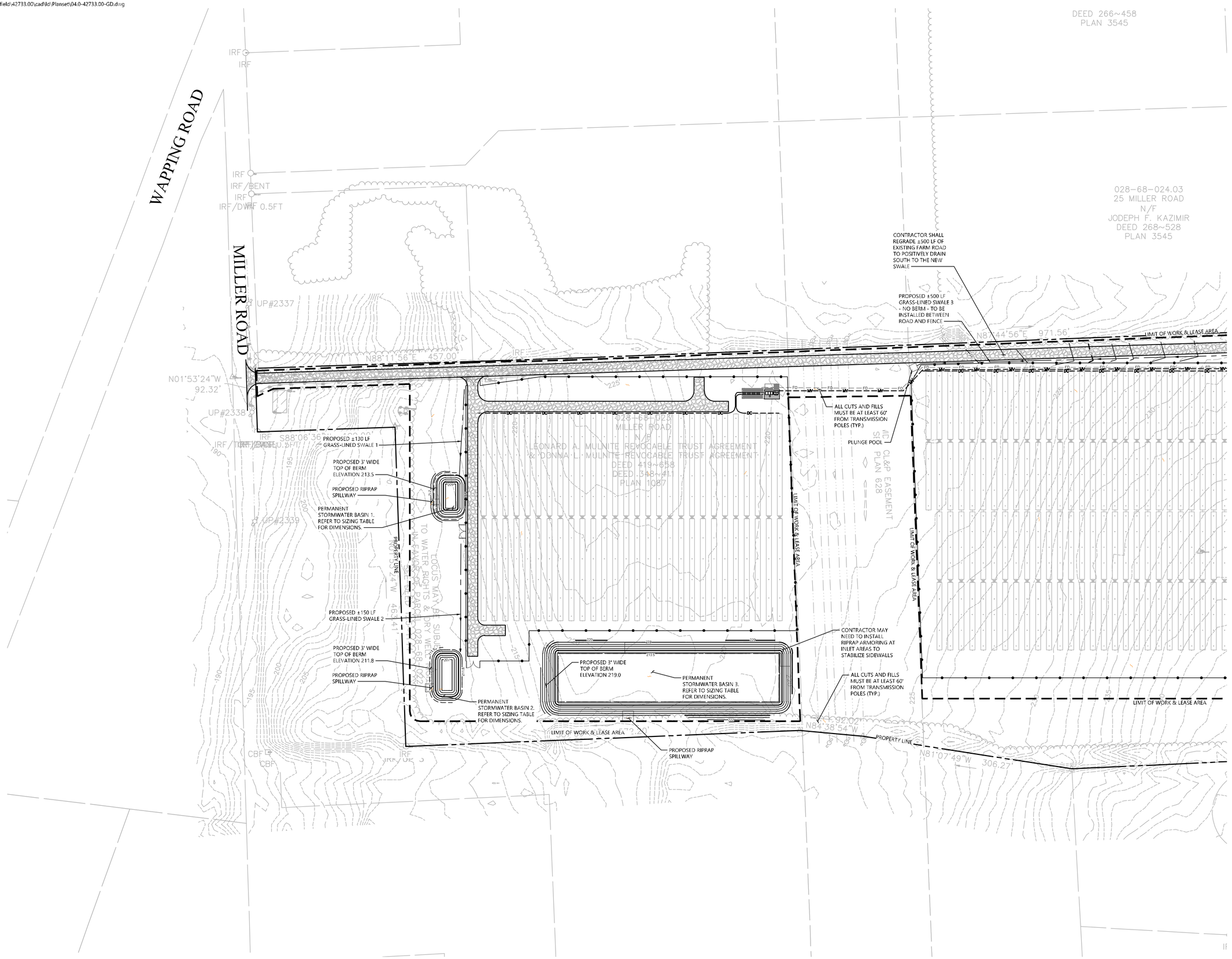
Grading and Drainage Plan - Overall

Drawing Number

C-4.0

Sheet 6 of 14

Project Number
42733.00



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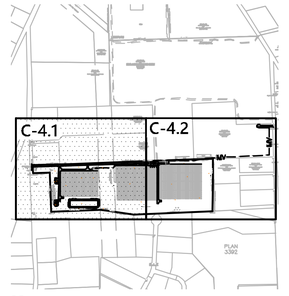

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Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

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Grading and Drainage Plan 1

Drawing Number
C-4.1

Sheet 7 of 14

Project Number
42733.00

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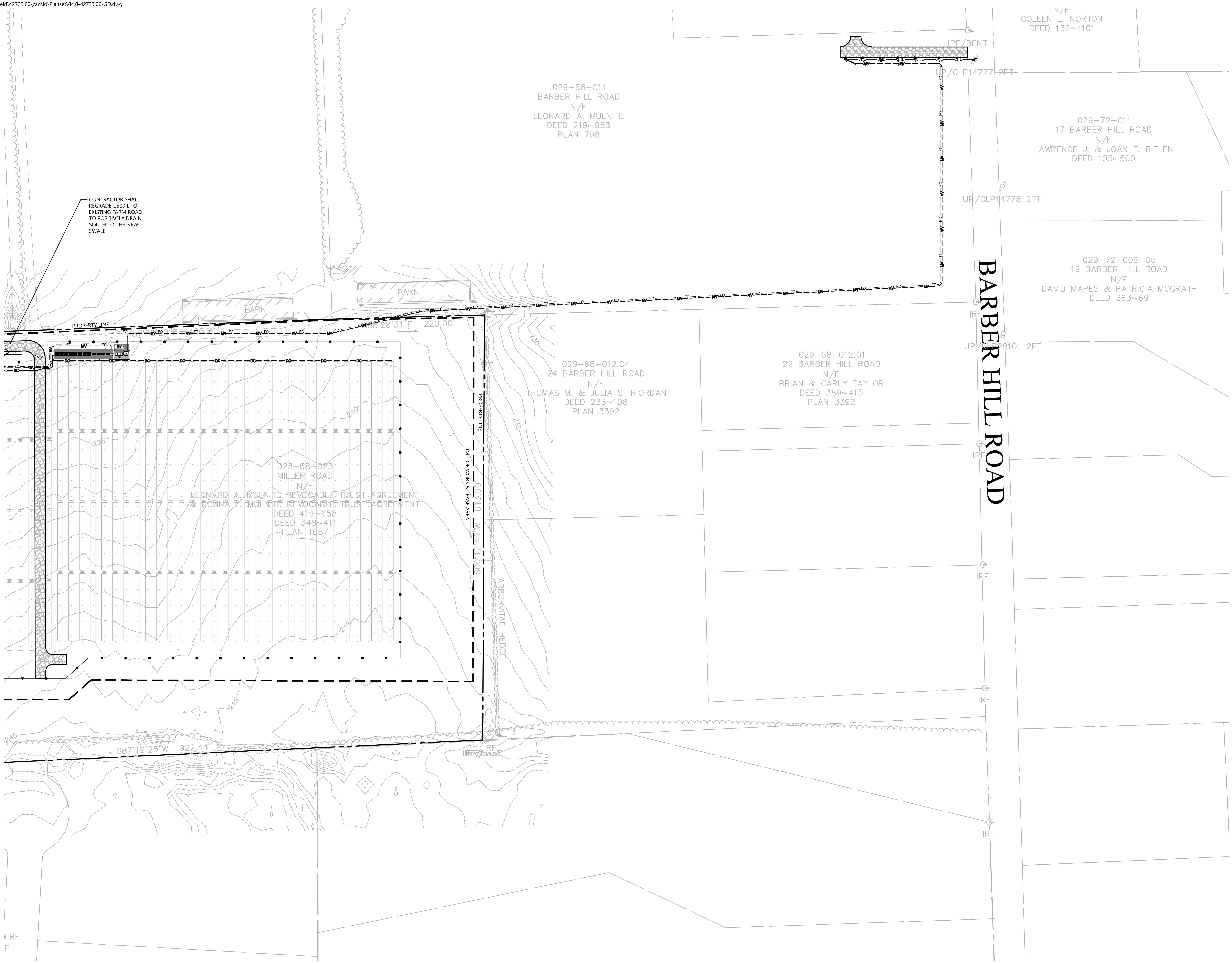

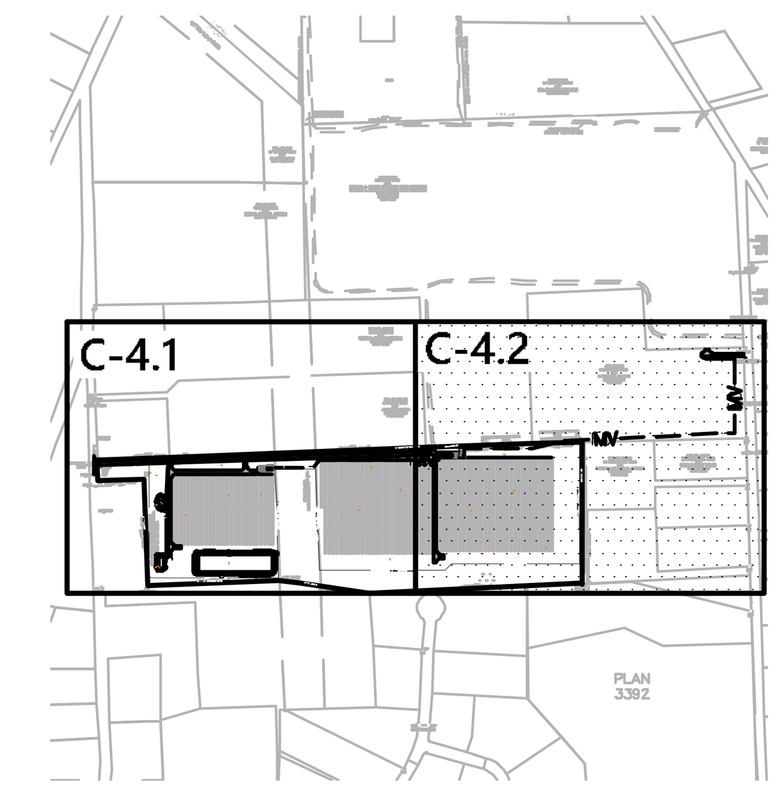

Key
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0 30 60 120Feet

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Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

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Checked by SJK
Issued for Construction
Date July 23, 2021

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Grading and Drainage Plan 2

Drawing Number
C-4.2

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Project Number
42733.00

CONSTRUCTION SEQUENCING

THE CONSTRUCTION PERIOD IS ANTICIPATED TO BE APPROXIMATELY 6 MONTHS UNTIL FINAL STABILIZATION. THE GENERAL CONSTRUCTION NOTES ARE AS FOLLOWS:

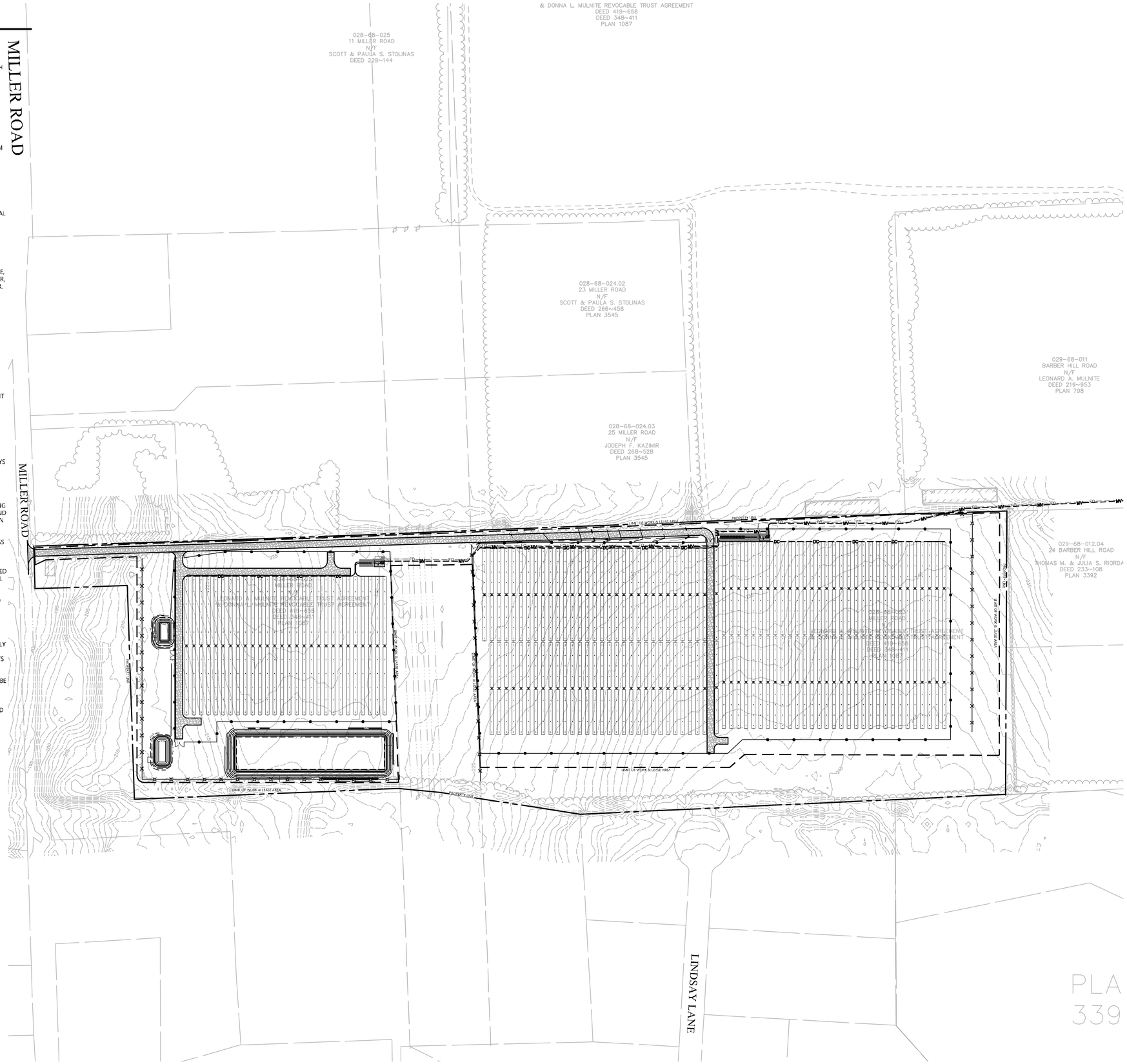
1. THE SITE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT ROADS/HIGHWAYS AND THEIR DRAINAGE SYSTEM, NEIGHBORING PROPERTIES, WETLANDS AND REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT. DESIGNATED ACCESS DRIVES MUST BE USED TO THE MAXIMUM EXTENTS POSSIBLE. IT IS REQUIRED THAT THE SITE CONTRACTOR PERFORM A DAILY INSPECTION OF ALL EROSION AND SEDIMENT CONTROL MEASURES EMPLOYED AT THE SITE.
2. A CTDEEP-APPROVED QUALIFIED INSPECTOR SHALL BE ASSIGNED TO BE RESPONSIBLE FOR PERFORMING INSPECTIONS AND PREPARING REPORTS IN ACCORDANCE WITH SECTION 5(B)(4)(B) OF THE CONSTRUCTION GENERAL PERMIT. THESE INSPECTIONS SHALL TAKE PLACE WEEKLY, AT A MINIMUM, AND SHALL BE REQUIRED WITHIN 24 HOURS OF A RAINFALL EVENT EXCEEDING 0.5 INCHES. THE ENGINEER OF RECORD SHALL BE REQUIRED TO REVIEW AND COUNTER-SIGN THE PREPARED WEEKLY REPORTS. IT IS ALSO ANTICIPATED THAT REPRESENTATIVES FROM CTDEEP AND/OR THE STATE CONSERVATION DISTRICT WILL PERFORM PERIODIC INSPECTIONS.
3. ENGINEER OF RECORD WILL PERFORM MONTHLY PLAN IMPLEMENTATION INSPECTIONS AND PREPARE REPORTS OF THE FINDINGS. THESE INSPECTIONS SHALL LAST A MINIMUM OF THREE (3) MONTHS OR UNTIL THE COMPLETION AND STABILIZATION OF ALL EROSION CONTROL MEASURES AT THE SITE.
4. THROUGHOUT THE COURSE OF THE CONSTRUCTION PROJECT, ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE WARRANTED AT THE DISCRETION OF THE QUALIFIED INSPECTOR AND/OR DESIGN ENGINEER. THESE IMPROVEMENTS MUST BE IMPLEMENTED IN A TIMELY FASHION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT. ADDITIONALLY, AREAS OF PROPOSED COMPACTED NATIVE SOIL ROADS SHALL BE CONVERTED TO STABLE GRAVEL ROADS IF/AS DETERMINED BY THE QUALIFIED INSPECTOR OR ENGINEER OF RECORD.
5. PRIOR TO CONSTRUCTION, THE APPLICANT SHALL PROVIDE THE TOWN OF EAST WINDSOR WITH THE NAME OF CONTACT AND 24-HOUR CONTACT INFORMATION.
6. CONTRACTOR SHALL ADHERE TO 2002 CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL, AS AMENDED.
7. THE CONTRACTOR SHALL HOLD PRE-CONSTRUCTION MEETING(S). ATTENDEES SHALL INCLUDE, BUT NOT BE LIMITED TO, REPRESENTATIVES OF THE GENERAL CONTRACTOR, SITE CONTRACTOR, CTDEEP, TOWN OF EAST WINDSOR, ENGINEER OF RECORD, AND QUALIFIED SWPPP INSPECTOR.
8. THE CONTRACTOR SHALL CONTACT CALL-BEFORE-YOU-DIG (1-800-922-4455) PRIOR TO ENGAGING IN ANY EXCAVATION ACTIVITIES AT THE SITE.
9. THE CONTRACTOR SHALL NOTIFY THE TOWN OF EAST WINDSOR AGENT, ZONING ENFORCEMENT OFFICER, AND ENGINEERING DEPARTMENT, 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.
10. NO CONSTRUCTION OF SITE IMPROVEMENTS MAY BEGIN UNTIL THE PROPER EROSION CONTROL MEASURES SERVING THE AREA TO BE DISTURBED ARE IN PLACE.
11. ANTICIPATED WORK HOURS WILL BE BETWEEN 6:30 AM AND 5:00 PM.

PRE-CONSTRUCTION SITE PROTECTION SEQUENCE

1. ACCESS ROADS SHALL BE DESIGNATED AS EARLY AS FEASIBLE AND USED PRIMARILY FOR CONSTRUCTION TRAFFIC.
2. INSTALL EROSION AND SEDIMENT CONTROLS FOLLOWING THE CT GUIDELINES AND MANUFACTURER'S DIRECTIONS. DURING CONSTRUCTION, THE CONTRACTOR SHALL INSTALL MEASURES AS REQUIRED BY THE ENGINEER OF RECORD OR QUALIFIED INSPECTOR, TO PREVENT SEDIMENT-LADEN RUNOFF FROM REACHING WETLANDS OR DISCHARGING OFFSITE.
3. INSTALL STORMWATER BASINS AND SEDIMENT TRAPS IN ACCORDANCE WITH THE APPROVED SITE-SPECIFIC SWPCP AND CT GUIDELINES. THE ENGINEER OF RECORD SHALL INSPECT FEATURES TO CONFIRM REQUIRED STORAGE CAPACITIES ARE PROVIDED AND THAT OUTLETS AND/OR SPILLWAYS ARE CONSTRUCTED CORRECTLY. DISCHARGE AREAS BELOW OUTFALLS MUST BE INSPECTED TO CONFIRM FLOW WILL BE OVER STABLE GROUND AND SHEET FLOW IS ENCOURAGED. IF DISTURBED SOILS ARE PRESENT, THE ENGINEER OF RECORD TO PROVIDE CORRECT MEASURES TO ADDRESS CONDITION.
4. SEED AND PROTECT DISTURBED SOILS AROUND SEDIMENT TRAPS AND BASINS WITHIN 14 DAYS OF COMPLETION. SECURE SEED WITH A THERMALLY-TREATED BONDED FIBER MATRIX (BFM) APPLIED FOLLOWING MANUFACTURER'S SPECIFICATIONS FOR USE AT SPECIFIED APPLICATION RATES. AN ANIONIC POLYACRYLAMIDE PRODUCT MAY BE INCLUDED WITH THE TACKIFIER TO PROMOTE SOIL STABILITY. ALL OTHER AMENDMENTS SHOULD BE PRESCRIBED BASED ON THE RESULT OF SOIL TESTS.
5. PERFORM MASS EARTHWORK ON THE SITE. MASS EARTHWORK SHALL ONLY MEAN REGRADING TO MEET THE PROPOSED GRADING DEPICTED ON THE PLANS. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FROM AREAS PROPOSED FOR REGRADING. EXCESS SOIL WHICH IS NOT REUSED IN PROPOSED SITE GRADING AS DEPICTED ON PLANS SHALL BE HANDLED PER THE OWNER.
6. TOPSOIL SHALL BE REPLACED TO 3" MINIMUM DEPTH OVER REGRADED AREAS UPON COMPLETION OF MASS EARTHWORK ACTIVITIES AND AREAS WHICH WERE DISTURBED BY MASS EARTHWORK OPERATIONS SHALL BE RESEEDED WITHIN 14 DAYS OF COMPLETION.
7. THROUGHOUT CONSTRUCTION, THE CONTRACTOR SHALL ADDRESS ONGOING EROSION PROBLEMS USING TEMPORARY DIVERSIONS AND FILLING AND GRADING GULLIES. TRACK GULLIES UP AND DOWN SLOPE AND HYDROSEED WITH A THERMALLY-TREATED WOOD BONDED FIBER MATRIX (BFM) MULCH WITH TACKIFIER. A STAPLED BIODEGRADABLE EROSION CONTROL BLANKET WITHOUT MONOFILAMENT MESH IS AN ACCEPTABLE ALTERNATIVE FOR HYDROSEED AND BFM.
8. UPON COMPLETION OF THIS CONSTRUCTION PHASE, ALL DISTURBED AREAS SHALL BE SEEDED WITH TACKIFIER AND CONSTRUCTION SEQUENCE MAY ONLY BEGIN IN AREAS DISPLAYING ADEQUATE VEGETATION WITHIN PROPOSED ARRAY AREA.

CONSTRUCTION SEQUENCE

1. INSTALL PILES AND/OR GROUND SCREWS FOR SOLAR PANEL RACKING.
2. THE INSTALLATION OF RACKING SHALL FOLLOW THE FOUNDATION INSTALLATION BY ROUGHLY ONE WEEK STARTING FROM THE SAME POINT.
3. RESEED AND REGRADE ALL AREAS DISTURBED BY CONSTRUCTION TRAFFIC WITHIN THE ARRAYS WHERE RACKS ARE INSTALLED AS EARLY AS POSSIBLE. RUTS AND RILLS SHALL BE SMOOTHED AND GRADED AS DISCOVERED.
4. INSTALL SOLAR PANEL MODULES IN THE RACKING. MUCH OF THIS WORK IS ANTICIPATED TO BE PERFORMED BY HAND AND LIGHT CONSTRUCTION EQUIPMENT WHICH WILL CAUSE MINIMAL DISTURBANCE COMPARED TO THE USE OF HEAVY EQUIPMENT. DESIGNATED ACCESS ROADS SHALL STILL BE USED TO THE MAXIMUM EXTENTS POSSIBLE.
5. UPON COMPLETION OF CONSTRUCTION, RE-SEED ALL DISTURBED AREAS WITHIN 14 DAYS AND PREVENT VEHICULAR TRAFFICKING OVER THESE AREAS. INSTALL FINAL LANDSCAPING.
6. AFTER SITE IS STABILIZED, AND AFTER INSPECTION BY DESIGN ENGINEER, OR OTHER OWNER'S REPRESENTATIVE, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. ENTIRE SITE SHALL BE CHECKED FOR AND CLEANED OF SEDIMENT AS NEEDED.



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0 50 99.9999 199.9998 Feet

Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

No.	Revision	Date	Appvd
1	CSC Comments	11/4/2021	SJK
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Designed by: DRB
Checked by: SJK
Issued for: Construction
Date: July 23, 2021

Issued for Construction

Erosion and Sediment Control Plan - Overall

Drawing Number
C-5.0

Sheet 9 of 14

Project Number
42733.00

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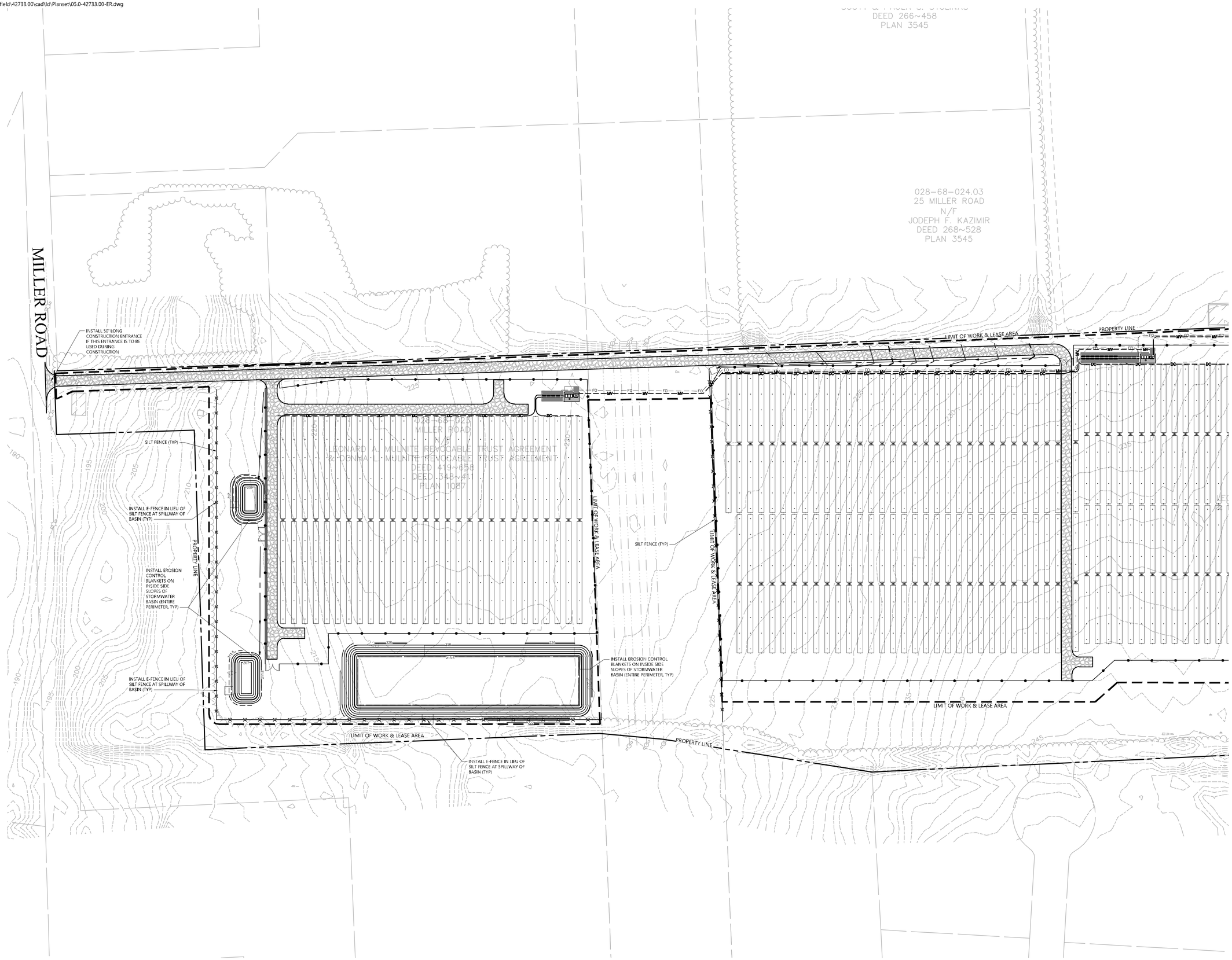

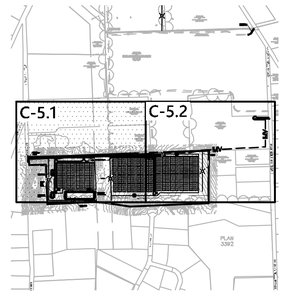

Key

Not To Scale

0 30 60 120.00 Feet

Photovoltaic Installation

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East Windsor, Connecticut

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Erosion and Sediment Control Plan 1

Drawing Number

C-5.1

Sheet 10 of 14

Project Number
42733.00

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029-68-011
BARBER HILL ROAD
N/F
LEONARD A. MULNITE
DEED 219~953
PLAN 798

15 BARBER HILL ROAD
N/F
COLEEN L. NORTON
DEED 132~1101

029-72-011
17 BARBER HILL ROAD
N/F
LAWRENCE J. & JOAN F. BIELEN
DEED 103~500

029-72-006-05
19 BARBER HILL ROAD
N/F
DAVID MAPES & PATRICIA MCGRATH
DEED 363~69

029-68-012.04
24 BARBER HILL ROAD
N/F
THOMAS M. & JULIA S. RIORDAN
DEED 233~108
PLAN 3392

029-68-012.01
22 BARBER HILL ROAD
N/F
BRIAN & CARLY TAYLOR
DEED 389~415
PLAN 3392

029-68-008
MILLER ROAD
N/F
LEONARD A. MULNITE REVOCABLE TRUST AGREEMENT
& DONNA Z. MULNITE REVOCABLE TRUST AGREEMENT
DEED 419~558
DEED 442~44
PLAN 1087

PROPERTY LINE

SILT FENCE (TYP)

PROPERTY LINE

LIMIT OF WORK & EASEMENT AREA

BARBER HILL ROAD

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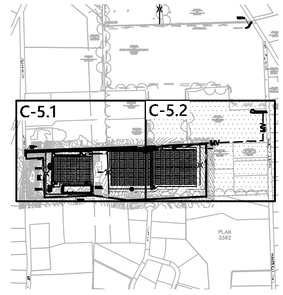

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Erosion and Sediment Control Plan 2

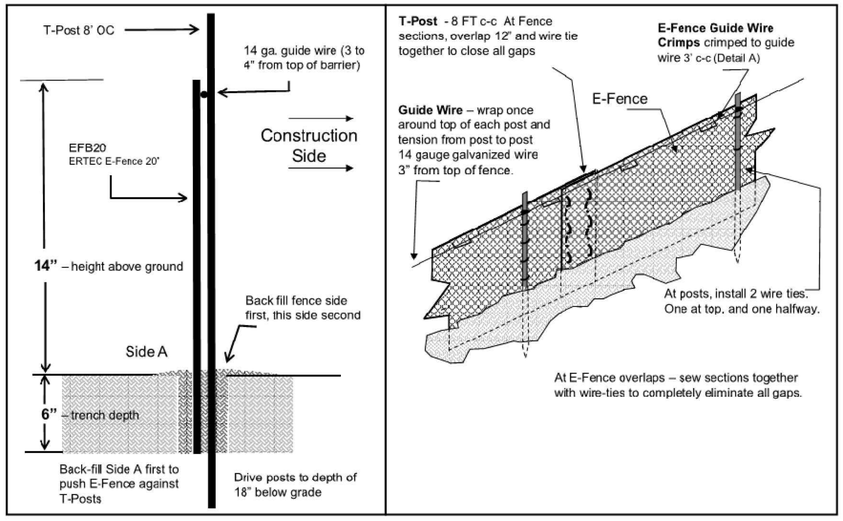
Drawing Number
C-5.2

Sheet 11 of 14

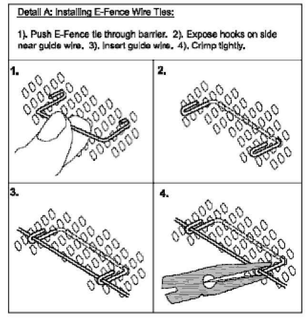
Project Number
42733.00

E-Fence DETAILS – Wildlife Exclusion - WPT

E-Fence™ (Patent #US8402630, other patents pending)



E-Fence DETAILS – Guidewire Crimp



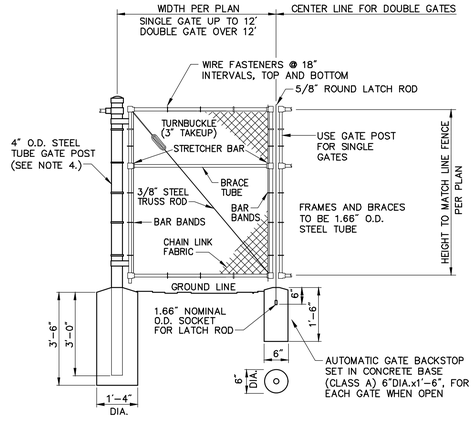
E-Fence™ DETAILS – Wildlife Exclusion

Installation Notes:

1. Excavate a trench a minimum of 4" wide and a minimum of 5" deep.
2. T-posts shall be a minimum of 0.95 lbs/ft. T-posts shall be driven a minimum 18" deep into the ground 8' centers
3. Insert barrier material into trench and attach to post in two places: 1) at 3" below top of fence and at 2) mid-height
4. At 3 inches from top of fence (above wire tie), wrap 14 gauge galvanized wire once around each T-post and pull the guide wire from post to post, wrap, secure and pull wire tight between each post.
5. At segment overlaps (roll length 100 or 150 LF), overlap segments a minimum of 12". Eliminate all gaps by tying sections together with tie wire in two vertical rows, as shown.
6. Push E-Fence Guide Wire Crimps through the E-Fence and crimp the ties to the guide wire on the other side of the fence (two crimps per tie) at 3' intervals, as illustrated in Detail A of the installation guidelines. Crimp to the guide-wire securely.
7. E-Fence must be installed in continuous lengths (100 or 150 feet rolls). Do not cut segments into shorter lengths unless necessary due to sudden changes in elevation.
8. Backfill trench with trench spoils. Backfill from E-Fence side of posts first so that E-Fence is pushed up against T-posts. Back fill other side to complete backfill.

E-Fence Installation Details

N.T.S. Source: Ertec Environmental Systems



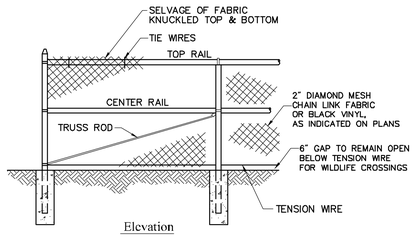
Notes:

1. CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
2. GATE POST BASE–PORTLAND CEMENT CONCRETE (3000 PSI).
3. FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL OR BLACK VINYL (AS INDICATED ON PLANS) PER SPECIFICATIONS.
4. GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

Chain Link Fence Gate

6/08

N.T.S. Source: VHB LD_482



Note:

1. MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.
2. CHAIN LINK FENCE SHALL BE FITTED WITH FITTED WITH PRIVACY SLATS IN ACCORDANCE WITH SITE PLANS.

7' Chain Link Fence

6/08

N.T.S. Source: VHB LD_480

PHOTOVOLTAIC INSTALLATION
Site Location: Mulnite Farms, East Windsor, CT 06016
Owner: Greenskies Clean Energy, LLC
Attn: Steven Martineau
127 Washington Avenue, West Bldg, Lower Level
North Haven, CT 06473
IN CASE OF EMERGENCY CALL 911
EAST WINDSOR POLICE DEPARTMENT - (860) 292-8240

Notes:

1. THE SITE FACILITY SIGN IS A DRAFT SHOWING THE MINIMUM AMOUNT OF INFORMATION THAT WILL BE PROVIDED. SIGN WILL BE 18" X 24".
2. ALL SIGNS WILL BE MOUNTED ONTO THE CHAIN LINK FENCE.

Danger and Site Facility Signs

1/16

N.T.S. Source: VHB

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Photovoltaic Installation

Mulnite Farms
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Site Details 1

Drawing Number: C-6.1

Sheet 12 of 14

Project Number: 42733.00

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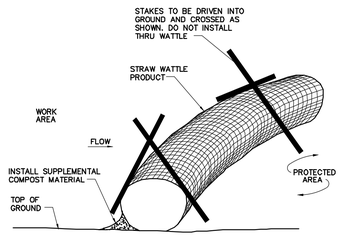
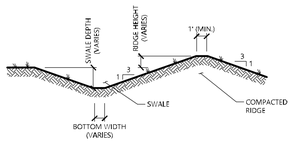


Straw Wattle Installation

8/12

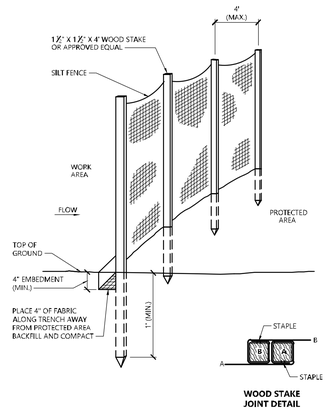
N.T.S. Source: VHB LD_658



NOTE:
1. ALL SIDE SLOPES SHALL NOT EXCEED 3:1
2. REFER TO "DIVERSION SWALE SIZING" TABLE FOR SELECTION OF LINING MATERIAL TO BE INSTALLED OVER ENTIRE SWALE AREA.
3. REFER TO "DIVERSION SWALE SIZING" TABLE FOR VARIABLE SIZING.
4.THE INTENT IS TO USE THE MATERIAL EXCAVATED FROM THE SWALE TO CONSTRUCT THE RIDGE.

Diversion Swale

N.T.S. Source: VHB

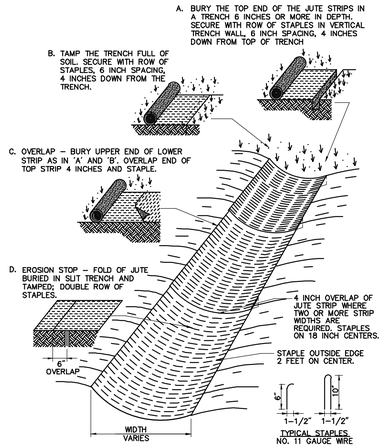


WOOD STAKE JOINT DETAIL

Silt Fence Barrier

1/16

N.T.S. Source: VHB LD_650

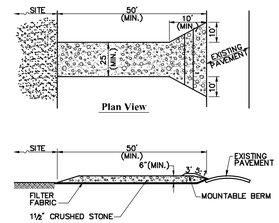


* INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS
** MATERIAL MUST BE APPROVED BY DESIGN ENGINEER

Erosion Control Blanket (EBC) Swale Installation

6/08

N.T.S. Source: VHB LD_681



Plan View

Cross-section

Notes:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Stabilized Construction Exit

6/08

N.T.S. Source: VHB LD_682

Plan View

Cross Section

Plunge Pool

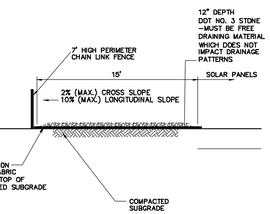
N.T.S. Source: VHB

Basin Cross Section

NOTE:
1. ALL SIDE SLOPES SHALL NOT EXCEED 3:1
2. TOP OF EMBANKMENT SHALL BE 2' (MIN) WIDTH AND 1' (MIN.) ABOVE TOP OF SPILLWAY.
3. SIDE SLOPES OF EMBANKMENT SHALL BE STABILIZED BY TEMPORARY SEEDING OR EROSION CONTROL BLANKETS AS DIRECTED BY THE ENGINEER.
4. REFER TO "PERMANENT STORMWATER BASIN SIZING" TABLE FOR VARIABLE SIZING.
5. PERIMETER SILT FENCE SHALL BE REMOVED IMMEDIATELY DOWNSTREAM FROM SPILLWAY AND REPLACED WITH E-FENCE.

Permanent Stormwater Basin

N.T.S. Source: VHB

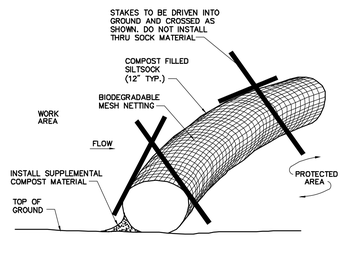


Notes:

1. CRUSHED STONE SHALL BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION.

Perimeter Access Cross Section

N.T.S. Source: VHB



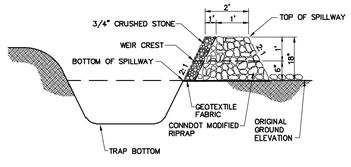
Notes:

1. SILTSOCK SHALL BE 12" DIAMETER FILTREXX SILTSOXX, OR APPROVED EQUAL.
2. SILTSOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Compost Filter Sock (CFS)

8/12

N.T.S. Source: VHB LD_658

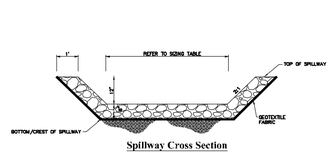


Trap Cross Section

NOTE:
1. ALL SIDE SLOPES SHALL NOT EXCEED 3:1
2. SIDE SLOPES OF EMBANKMENT SHALL BE STABILIZED BY TEMPORARY SEEDING OR EROSION CONTROL BLANKETS AS DIRECTED BY THE ENGINEER.
3. TRAP SHALL BE DRAINED AND CLEANED OF SEDIMENT ONCE SEDIMENT IS > 1" ABOVE TRAP BOTTOM.

Sediment Trap (TST)

N.T.S. Source: VHB



Spillway Cross Section

NOTE:
1. ALL SIDE SLOPES SHALL NOT EXCEED 2:1
2. TOP OF EMBANKMENT SHALL BE 2' (MIN) WIDTH AND 1' (MIN.) ABOVE TOP OF SPILLWAY.
3. SIDE SLOPES OF EMBANKMENT SHALL BE STABILIZED BY TEMPORARY SEEDING OR EROSION CONTROL BLANKETS AS DIRECTED BY THE ENGINEER.
4. REFER TO "PERMANENT STORMWATER BASIN SIZING" TABLE FOR VARIABLE SIZING.
5. PERIMETER SILT FENCE SHALL BE REMOVED IMMEDIATELY DOWNSTREAM FROM SPILLWAY.

Stormwater Basin Spillway

N.T.S. Source: VHB

PERMANENT STORMWATER BASIN SIZING

NUMBER	BASIN TYPE	LENGTH AT BASIN BOTTOM (TOE OF SLOPE), FT	WIDTH AT BASIN BOTTOM (TOE OF SLOPE), FT	SIDE SLOPES	BOTTOM ELEVATION, FT	ELEVATION OF BOTTOM/CREST OF SPILLWAY, FT	SPILLWAY WIDTH AT BASE, FT	MINIMUM TOP OF BERM ELEVATION, FT
1	INFILTRATION	15	35	3:1	209.0	212.0	8	213.5
2	INFILTRATION	15	45	3:1	207.8	211.0	12	211.8
3	INFILTRATION	70	320	3:1	213.5	218.0	16	219.0

DIVERSION SWALE SIZING

NAME	APPROXIMATE TRIBUTARY AREA, AC	APROXIMATE LENGTH, FT	BOTTOM WIDTH, FT	SIDE SLOPES	SWALE DEPTH, FT	LINING MATERIAL
SWALE 1	0.5	130	1	3:1	1	ECB
SWALE 2	0.7	150	1	3:1	1	ECB
SWALE 3*	8.5	490	0	2:1	1	ECB

* SWALE 3 IS NOT SIZED TO ADEQUATELY CONVEY LARGER STORM EVENTS - SHALL BE INSTALLED TO MAXIMUM WIDTH CONSTRUCTIBLE BETWEEN SOUTHERN EDGE OF ACCESS ROAD AND FENCE LINE

Sizing Tables for Temporary & Permanent Stormwater Features

N.T.S. Source: VHB

Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

No.	Revision	Date	Appvd.
1	CSC Comments	11/4/2021	SJK
2	Revised Swale 4	12/28/2021	SJK
3	Revised for Construction	5/12/2022	SJK
4	Revised Panel Layout	5/22/2024	SJK
5	Revised Electrical Layout	4/6/2025	SJK

Designed by: DRB
Checked by: SJK

Issued for: Construction
Date: July 23, 2021

Issued for Construction

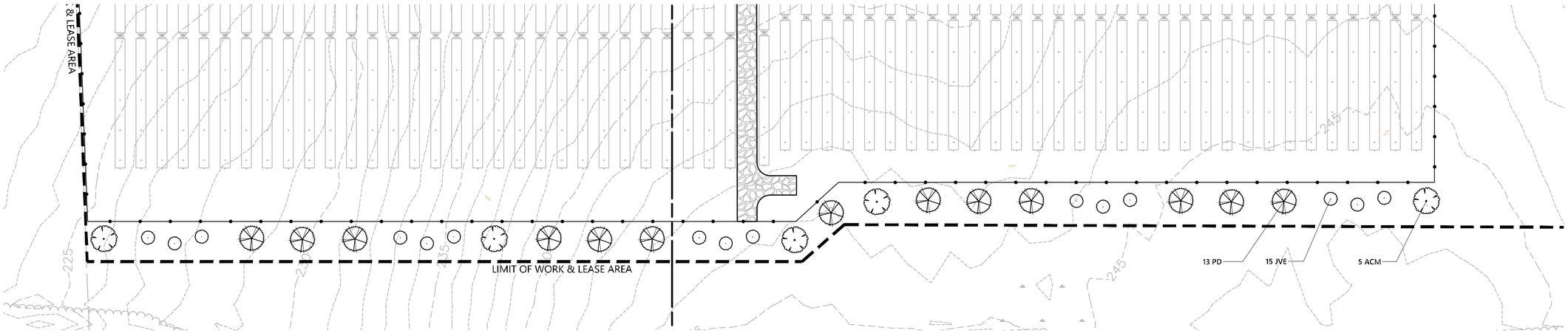
Site Details 2

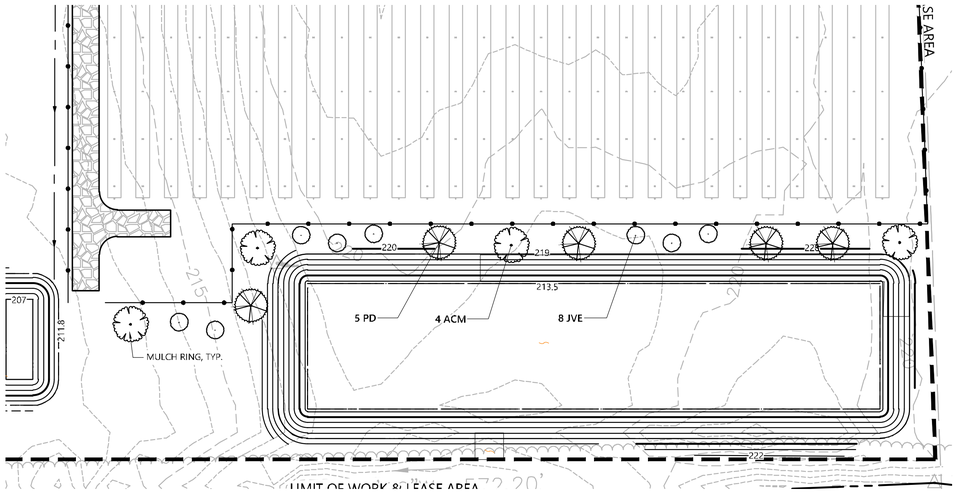
Drawing Number

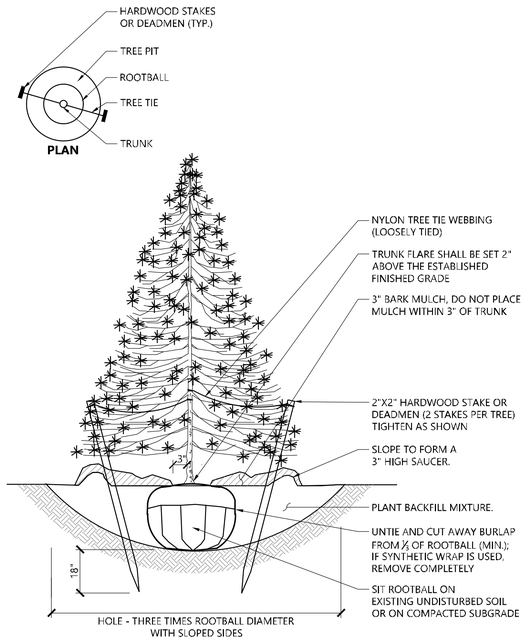
C-6.2

Sheet 13 of 14

Project Number
42733.00



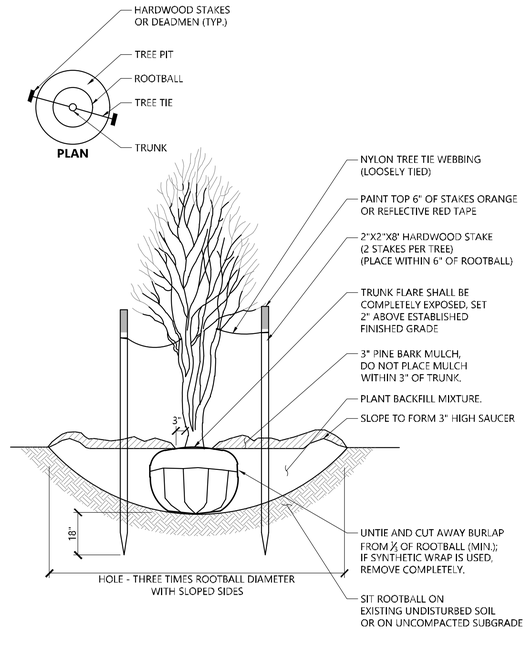




Evergreen Tree Planting

9/21

N.T.S. Source: VHB LD_604



Multistem Tree Planting

9/21

N.T.S. Source: VHB LD_606

Planting Notes

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
4. A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
10. AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
11. ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
12. THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Plant Maintenance Notes

1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
5. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
EVERGREEN TREES					
	JVE	23	Juniperus virginiana 'Emerald Sentinel'	Emerald Sentinel Eastern Red Cedar	6 - 7` HT.
	PD	18	Picea glauca `Densata`	Black Hills White Spruce	5 - 6` HT.
FLOWERING TREES					
	ACM	9	Amelanchier canadensis	Canadian Serviceberry Multi-Stem	5 - 6` HT./Multi-Stem

vhb.com
vhb
100 Great Meadow Road
Suite 200
Wethersfield, CT 06109
860.807.4300

0 20 40 80 Feet

Photovoltaic Installation

Mulnite Farms
East Windsor, Connecticut

No.	Revision	Date	Appvd.
1	CSC Comments	11/4/2021	SJK
2	Revised Swale 4	12/28/2021	SJK
3	Revised for Construction	5/12/2022	SJK
4	Revised Panel Layout	5/22/2024	SJK
5	Revised Electrical Layout	4/6/2025	SJK

Designed by: DRB | Checked by: SJK

Issued for: Construction | Date: July 23, 2021

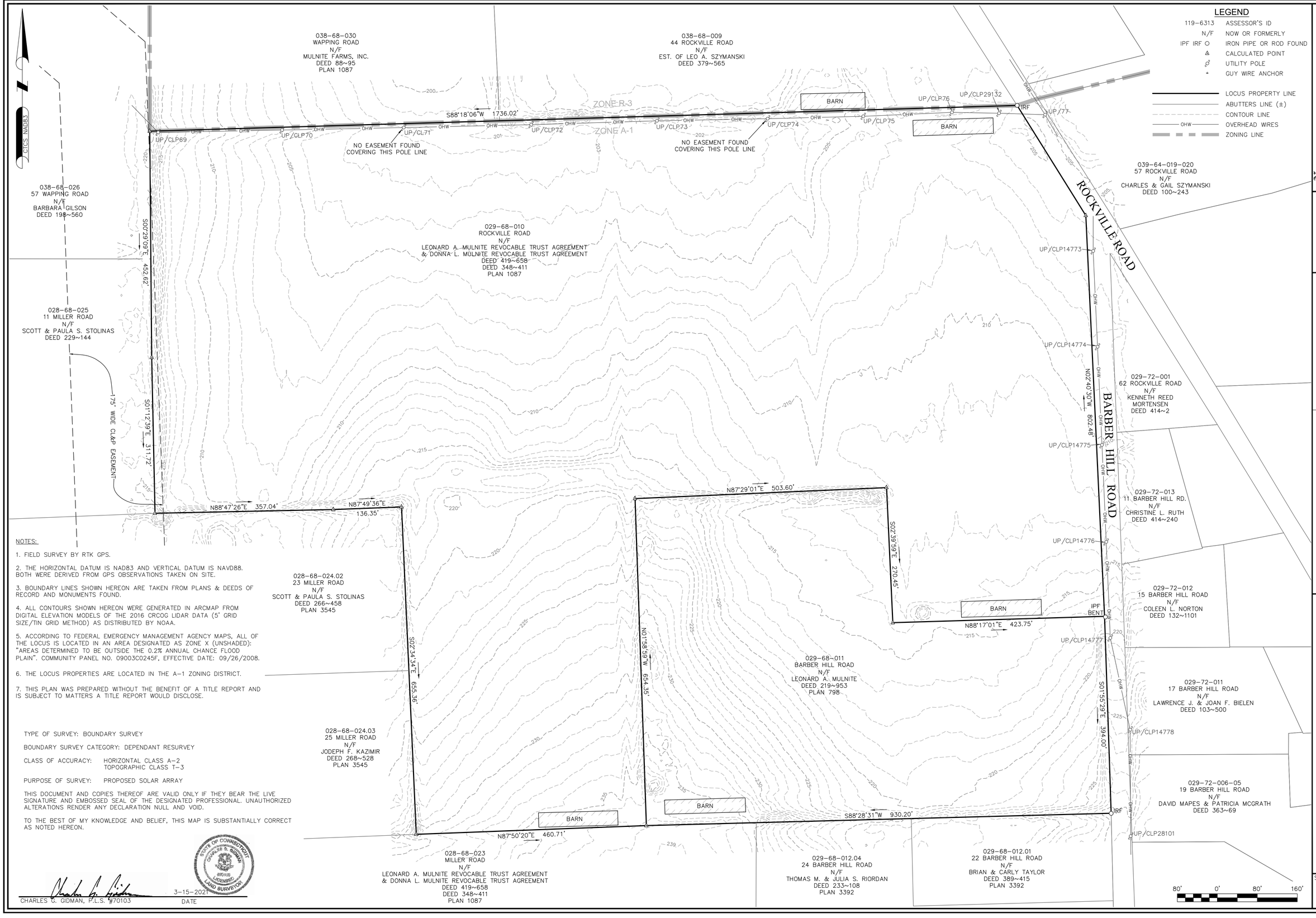
Issued for Construction

Landscape Plan

Drawing Number: C-7.0

Sheet 14 of 14

Project Number: 42733.00



LEGEND

119-6313	ASSESSOR'S ID
N/F	NOW OR FORMERLY
IPF IRF ○	IRON PIPE OR ROD FOUND
△	CALCULATED POINT
	UTILITY POLE
+	GUY WIRE ANCHOR
	LOCUS PROPERTY LINE
	ABUTTERS LINE (±)
	CONTOUR LINE
OHW	OVERHEAD WIRES
	ZONING LINE

NOTES:

1. FIELD SURVEY BY RTK GPS.

2. THE HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD88. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.

3. BOUNDARY LINES SHOWN HEREON ARE TAKEN FROM PLANS & DEEDS OF RECORD AND MONUMENTS FOUND.

4. ALL CONTOURS SHOWN HEREON WERE GENERATED IN ARCMAP FROM DIGITAL ELEVATION MODELS OF THE 2016 CRCOG LIDAR DATA (5' GRID SIZE/TIN GRID METHOD) AS DISTRIBUTED BY NOAA.

5. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, ALL OF THE LOCUS IS LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED): "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN". COMMUNITY PANEL NO. 09003C0245F, EFFECTIVE DATE: 09/26/2008.

6. THE LOCUS PROPERTIES ARE LOCATED IN THE A-1 ZONING DISTRICT.

7. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO MATTERS A TITLE REPORT WOULD DISCLOSE.

TYPE OF SURVEY: BOUNDARY SURVEY

BOUNDARY SURVEY CATEGORY: DEPENDANT RESURVEY

CLASS OF ACCURACY: HORIZONTAL CLASS A-2
TOPOGRAPHIC CLASS T-3

PURPOSE OF SURVEY: PROPOSED SOLAR ARRAY

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TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

STATE OF CONNECTICUT · CHARLES G. GIDMAN · 970105 · LICENSED LAND SURVEYOR

CHARLES G. GIDMAN, P.L.S. #70103 — 3-15-2021 DATE

NORTHEAST SURVEY CONSULTANTS
116 PLEASANT ST. SUITE 302
P.O. BOX 109
EASTHAMPTON, MA 01027
(413) 203-5144

BOUNDARY SURVEY & LIDAR CONTOURS

ENGINEER:	–
DESIGN:	–
HORZ. SCALE:	1"=80'
VERT. SCALE:	–
DATE:	3-15-2021
SURVEYOR:	
DRAFTING:	
FIELD WORK:	
PROJECT NUMBER:	19-119
DRAWING NAME:	19-119.DWG

CGG JDG JED CRC

PLAN OF LAND IN EAST WINDSOR, CT

PREPARED FOR

GREENSKIES RENEWABLE ENERGY

SHEET NO. 1 OF 1

LEGEND

038-68-030	ASSESSOR'S ID
N/F	NOW OR FORMERLY
IPF IRF ○	IRON PIPE OR ROD FOUND
CBF ⊡	CONC. BOUND FOUND
△	CALCULATED POINT
	UTILITY POLE
	LOCUS PROPERTY LINE
	ABUTTERS LINE (±)
	EASEMENT LINE
	CONTOUR LINE
OHW	OVERHEAD WIRES
	ZONING LINE
	TREE LINE

CTCS NAD83

WAPPING ROAD

ROCKVILLE ROAD

IRF

UP#2068

UP#2067

OHW

N48°21'48"E 537.04'

TREE HEDGE ALONG BOUNDARY

S31°47'47"E 320.21'

038-68-031
17 WAPPING ROAD
N/F
TAMERA GREEN LLC
DEED: 404~209
PLAN: 2138

FIELD

038-68-003.02
10 ROCKVILLE ROAD
N/F
DAVID THOMAS &
BRENDA K. CROCKETT
DEED: 237~597
PLAN: 3452

S31°46'48"E 139.77'

S32°35'08"E 145.24'

N32°21'13"E 171.61'

N74°11'01"W 100.00'

N25°01'29"E 75.00'

WOODED

BARN

FARM ROAD

039-68-003
10 ROCKVILLE ROAD
N/F
SANDRA E. CROCKETT LIVING TRUST
DEED: 223~537
PLAN: 3452

038-68-029
33 WAPPING ROAD
N/F
JOHN F. GILSON
DEED: 90~652

N74°11'01"W 199.75'

EDGE OF FIELD EXTENDS
3'± OVER PROPERTY LINE

N28°19'19"E 39.63'

S32°35'08"E 534.05'

N31°48'09"W 342.97'

038-68-028
39 WAPPING ROAD
N/F
JOHN GUDAITIS
DEED: 87~200
PLAN: 896

TREE LINE GENERALLY ALONG BOUNDARY

ROW OF TREES GENERALLY ALONG BOUNDARY

038-68-007
ROCKVILLE ROAD
N/F
BARBARA GILSON, TRUSTEE
DEED: 171~102

CBF
DIST.

WAPPING ROAD

ZONE R-3
ZONE A-1

175' WIDE CL&P EASEMENT

N00°58'29"W 771.70'

S02°48'29"E 766.01'

LOCUS
038-68-030
WAPPING ROAD
N/F
MULNITE FARMS, INC.
DEED 88~95
PLAN 1087

AREA = 24.804 AC. ±

NO EASEMENT FOUND
COVERING THIS WIRE

S88°18'06"W 707.46'

038-68-026
57 WAPPING ROAD
N/F
BARBARA GILSON
DEED 198~560

028-68-025
11 MILLER ROAD
N/F
SCOTT & PAULA S. STOLINAS
DEED 229~144

029-68-010
ROCKVILLE ROAD
N/F
LEONARD A. MULNITE REVOCABLE TRUST AGREEMENT
& DONNA L. MULNITE REVOCABLE TRUST AGREEMENT
DEED 419~658
DEED 348~411
PLAN 1087

80' 0' 80' 160'

NOTES:

1. FIELD SURVEY BY RTK GPS.

2. THE HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD88. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.

3. BOUNDARY LINES SHOWN HEREON ARE TAKEN FROM PLANS & DEEDS OF RECORD AND MONUMENTS FOUND.

4. ALL CONTOURS SHOWN HEREON WERE GENERATED IN QGIS FROM DIGITAL ELEVATION MODELS OF THE 2016 CRCOG LIDAR DATA (15' GRID SIZE/TIN GRID METHOD) AS DISTRIBUTED BY NOAA.

5. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, ALL OF THE LOCUS IS LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED): "AREAS OF MINIMAL FLOOD HAZARD". COMMUNITY PANEL NO. 09003C0245F, EFFECTIVE DATE: 09/26/2008.

6. THE LOCUS PROPERTY IS LOCATED IN THE R-3 ZONING DISTRICT.

7. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO MATTERS A TITLE REPORT WOULD DISCLOSE.

TYPE OF SURVEY: BOUNDARY SURVEY

BOUNDARY SURVEY CATEGORY: DEPENDANT RESURVEY

CLASS OF ACCURACY: HORIZONTAL CLASS A-2
TOPOGRAPHIC CLASS T-3

PURPOSE OF SURVEY: PROPOSED SOLAR ARRAY

THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE LIVE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED PROFESSIONAL. UNAUTHORIZED ALTERATIONS RENDER ANY DECLARATION NULL AND VOID.

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

STATE OF CONNECTICUT
CHARLES G. GIDMAN
#70103
LICENSED
LAND SURVEYOR

CHARLES G. GIDMAN, P.L.S. #70103

3-12-2021
DATE

SHEET NO. 1 OF 1

PLAN OF LAND IN EAST WINDSOR, CT

PREPARED FOR

GREENSKIES RENEWABLE ENERGY

SURVEYOR:	CGG	ENGINEER:	–
DRAFTING:	JDG	DESIGN:	–
FIELD WORK:	NAE	HORZ. SCALE:	1" = 80'
PROJECT NUMBER:	20-265	VERT. SCALE:	–
DRAWING NAME:	20-265.DWG	DATE:	03-12-2021

BOUNDARY SURVEY & LIDAR CONTOURS

NORTHEAST SURVEY CONSULTANTS
116 PLEASANT ST. SUITE 302
P.O. BOX 109
EASTHAMPTON, MA 01027
(413) 203-5144

LEGEND

119–6313	ASSESSOR'S ID
N/F	NOW OR FORMERLY
IPF IRF ○	IRON PIPE OR ROD FOUND
△	CALCULATED POINT
	UTILITY POLE
⊕	GUY WIRE ANCHOR
	LOCUS PROPERTY LINE
	ABUTTERS LINE (±)
	CONTOUR LINE
OHW	OVERHEAD WIRES
	TREE LINE

NOTES:

1. FIELD SURVEY BY EDM TOTAL STATION & RTK GPS.

2. THE HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD88. BOTH WERE DERIVED FROM GPS OBSERVATIONS TAKEN ON SITE.

3. BOUNDARY LINES SHOWN HEREON ARE TAKEN FROM PLANS & DEEDS OF RECORD AND MONUMENTS FOUND.

4. ALL CONTOURS SHOWN HEREON WERE GENERATED IN ARCMAP FROM DIGITAL ELEVATION MODELS OF THE 2016 CRCOG LIDAR DATA (5' GRID SIZE/TIN GRID METHOD) AS DISTRIBUTED BY NOAA.

5. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, ALL OF THE LOCUS IS LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED): "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN". COMMUNITY PANEL NO. 09003C0245F, EFFECTIVE DATE: 09/26/2008.

6. THE LOCUS PROPERTY AND ALL ABUTTING PROPERTIES ARE LOCATED IN THE A–1 ZONING DISTRICT.

7. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO MATTERS A TITLE REPORT WOULD DISCLOSE.

TYPE OF SURVEY: BOUNDARY SURVEY

BOUNDARY SURVEY CATEGORY: DEPENDANT RESURVEY

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TOPOGRAPHIC CLASS T–3

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STATE OF CONNECTICUT
CHARLES G. GIDMAN
#70103
LAND SURVEYOR
LICENSED

CHARLES G. GIDMAN, P.L.S. #70103 — 3–15–2021 DATE

NORTHEAST SURVEY CONSULTANTS
116 PLEASANT ST. SUITE 302
P.O. BOX 109
EASTHAMPTON, MA 01027
(413) 203-5144

BOUNDARY SURVEY & LIDAR CONTOURS

SURVEYOR:	–
DRAFTING:	CGG
FIELD WORK:	JDG
PROJECT NUMBER:	JED CRC
DRAWING NAME:	20–266
	20–266.DWG
ENGINEER:	–
DESIGN:	–
HORZ. SCALE:	1" = 80'
VERT. SCALE:	–
DATE:	03–15–2021

PLAN OF LAND IN EAST WINDSOR, CT

PREPARED FOR

GREENSKIES RENEWABLE ENERGY

SHEET NO. 1 OF 1

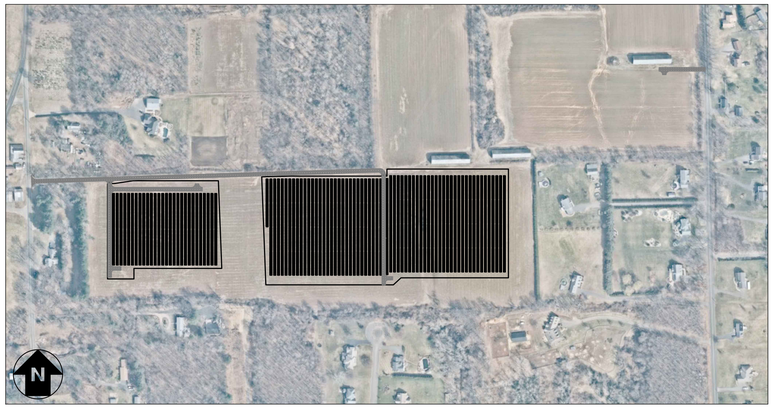
PLOT DATE: 3/7/2025 6:07 PM

GROUND MOUNT SYSTEM AT

MULNITE – MILLER ROAD

MILLER ROAD, EAST WINDSOR, CT 06016

LOCATION MAP
SCALE: 1" = 1500'



SYSTEM PLAN
SCALE: 1" = 300'–0"

TOTAL SYSTEM SUMMARY:

TOTAL DC SYSTEM SIZE:	4,689.360 kWDC
TOTAL AC SYSTEM SIZE:	4,000.000 kWAC
(QTY) MODULE TYPE :	HELIENE (8,684) 144HC M10 SL 540W BIFACIAL
MODULE TILT:	SINGLE AXIS TRACKER
MODULE AZIMUTH:	0°
INVERTER MANUFACTURER:	SOLECTRIA
(QTY) INVERTER TYPE:	(32) XGI 1500 125/125 KW

SUBSYSTEM SUMMARIES:

SYSTEM A

DC SYSTEM SIZE:	3,510.000 kWDC	
AC SYSTEM SIZE:	3,000.000 kWAC	
(QTY) MODULE TYPE :	(6,500)	144HC M10 SL 540W
(QTY) INVERTER TYPE:	(24)	XGI 1500 125/125 KW

SYSTEM B

DC SYSTEM SIZE:	1,179.360 kWDC	
AC SYSTEM SIZE:	1,000.000 kWAC	
(QTY)MODULE TYPE:	(2,184)	144HC M10 SL 535W
(QTY)INVERTER TYPE:	(8)	XGI 1500 125/125 KW

SCOPE OF WORK SUMMARY

GROUND MOUNT PV ARRAY:
- INSTALL SOLAR MODULES AND RACKING SYSTEM ON GROUND LEVEL.
- INSTALL INVERTERS AND ELECTRICAL DISTRIBUTION EQUIPMENT.
- INTERCONNECT AT NEW UTILITY SERVICE

NOTES SPECIFIC TO CONNECTICUT

ADOPTED NEC VERSION: 2020
ADOPTED IBC VERSION: 2021
ADOPTED IFC VERSION: 2021

DEVELOPER:

Greenskies
a Clean Focus company

127 WASHINGTON AVENUE,
WEST BUILDING, GARDEN LEVEL
NORTH HAVEN, CT 06473

ENGINEERED BY:

PUREPOWER ENGINEERING

111 RIVER STREET, SUITE 1110
HOBOKEN, NEW JERSEY 07030

DRAWING INDEX

		CONCEPTUAL DESIGN 04/29/2021	CONCEPTUAL DESIGN REV 1 05/23/2021	CONCEPTUAL DESIGN REV 2 07/27/2021	PERMIT REVIEW SET 03/04/2022	PERMIT SET 06/15/2022	ISSUE FOR CONSTRUCTION 12/14/2022	IFC – REV 1 04/24/2023	IFC – REV 2 07/11/2024	IFC – REV 3 07/17/2024	IFC – REV 4 03/07/2025
GENERAL											
G001	TITLE SHEET	●	●	●	●	●	●	●	●	●	●
ELECTRICAL											
E001	ELECTRICAL NOTES & SYMBOL LIST				●	●	●	○	●	○	●
E100	AC ELECTRICAL PLAN	●	●	●	●	●	●	●	●	●	●
E101	PARTIAL ELECTRICAL PLAN – SYSTEM A				●	●	●	●	●	○	●
E102	PARTIAL ELECTRICAL PLAN – SYSTEM B				●	●	●	●	●	○	●
E103	INVERTER & EQUIPMENT PLAN				●	●	●	○	●	○	●
E104	EQUIPMENT MOUNTING DETAILS				●	○	○	○	●	○	○
E200	DC ELECTRICAL PLAN – SYSTEM A				●	●	●	○	●	○	○
E201	DC ELECTRICAL PLAN – SYSTEM B				●	●	●	○	●	○	○
E202	STRING WIRING DETAILS				●	○	○	○	×	○	○
E300	ONE LINE DIAGRAM – MV & SYSTEM A	●	○	○	●	●	●	○	●	○	●
E301	ONE LINE DIAGRAM – SYSTEM B	●	○	○	●	●	●	○	●	○	●
E310	SCHEDULES & CALCULATIONS				●	●	●	○	●	○	●
E311	SCHEDULES & CALCULATIONS				●	●	●	○	●	○	○
E401	GROUNDING DETAILS				●	○	○	○	●	○	○
E402	ELECTRICAL DETAILS				●	○	○	○	●	○	●
E500	LABELS & SIGNAGE				●	●	●	●	●	●	○
E600	EQUIPMENT DATA SHEETS				●	●	●	○	●	○	●

LEGEND:

UPDATED DRAWING ISSUED	●
UNCHANGED, PREVIOUSLY ISSUED DRAWING STILL CURRENT	○
DRAWING REMOVED FROM SET	×

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MeB	RI

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RICHARD A. WINS
CT LICENSE No. 0029462

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DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: TITLE SHEET

DRAWING #: G001

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 3/7/2025 6:07 PM

SOLAR PV GENERAL NOTES

1. INSTALL A COMPLETE AND OPERATIONAL SOLAR PHOTOVOLTAIC SYSTEM INCLUDING THE RECONNECTION OF ANY EXISTING ELECTRICAL EQUIPMENT DISTURBED DURING SOLAR PHOTOVOLTAIC ARRAY INSTALLATION.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL LOCATION AND ARRANGEMENT OF THE SOLAR PV SYSTEM. THEY DO NOT SHOW ALL MATERIALS NEEDED. CONTRACTOR IS REQUIRED TO PROVIDE ANY AND ALL CONDUITS, CONNECTORS, SWEEPS, SUPPORTS, BENDS, FITTINGS, HANGERS, COVER PLATES, AND ADDITIONAL PULL AND JUNCTION BOXES WHICH THE CONTRACTOR MUST PROVIDE TO COMPLETE THE SOLAR PV SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).
3. THE DEFINITION OF ELECTRICAL TERMS USED SHALL BE AS DEFINED STATES' ADOPTED EDITION OF THE NEC.
4. THE TERM "SIZE" SHALL MEAN ONE OR MORE OF THE FOLLOWING: "LENGTH, CURRENT AND VOLTAGE RATING, NUMBER OF POLES, NEMA SIZE, AND OTHER SIMILAR ELECTRICAL CHARACTERISTICS".
5. CONTRACTOR IS REQUIRED TO SURVEY AND INSPECT ALL AREAS PRIOR TO PERFORMING SERVICES TO ENSURE CLEARANCES CAN BE MET AND NO INTERFERENCES EXIST. NO CUTTING OR DRILLING IS TO BE PERFORMED PRIOR TO LOCATING EXISTING STRUCTURAL MEMBERS AND UTILITIES.
6. SERVICE ENTRANCE RATED EQUIPMENT, C/T CABINETS, AND METER SOCKETS ARE TO BE APPROVED FOR USE BY THE LOCAL UTILITY COMPANY.
7. ELECTRICAL EQUIPMENT INSTALLED MUST BE LABELED, UL LISTED, AND INSTALLED ACCORDINGLY.
8. REQUIRED PERMITS AND INSPECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE COORDINATED WITH THE AUTHORITY HAVING JURISDICTION (AHJ).
9. ALL WORK IS TO BE PERFORMED BY LICENSED WORKMEN AND COMPLETED IN ACCORDANCE WITH THE STATES' ADOPTED NEC.
10. ALL PENETRATIONS THROUGH FIRE AND SMOKE RATED PARTITIONS MUST BE SEALED WITH A FIRE RATED MATERIAL EQUIVALENT IN RATING TO THE PARTITION PENETRATED.
11. THE SOLAR PV SYSTEM EQUIPMENT ON THE DC SIDE IS RATED FOR 1000V AND IS IN COMPLIANCE WITH NEC 690.80. THE INVERTERS, MODULES, STRING FEEDERS, AND RELATED COMPONENTS ARE ALL RATED AND LABELED AS 1000V.
12. EMT CONDUIT IS ALLOWED IN EXTERIOR LOCATIONS WHEN RAIN–TIGHT CONNECTORS AND FITTINGS ARE USED, AND THE CONDUIT IS NOT EXPOSED TO ANY POTENTIAL PHYSICAL DAMAGE. ALL SUPPORTS, BOLTS, STRAPS, AND SCREWS SHALL BE CORROSION RESISTANT.
13. ALL RACEWAYS ARE TO BE METALLIC UNLESS OTHERWISE NOTED. APPLY AN ADHESIVE LABEL ALONG ALL RACEWAYS CARRYING PV SYSTEM FEEDERS (AC AND DC) AS "WARNING: PHOTOVOLTAIC POWER SOURCE". REFER TO DETAIL 15 ON E500. LABEL SHALL BE APPLIED EVERY 10', AT EVERY TURN, AND ABOVE AND BELOW ALL PENETRATIONS.
14. ALL CONDUCTORS SHALL BE LISTED FOR USE IN APPROPRIATE RACEWAY.
15. ALL BREAKERS INSTALLED AS PART OF THE NEW SOLAR PV SYSTEM MUST BE RATED FOR REVERSE FEED.
16. COMMUNICATIONS CABLES INSTALLED BETWEEN MONITORING EQUIPMENT AND CLIENT NETWORK EQUIPMENT (SWITCHES, ROUTERS, SERVERS, ETC.) SHALL HAVE CABLE TAGS INSTALLED AT BOTH ENDS OF CABLE TO SHOW PROPER IDENTIFICATION.
17. CONTRACTOR SHALL TORQUE TEST ALL FIELD TERMINATED WIRES PER MANUFACTURER'S SPECS AND PROVIDE PERMANENT MARKINGS ACROSS THE BOLT AND WASHER INDICATING ACHIEVED TORQUE.
18. BARE COPPER GROUND CONDUCTORS SHALL BE SIZED PER NEC. EQUIPMENT GROUNDING CONDUCTORS (EGC) SHALL BE INSTALLED IN CONDUIT.
19. POLARIS SPLICES SHALL NOT BE USED ON THIS PROJECT IN ANY CAPACITY. ANY SPLICES SHALL BE APPROVED BY GREENSKIES AND THE ENGINEER OF RECORD.
20. CONTRACTOR SHALL SUBMIT A FORMAL RFI (REQUEST FOR INFORMATION) FOR ANY CONFUSION OR DISCREPANCY ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ANY INSTALLATION DEVIATIONS WITHOUT APPROVAL FROM GREENSKIES OR THE ENGINEER OF RECORD.
21. MOGUL LB CONDUIT BODIES SHALL NOT BE USED ON THIS PROJECT. EXCEPT FOR COMM CABLE ROUTING.
22. TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.
23. ALL METALLIC CONDUITS SHALL HAVE BOND BUSHINGS ON BOTH ENDS AND EQUIPMENT GROUNDING CONDUCTORS (EGC) ROUTED THROUGH CONDUIT.
24. ALL DC PV CONNECTORS TO BE LIKE–MATED.

PV ARRAY WORK NOTES

1. WORK INCLUDES INSTALLING PROPOSED SOLAR PANEL ARRAY PER THE MANUFACTURERS INSTALLATION PROCEDURES AND INSTRUCTIONS, ALONG WITH ASSOCIATED ELECTRICAL WIRING.
2. WORK AREAS SHALL BE MARKED, FENCED, AND OTHERWISE SECURED SO AS TO PROVIDE PROPER PROTECTION FOR THE PUBLIC AND AS REQUIRED BY THE BUILDING INSPECTOR.
3. DIMENSION OF EXISTING ELEMENTS SHOWN WERE DETERMINED THROUGH A COMBINATION OF EXISTING DRAWINGS AND FIELD INVESTIGATIONS, AND SHOULD BE USED FOR INFORMATIONAL PURPOSES ONLY. ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
4. ELECTRICAL RUNS SHOWN ON PLAN REPRESENT THE PROPOSED LAYOUT. THE CONTRACTOR SHALL NOT RELOCATE INVERTERS OR PANELBOARDS WITHOUT APPROVAL FROM THE ENGINEER.
5. THE INSTALLER SHALL VERIFY THE PROJECT SOUTH DIRECTION IN THE FIELD, AND INSTALL THE MODULES AS INDICATED ON THE PLANS. THE MODULES SHALL BE INSTALLED AS TILTED TOWARDS THE GENERAL DIRECTION OF PROJECT SOUTH.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION AND INSTALLATION OF PADS OR SLIP SHEETS UNDERNEATH ANY EQUIPMENT SUPPORTS NOT ADHERED TO THE ROOF. SLIP SHEETS FOR DURABLOCK, AND RACKING ARE PROVIDED BY GREENSKIES
7. THE FRONT OF THE INVERTER SHALL NOT FACE PROJECT SOUTH. ORIENT THE INVERTER SUCH THAT IT IS FACING NORTH WHEN POSSIBLE. IF SPACE IS A LIMITING FACTOR THEN THE INVERTER SHALL BE ALLOWED TO FACE PROJECT EAST OR WEST.
8. NO CONDUCTOR OR CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS OUTSIDE OF THE BOUNDARIES OF EACH SUB–ARRAY.
9. CONDUIT BETWEEN SUB–ARRAYS SHALL ENTER UNDERNEATH RACKING OR PENETRATE WINDSCREENS, WHERE APPLICABLE, IN ORDER TO PROTECT CONDUCTORS.
10. CONDUIT BETWEEN SUB–ARRAYS SHALL BE SECURED TO THE RACKING SYSTEM VIA CONDUIT CLAMPS.
11. CONTRACTOR SHALL ENSURE DC, AC, AND COMMUNICATION WIRING IS SECURED UNDERNEATH THE ARRAY AND OFF THE ROOFTOP MEMBRANE.
12. CONTRACTOR SHALL UTILIZE UV RESISTANT CABLE TIES FOR WIRE MANAGEMENT. UV RESISTANT PLASTIC ZIP TIES ARE PREFERRED.
13. DC CONDUIT JUMPERS THAT ARE EXPOSED TO ELEMENTS ON OPEN ENDS SHALL HAVE PUTTY INSTALLED TO KEEP OUT MOISTURE.

LEGEND – GENERAL

SYMBOL	DESCRIPTION
	LIGHT LINE INDICATES EXISTING OR BEYOND THE SCOPE OF PROJECT
	DARK LINE INDICATES NEW OR WITHIN THE SCOPE OF PROJECT
	DASHED LINE INDICATES EQUIPMENT AT A DIFFERENT ELEVATION
EXISTING TEXT	LIGHT TEXT INDICATES EXISTING OR BEYOND THE SCOPE OF PROJECT
NEW TEXT	DARK TEXT INDICATES NEW OR WITHIN THE SCOPE OF PROJECT

LEGEND – CIRCUITS

SYMBOL	DESCRIPTION
xx xx	ABOVE–GROUND CABLE
xx xx	UNDER–GROUND CABLE

NOTE: XX REPRESENTS CIRCUIT TYPE BELOW

ABBREVIATION	DESCRIPTION
DC	DIRECT CURRENT
AC	ALTERNATING CURRENT
MV	MEDIUM VOLTAGE
COM	COMMUNICATIONS
GND	GROUND
CAB	CAB MESSENGER
FO	FIBER OPTIC
RS485	RS485
OHE	OVERHEAD ELECTRICAL

LEGEND – PLAN SYMBOLS

SYMBOL	DESCRIPTION
	RACEWAY TURNING UP OR TOWARDS OBSERVER
	RACEWAY TURNING DOWN OR AWAY FROM OBSERVER
P OR P	PULLBOX
J OR J	JUNCTION BOX
	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE, RATED: 125–VOLTS AC, 20A
	GROUND ROD
	GROUND ROD W/ TEST WELL
	SLOPE DIRECTION INDICATOR

LEGEND – ONE LINE DIAGRAM & WIRING DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, FRAME SIZE AND TRIP SETTING AS NOTED
	DISCONNECT SWITCH
	INVERTER
	BUSS CONNECTION POINT
	CROSSING POINT (NO CONNECTION)
	NORMALLY CLOSED – NORMALLY OPEN CONTACTS
	TRANSFORMER CONTROL/POWER, SIZE AND RATING AS NOTED
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	FUSE, SIZE/RATING AS NOTED
	FUSED DISCONNECT SWITCH
	EARTH GROUND
NC NO	PUSHBUTTON SWITCHES; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY
NC NO	PUSHBUTTON SWITCHES MUSHROOM HEAD; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY
K	KEYED INTERLOCK (KIRK KEY OR EQ.)
ST	SHUNT TRIP COIL

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A	AMPERES
AERMS	ARC ENERGY REDUCING MAINTENANCE SWITCH
AF	AMPERE FRAME
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AFDI	ARC FAULT DETECTION & INTERRUPTER
AIC	AMPS INTERRUPTING CAPACITY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	CIRCUIT BREAKER
C	CONDUIT
CB	COMBINER BOX
CKT	CIRCUIT
COU	CONDITIONS OF USE
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRIC, ELECTRICAL
EMERG	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EQUIP	EQUIPMENT
EXIST	EXISTING
G, GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND–FAULT CIRCUIT INTERRUPTER
GFPE	GROUND–FAULT PROTECTION OF EQUIPMENT
HID	HIGH–INTENSITY DISCHARGE (LIGHTING)
HZ	HERTZ
IMC	IMC
kAIC	1000 AMPS INTERRUPT CAPACITY
kCMIL	1000 CIRCULAR MILS
kVA	KILO–VOLT AMPERE
kW	KILOWATT
LA	LIGHTNING & SURGE ARRESTOR
LED	LIGHT–EMITTING DIODE
LSIG	LONG, SHORT, INSTANTANEOUS, & GROUND–FAULT
LTG	LIGHTING
MAX	MAXIMUM
MCM	1000 CIRCULAR MILS
MFG	MANUFACTURER
MLO	MAIN LUGS ONLY
MLPE	MODULE LEVEL POWER ELECTRONICS
MPPT	MAXIMUM POWER POINT TRACKING
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NTS	NOT TO SCALE
P	POLE
PF	POWER FACTOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
POA	PLANE OF ARRAY
POI	POINT OF INTERCONNECTION
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
RAC	RIGID ALUMINUM CONDUIT
RCPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL CONDUIT
RMC	RIGID METAL CONDUIT
SA	SURGE ARRESTOR
SEC	SECONDARY
SPD	SURGE PROTECTION DEVICE
SSBJ	SUPPLY SIDE BONDING JUMPER
ST	SHUNT TRIP
STP	SHIELDED TWISTED PAIR
SW	SWITCH
TBD	TO BE DETERMINED
TP	TWISTED PAIR
TYP	TYPICAL
V	VOLT
VA	VOLT–AMPERE
W	WATT
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
ø	DIAMETER OR PHASE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MeB	RI

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STATE OF CONNECTICUT RICHARD A. IVINS PEN.0029262 LICENSED PROFESSIONAL ENGINEER

DEVELOPER
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PAGE SIZE 36" x 24"

PROJECT # 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE
ELECTRICAL NOTES & SYMBOL LIST

DRAWING #
E001

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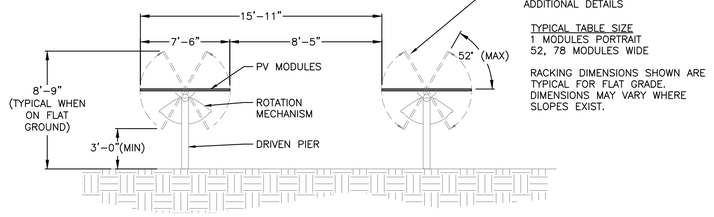
PLOT DATE: 3/21/2025 5:49 PM



1 RACKING DETAIL
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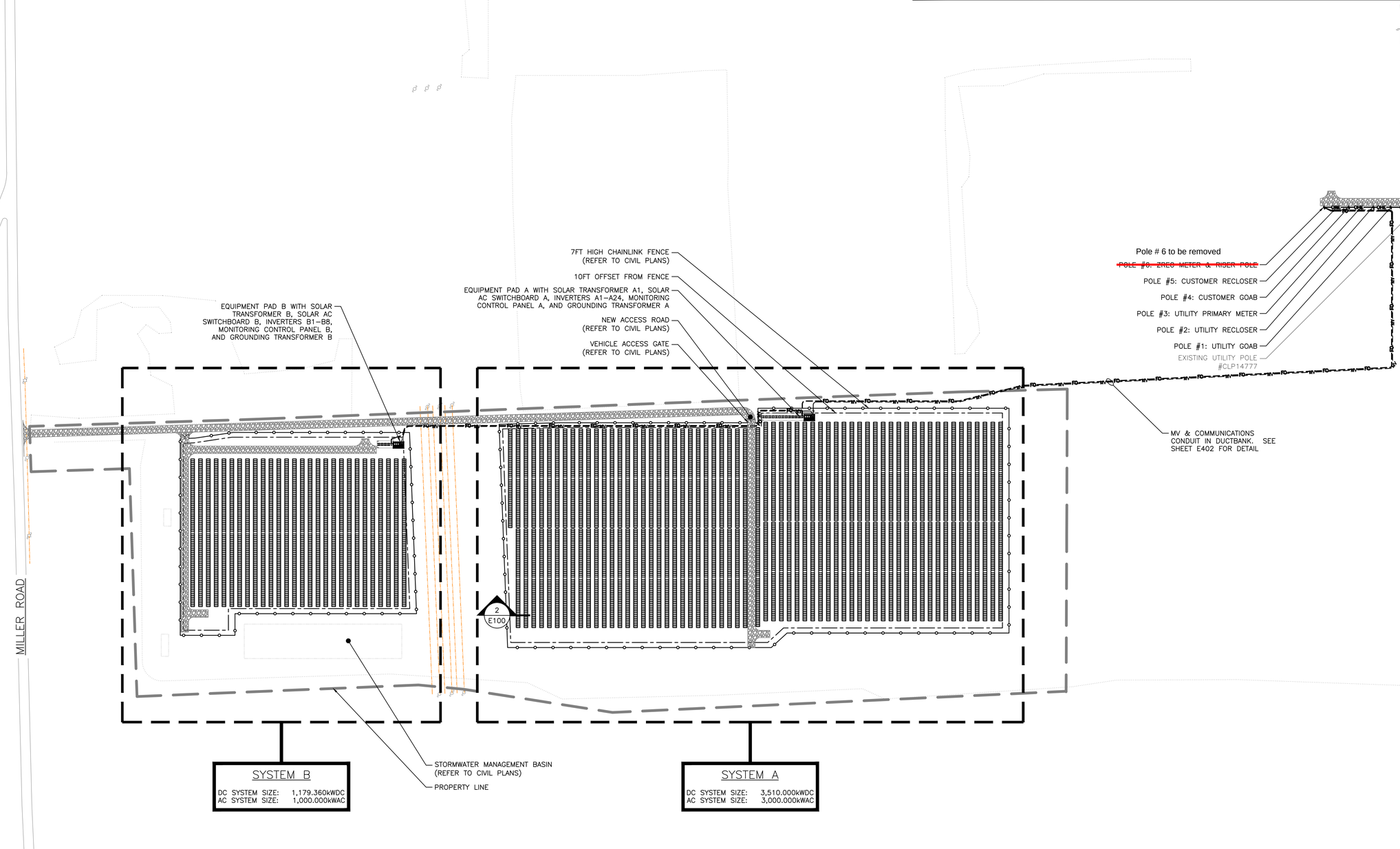

1 AC ELECTRICAL PLAN
SCALE: 1" = 100'-0"

LINETYPE LEGEND
MV CIRCUIT IN CONDUIT
OVERHEAD FEEDER

DRAWING TITLE	DRAWING #
AC ELECTRICAL PLAN	E100

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB	RI

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DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

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MODULE TYPE: HSPE 540W
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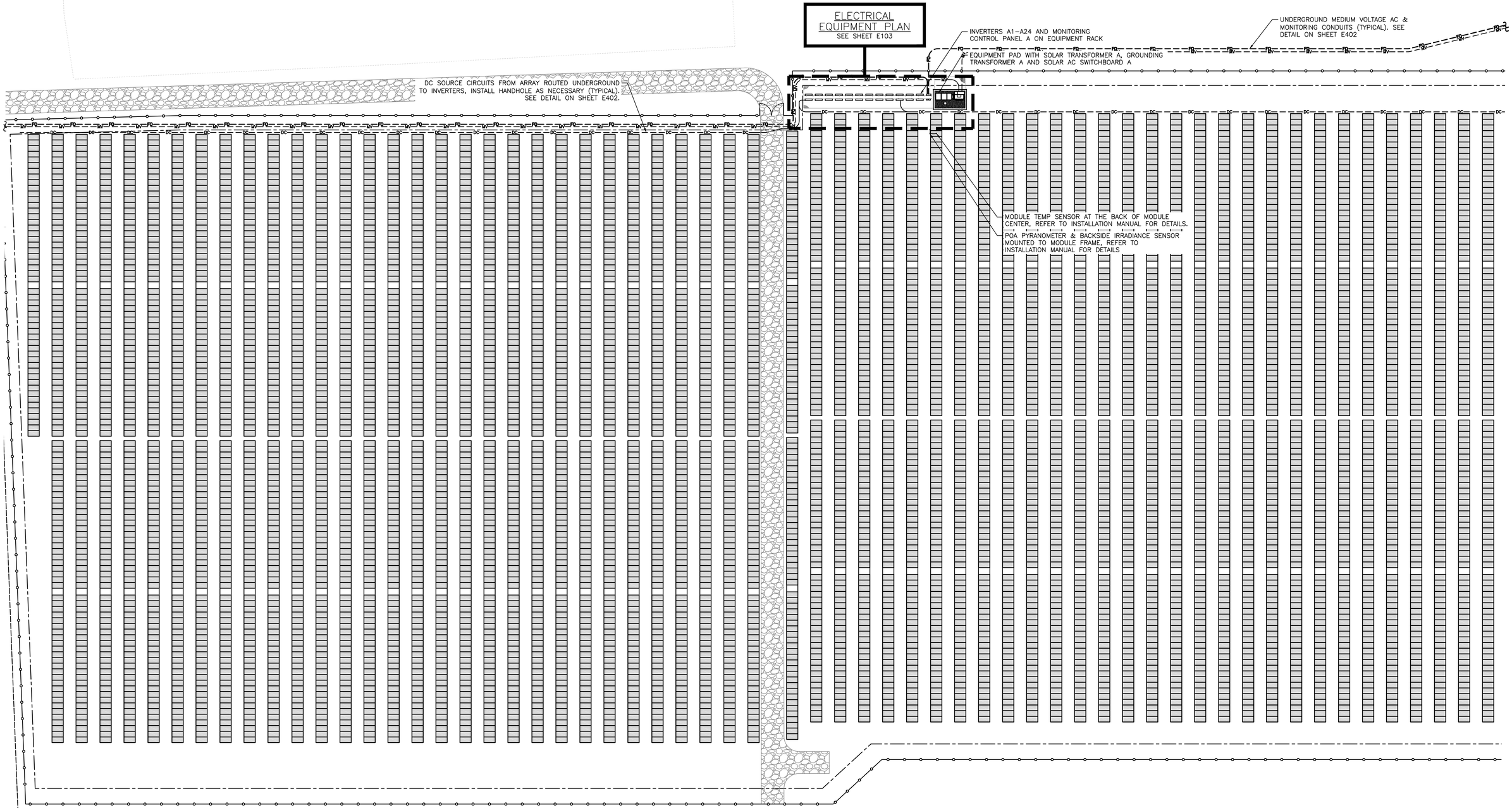
ORIENTATION: SAT, 0° AZIMUTH

PROJECT:
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

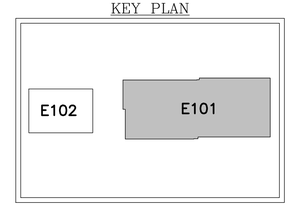
PLOT DATE: 3/7/2025 6:07 PM



1 PARTIAL ELECTRICAL PLAN – SYSTEM A
SCALE: 1" = 30'-0"

LINETYPE LEGEND
- MV CIRCUIT IN CONDUIT
- OHE OVERHEAD FEEDER
- DC DC STRINGS IN DUCTBANK

KEY PLAN



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DATE	REVISION DESCRIPTION	PM	ENG	CHK
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07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	Matt	RI

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DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

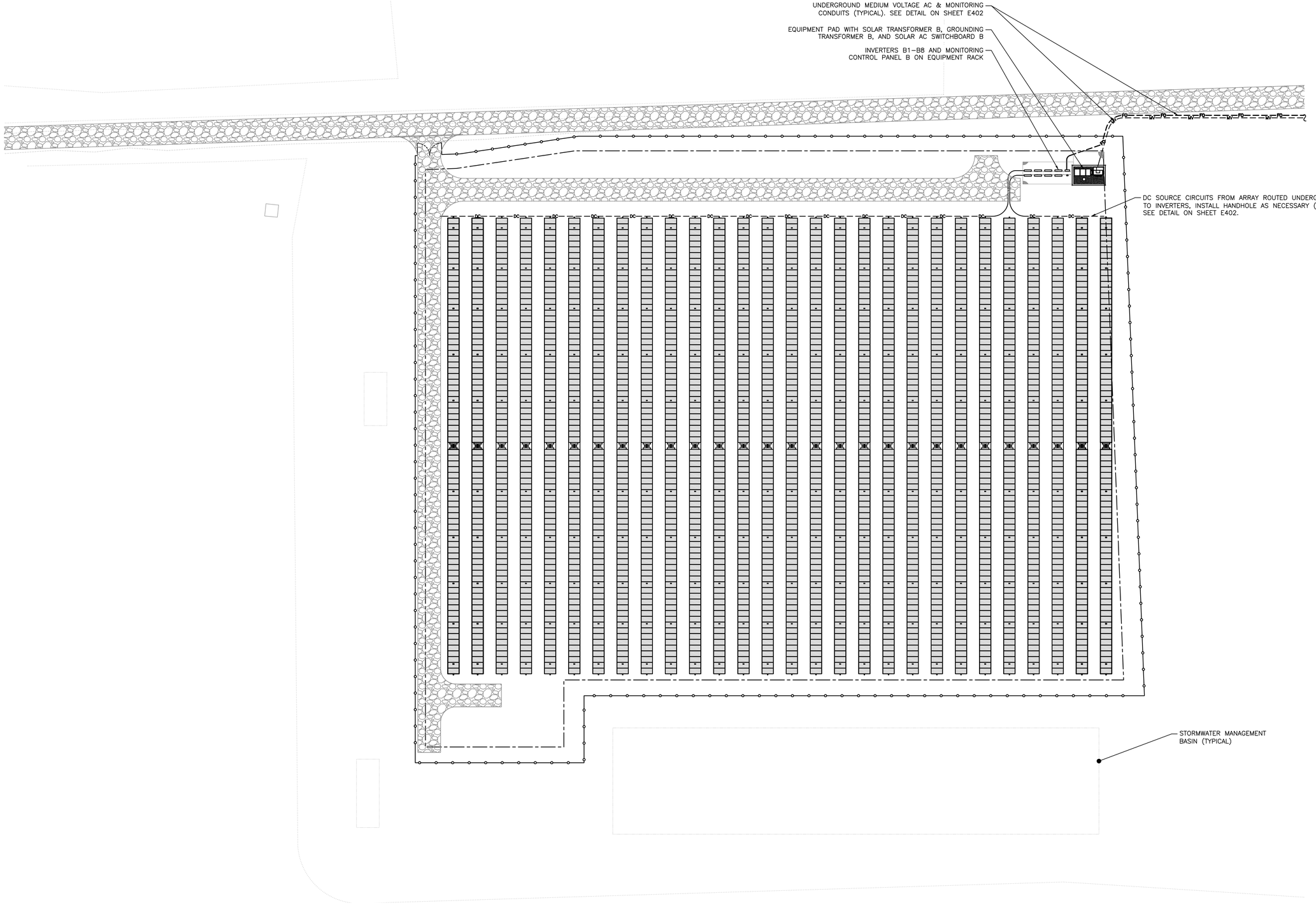
DC SYSTEM SIZE: 4,689,360 kW
AC SYSTEM SIZE: 4,000,000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: PARTIAL ELECTRICAL PLAN SYSTEM A

DRAWING #: E101

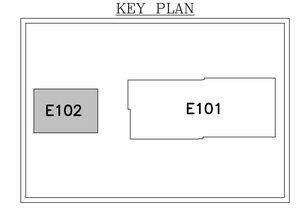
PLOT DATE: 3/7/2025 6:07 PM



1 PARTIAL ELECTRICAL PLAN – SYSTEM B
SCALE: 1" = 30'-0"

LINETYPE LEGEND
- MV CIRCUIT IN CONDUIT
- OHF OVERHEAD FEEDER
- DC DC STRINGS IN DUCTBANK

KEY PLAN



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3	07/11/2024	IFC – REV 2	SK	MW	RI
2	04/24/2023	IFC – REV 1	SK	SK	RI
1	12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB	RI

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DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
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AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

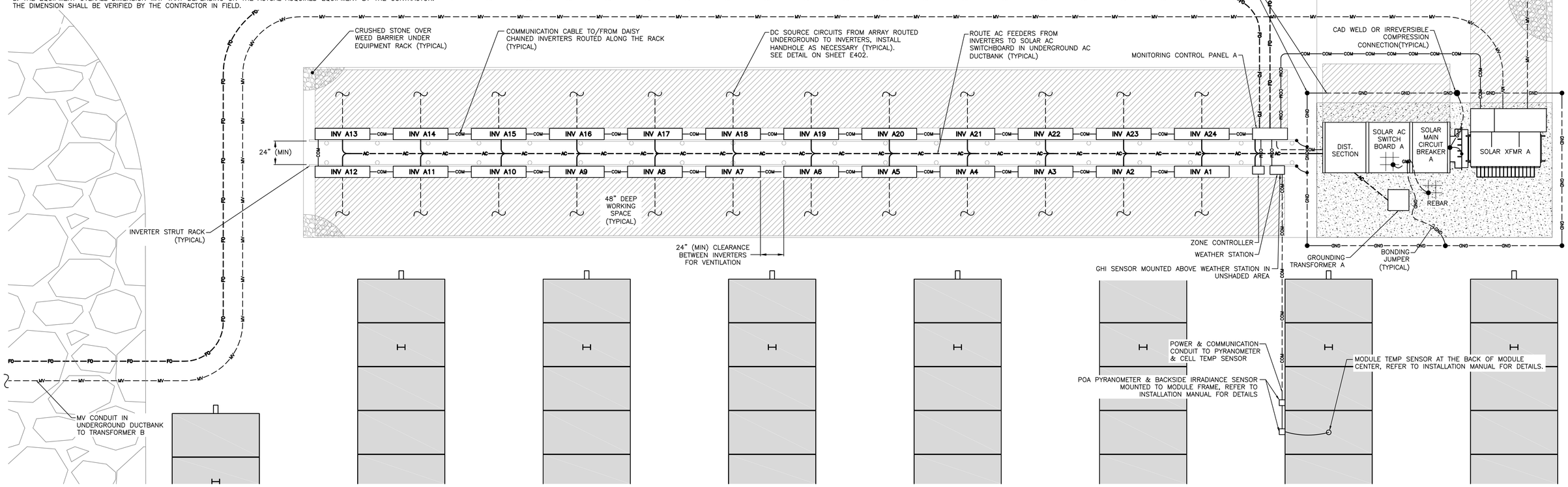
DRAWING TITLE: PARTIAL ELECTRICAL PLAN SYSTEM B

DRAWING #: E102

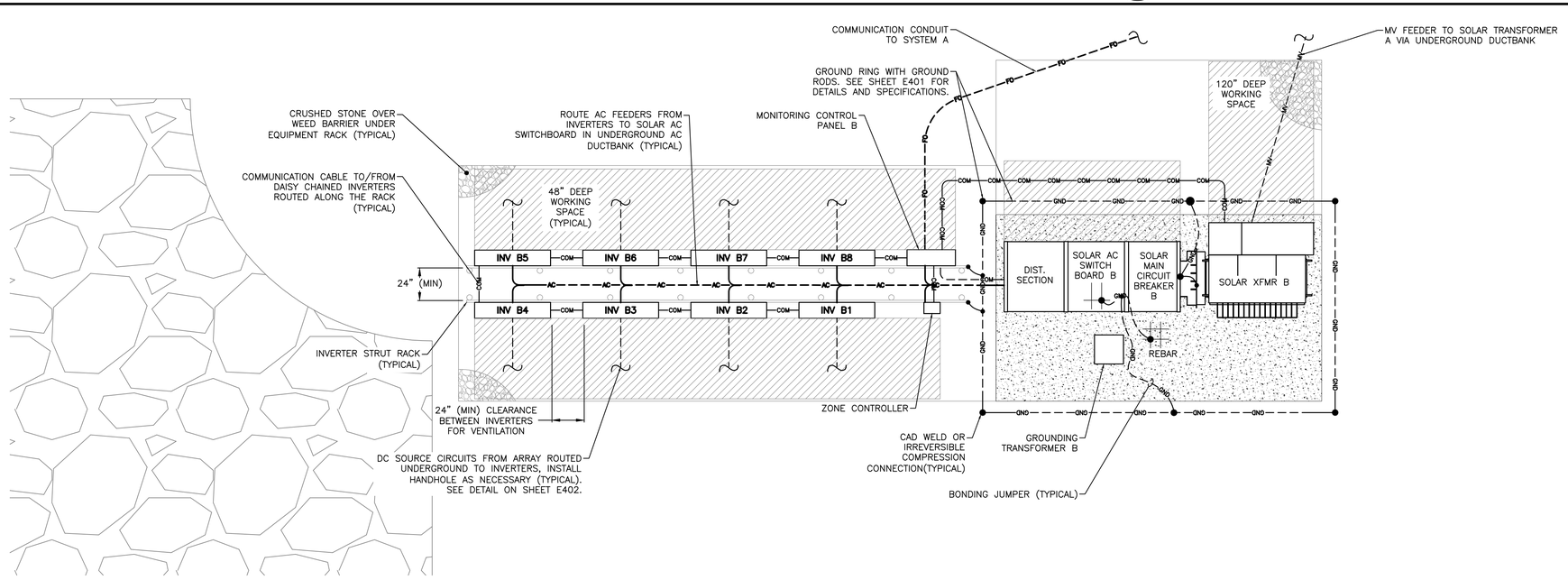
RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 3/7/2025 6:12 PM

NOTES:
1. ELECTRICAL EQUIPMENTS LOCATED OUTSIDE MUST NOT HAVE CONDUITS PENETRATING ON TOP OF THE EQUIPMENT.
2. CONDUITS, CABLE TRAYS AND TROUGHS SHALL NOT PROTRUDE MORE THAN 6" INTO WORKING SPACE OF EQUIPMENT.
3. MOUNT EQUIPMENT AS PER INSTALLATION MANUAL INSTRUCTION.
4. ELECTRICAL EQUIPMENT MOUNTED WITH UNISTRUT CHANNEL. USE FASTENER SPECIFICALLY INTENDED FOR THE TYPE & CONSTRUCTION. MOUNT EQUIPMENT AS PER INSTALLATION MANUAL.
5. TRANSITION TO MAX. 24" OF LFMC FOR FINAL CONNECTION TO INVERTER (TYPICAL AC, DC & COMMUNICATION).
6. TRENCHED CONDUITS SEPARATED BY CONDUIT SPACERS CARLON OR EQUIVALENT.
7. FEEDER BENDING RADIUS SHALL BE AT LEAST 5 TIMES THAT OF THE CONDUCTOR DIAMETER AS PER NEC GUIDELINES.
8. THE EQUIPMENT OVERALL DIMENSION MAY VARY DEPENDING ON THE ACTUAL ACQUIRED EQUIPMENT BY THE CONTRACTOR. THE DIMENSION SHALL BE VERIFIED BY THE CONTRACTOR IN FIELD.



1 TYPICAL INVERTER & ELECTRICAL EQUIPMENT PLAN
SCALE: 1/4" = 1'-0"



2 TYPICAL INVERTER & ELECTRICAL EQUIPMENT PLAN
SCALE: 1/4" = 1'-0"

LINETYPE LEGEND
- MV — MV CIRCUIT IN CONDUIT
- OHE — OVERHEAD FEEDER
- AC — AC CONDUIT IN DUCTBANK
- DC — DC STRINGS IN DUCTBANK
- COM — COMMUNICATIONS CIRCUIT IN CONDUIT

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	RI	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB	RI

PUREPOWER ENGINEERING
111 WASHINGTON AVENUE, NORTH HAVEN, NJ
WWW.PUREPOWER.COM, WMS
RICHARD A. WMS
CT LICENSE No. 0029462

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

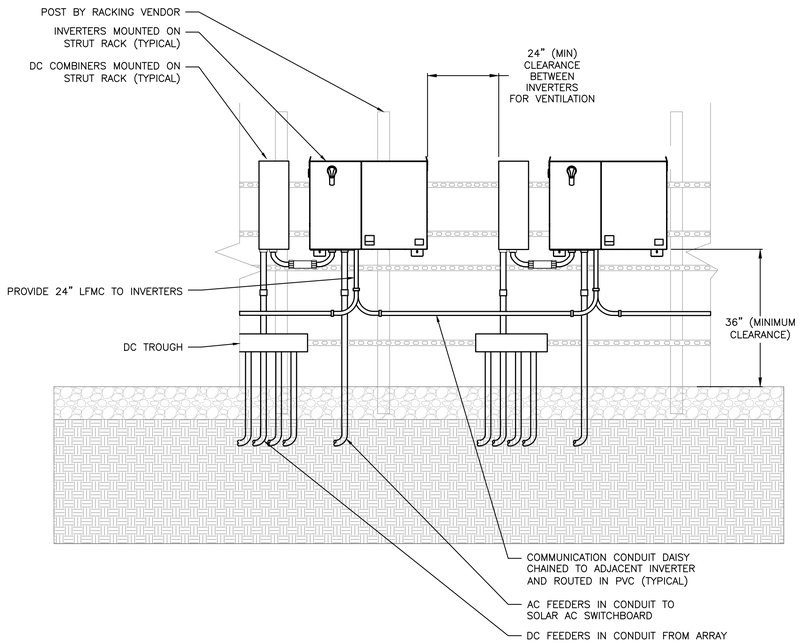
DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: TYPICAL INVERTER & ELECTRICAL EQUIPMENT PLAN

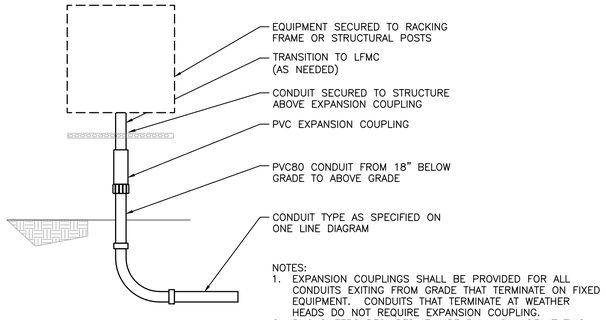
DRAWING #: E103

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



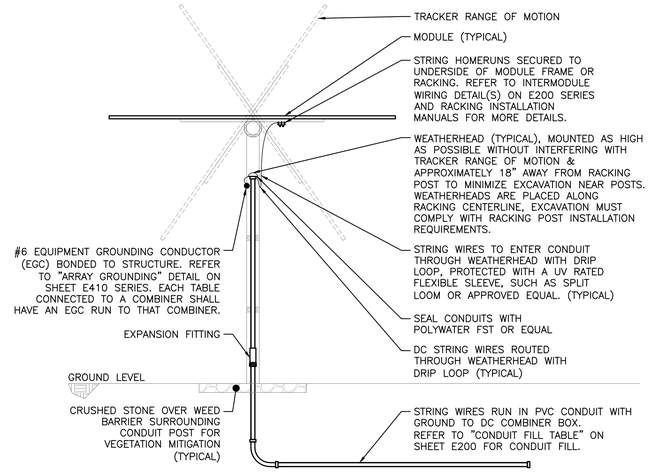
NOTES:
1. CONDUIT ROUTING & STUB-UP LOCATIONS ARE DIAGRAMMATIC. REFER TO EQUIPMENT SUBMITTALS FOR EXACT LOCATIONS.
2. EQUIPMENT SHALL BE INSTALLED AT HEIGHT SUCH THAT THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF THE SWITCH OR CIRCUIT BREAKER, WHEN IN ITS HIGHEST POSITION, SHALL NOT BE MORE THAN 6'7" ABOVE THE WORKING PLATFORM.
3. STRUCTURAL DESIGN TO BE DETERMINED.
4. CONDUITS AND TROUGHS SHALL NOT ENCROACH MORE THAN 6" INTO WORKING SPACE OF EQUIPMENT.
5. TROUGHS AND WIREWAYS SHALL BE SIZED SUCH THAT THE SUM OF THE CROSS-SECTIONAL AREAS OF ALL CONDUCTORS AND CABLES AT ANY CROSS SECTION SHALL NOT EXCEED 20 PERCENT OF THE AREA OF THE TROUGH. THE NUMBER OF CURRENT CARRYING CONDUCTORS SHALL NOT EXCEED 30 AT ANY CROSS-SECTION OF THE TROUGH.
6. TROUGH TO BE USED FOR DC STRING CIRCUITS ONLY. UTILIZE DIVIDER TO MAINTAIN MAXIMUM 30 CURRENT CARRYING CONDUCTORS AT ANY CROSS-SECTION.

1 TYPICAL EQUIPMENT RACKING ELEVATION – FRONT VIEW
SCALE: NONE



NOTES:
1. EXPANSION COUPLINGS SHALL BE PROVIDED FOR ALL CONDUITS EXITING FROM GRADE THAT TERMINATE ON FIXED EQUIPMENT. CONDUITS THAT TERMINATE AT WEATHER HEADS DO NOT REQUIRE EXPANSION COUPLING.
2. RMC SWEEPS REQUIRED IF WIRE PULL IS MADE AT THIS END. PVC SCH80 SWEEPS ALLOWED IF PULL IS MADE AT THE OTHER END.

2 TYPICAL CONDUIT TRANSITION ABOVE GRADE
SCALE: NONE



3 TYPICAL PV SOURCE CIRCUIT TRANSITION TO GRADE
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB	RI

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RICHARD A. IVINS
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GREENSKIES
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WWW.GREENSKIES.COM

DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE
EQUIPMENT MOUNTING DETAILS

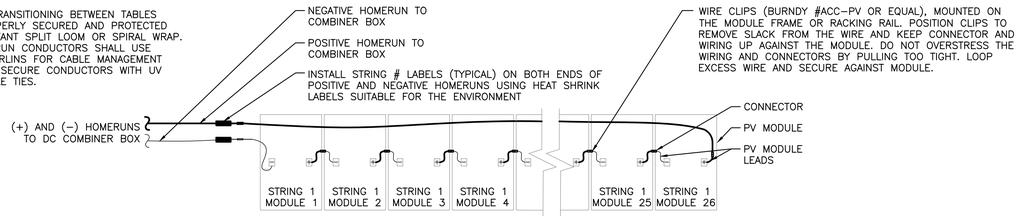
DRAWING #
E104

PLOT DATE: 3/7/2025 6:08 PM

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 3/7/2025 6:08 PM

NOTES:
1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.



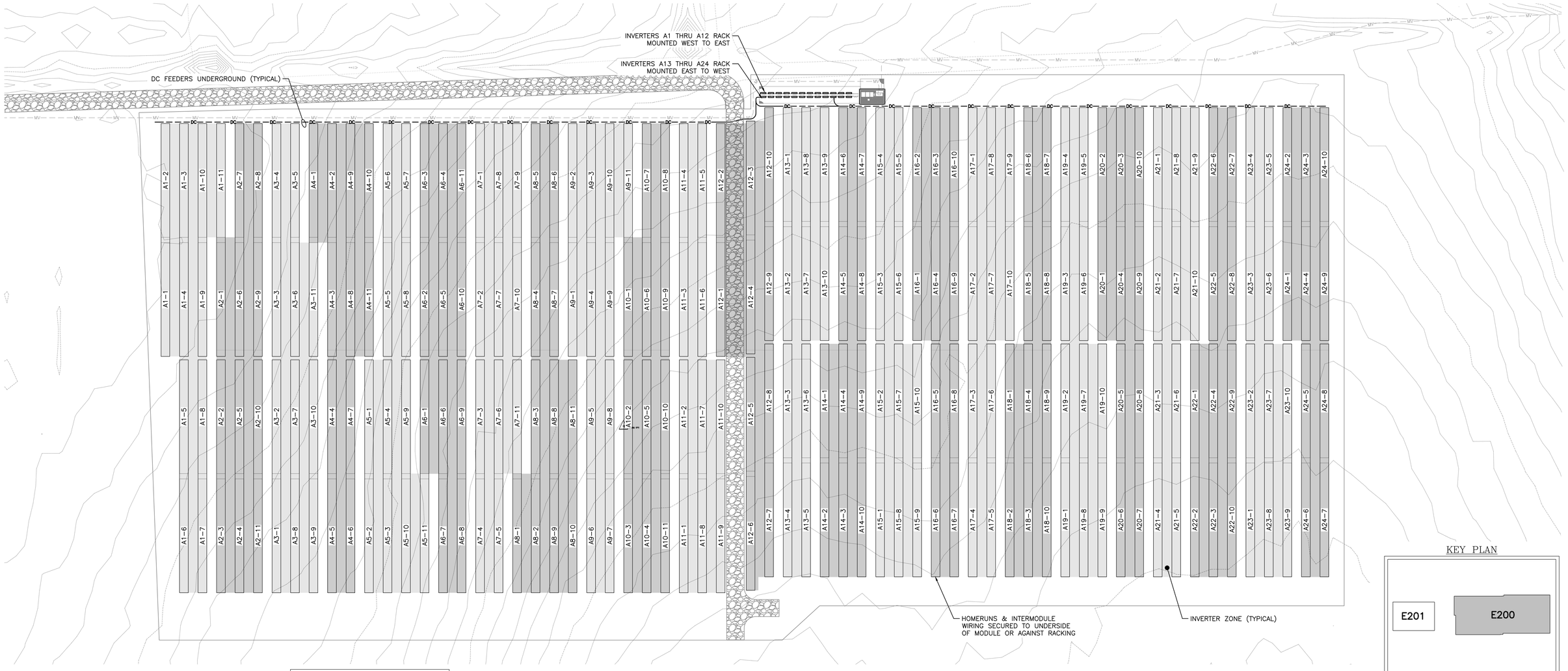
2 INTERMODULE WIRING DETAIL
SCALE: NONE

STRING SUMMARY

INVERTER NAME	MODULES PER STRING	STRING QUANTITY
A1	26	11
A2	26	11
A3	26	11
A4	26	11
A5	26	11
A6	26	11
A7	26	11
A8	26	11
A9	26	11
A10	26	11
A11	26	10
A12	26	10
A13	26	10
A14	26	10
A15	26	10
A16	26	10
A17	26	10
A18	26	10
A19	26	10
A20	26	10
A21	26	10
A22	26	10
A23	26	10
A24	26	10

CONDUIT FILL TABLE (PVWIRE, 2000VDC MAX) MAXIMUM NUMBER OF CU #10 PV WIRES. (WITH ALLOWANCE FOR AN ADDITIONAL GROUND WIRE)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
3/4"	3	2
1"	5	3
1.25"	9	6
1.5"	13	9
2"	23	9
2.5"	33	9
3"	52	9
3.5"	70	9
4"	91	9
TABLE ASSUMING: PVC CONDUIT AND CU #10 PV WIRE WITH 0.28in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT (SIMULATED) WITH 17.04A OUTPUT, 1 IN PARALLEL, AND 25A FUSES		

STRING WIRING NOTE:
STRING WIRES TO BE GROUPED BY CIRCUIT INTO SAME CONDUIT OR CABLE TRAY PER NEC 300.3(B)



IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

1 DC ELECTRICAL PLAN – SYSTEM A
SCALE: 1" = 40'

STRING LABEL KEY
2-3
STRING #
INVERTER #

KEY PLAN

NO	DATE	REVISION DESCRIPTION	PM	ENG CHK
IFC – REV 4	03/07/2025		SK	RI
IFC – REV 2	07/11/2024		SK	MW
IFC – REV 1	04/24/2023		SK	RI
ISSUE FOR CONSTRUCTION	12/14/2022		SK	MWE

PUREPOWER ENGINEERING
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RICHARD A. WINS
CT LICENSE No. 0029362

CONNECTICUT RICHARD A. WINS 0029362 REGISTERED PROFESSIONAL ENGINEER

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

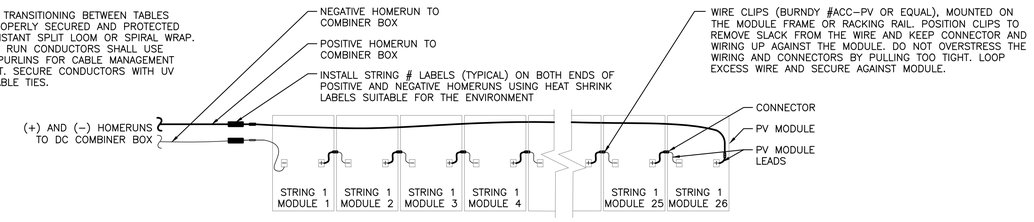
DRAWING TITLE
DC ELECTRICAL PLAN
SYSTEM A

DRAWING #
E200

RULER IN INCHES:

PLOT DATE: 3/7/2025 6:08 PM

NOTES:
1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.

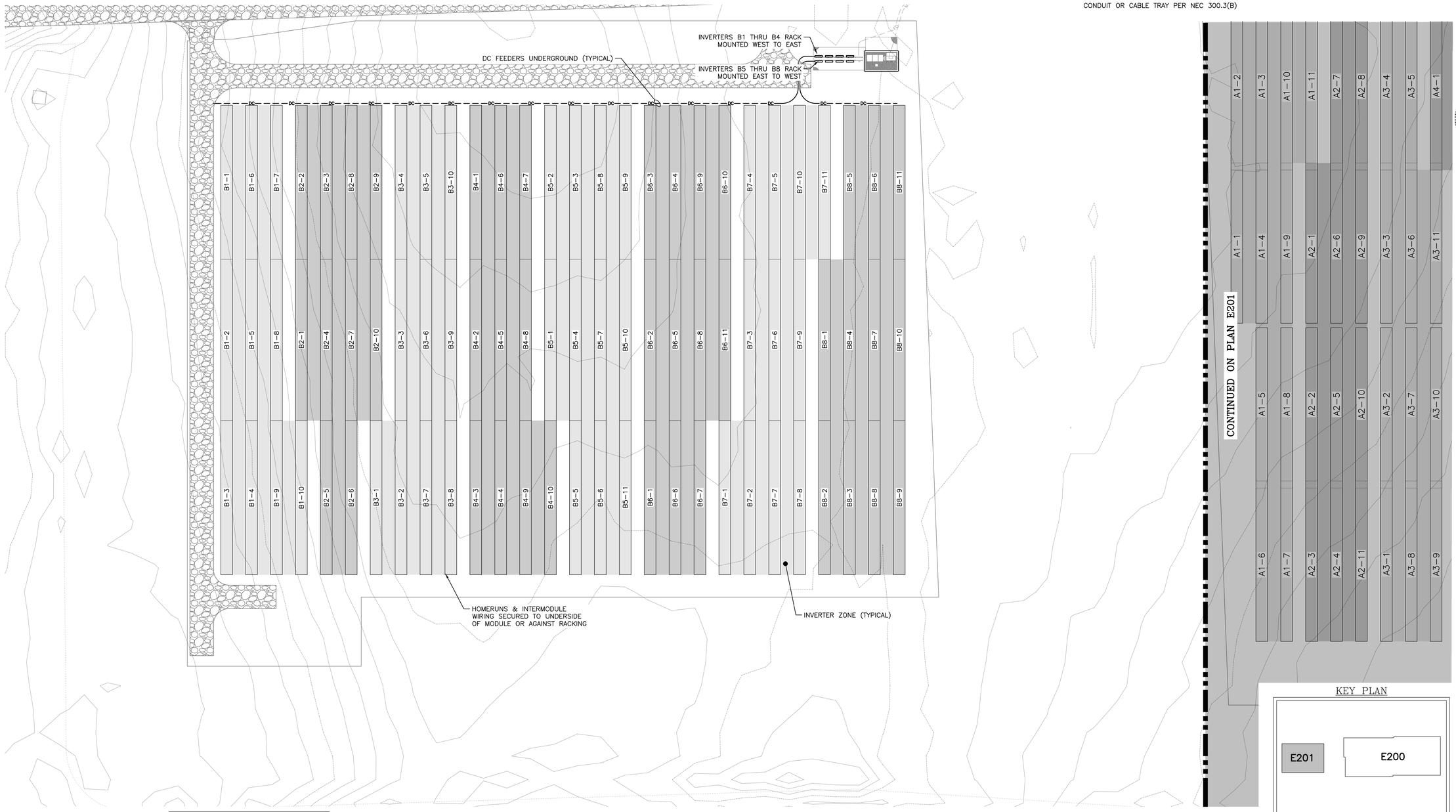


2 INTERMODULE WIRING DETAIL
SCALE: NONE

STRING SUMMARY		
INVERTER NAME	MODULES PER STRING	STRING QUANTITY
B1	26	10
B2	26	10
B3	26	10
B4	26	10
B5	26	11
B6	26	11
B7	26	11
B8	26	11

CONDUIT FILL TABLE (PVWIRE, 2000VDC MAX)		
MAXIMUM NUMBER OF CU #10 PV WIRES. (WITH ALLOWANCE FOR AN ADDITIONAL GROUND WIRE)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
3/4"	3	2
1"	5	3
1.25"	9	6
1.5"	13	9
2"	23	9
2.5"	33	9
3"	52	9
3.5"	70	9
4"	91	9
TABLE ASSUMING: PVC CONDUIT AND CU #10 PV WIRE WITH 0.28in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT (SIMULATED) WITH 17.04A OUTPUT, 1 IN PARALLEL, AND 25A FUSES		

STRING WIRING NOTE:
STRING WIRES TO BE GROUPED BY CIRCUIT INTO SAME CONDUIT OR CABLE TRAY PER NEC 300.3(B)



KEY PLAN

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

1 DC ELECTRICAL PLAN – SYSTEM B
SCALE: 1" = 30'

STRING LABEL KEY
2-3
STRING #
INVERTER #

DATE	REVISION DESCRIPTION	PM	ENG CHK
03/07/2025	IFC – REV 4	SK	RI
07/11/2024	IFC – REV 2	SK	MW
04/24/2023	IFC – REV 1	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB

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RICHARD A. WINS
CT LICENSE No. 0029462

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WWW.GREENSKIES.COM

DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

DC SYSTEM SIZE: 4,680.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: DC ELECTRICAL PLAN SYSTEM B

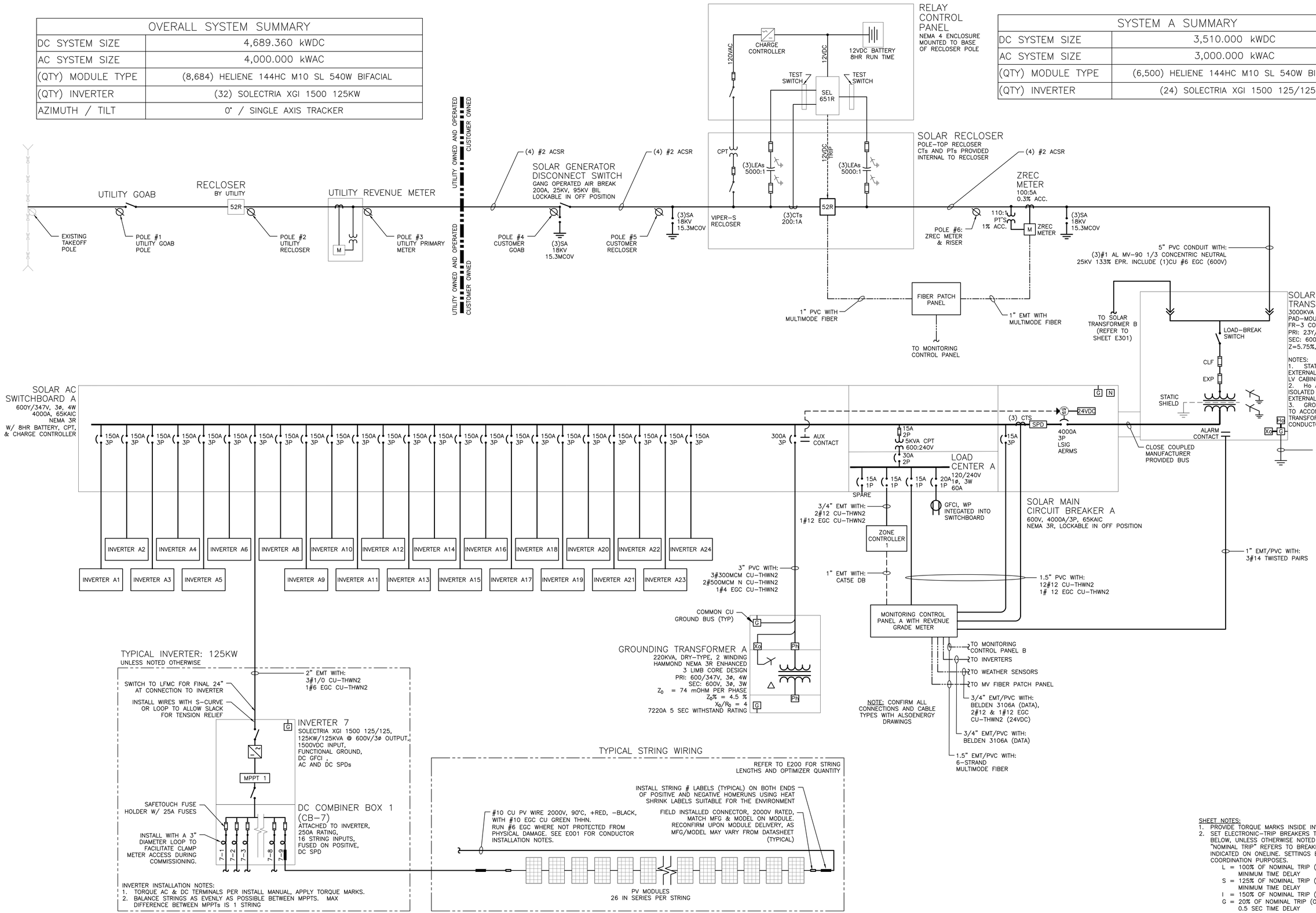
DRAWING #: E201

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 3/7/2025 6:08 PM

OVERALL SYSTEM SUMMARY	
DC SYSTEM SIZE	4,689.360 kWDC
AC SYSTEM SIZE	4,000.000 kWAC
(QTY) MODULE TYPE	(8,684) HELIENE 144HC M10 SL 540W BIFACIAL
(QTY) INVERTER	(32) SOLECTRIA XGI 1500 125KW
AZIMUTH / TILT	0° / SINGLE AXIS TRACKER

SYSTEM A SUMMARY	
DC SYSTEM SIZE	3,510.000 kWDC
AC SYSTEM SIZE	3,000.000 kWAC
(QTY) MODULE TYPE	(6,500) HELIENE 144HC M10 SL 540W BIFACIAL
(QTY) INVERTER	(24) SOLECTRIA XGI 1500 125/125



SHEET NOTES:
1. PROVIDE TORQUE MARKS INSIDE INVERTERS.
2. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   - L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

1 ONE LINE DIAGRAM – MEDIUM VOLTAGE AND SYSTEM A
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG CHK
03/07/2025	IFC – REV 4	SK	RI
07/11/2024	IFC – REV 2	SK	MW
04/24/2023	IFC – REV 1	SK	SK
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaM

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RICHARD A. WINS

GREENSKIES
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NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"

PROJECT #: 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

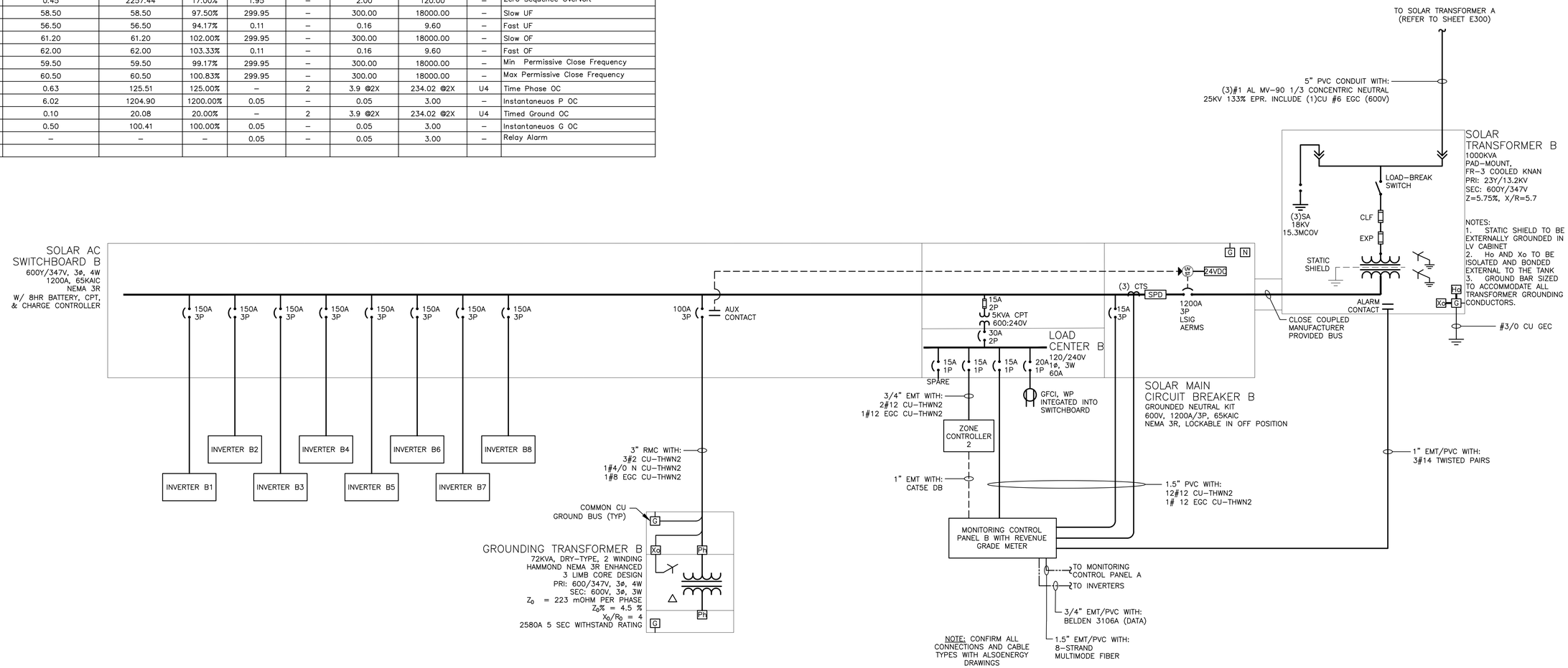
DRAWING TITLE: ONE LINE DIAGRAM – MV & SYSTEM A

DRAWING #: E300

RULER IN INCHES:

SYSTEM B SUMMARY	
DC SYSTEM SIZE	1,179.360 kWDC
AC SYSTEM SIZE	1,000.000 kWAC
(QTY) MODULE TYPE	(6,500) HELIENE 144HC M10 SL 540W BIFACIAL
(QTY) INVERTER	(8) SOLECTRIA XGI 1500 125/125

SEL 651R RELAY										
SETTINGS ARE PRELIMINARY PENDING UTILITY APPROVAL AND NOT INTENDED FOR CONSTRUCTION										
Solar System Base AC Size = 4000KVA			100.41A BASE PRIMARY USED FOR 50/51 ELEMENTS				*Total Clear Time = 3 Cycle Breaker Plus Delay (Time Dial or DEF Time)			
0.5A BASE SECONDARY 50/51P,G,N,Q							13279.06V BASE PRIMARY USED FOR 27/59 ELEMENTS			
P,G,N,Q CT RATIO FACTOR = 200							2.66V BASE SECONDARY USED FOR 27/59 ELEMENTS			
P CT Minimum Rating = 200:1 1B0.5 C50 RF = 1 @ 30C							LEA RATIO FACTOR = 5000			
ANSI ELEMENT #	Unit	Pickup (Secondary)	Real (Primary)	Level	Def. Time Delay (s)	Time Dial	Total Clear Time (s)*	Total Clear Time (cyc)*	Curve	Description
27–1	L–N Volt	2.34	11685.57	88.00%	2.95	–	3.00	180.00	–	Slow UV
27–2	L–N Volt	1.33	6639.53	50.00%	1.05	–	1.10	66.00	–	Fast UV
59–1	L–N Volt	2.92	14606.96	110.00%	1.95	–	2.00	120.00	–	Slow OV
59–2	L–N Volt	3.19	15934.87	120.00%	0.11	–	0.16	9.60	–	Fast OV
79–UV	L–N Volt	2.52	12615.10	95.00%	299.95	–	300.00	18000.00	–	Min Permissive Close Voltage
79–OV	L–N Volt	2.79	13943.01	105.00%	299.95	–	300.00	18000.00	–	Max Permissive Close Voltage
59N	3V0 L–N Volt	0.45	2257.44	17.00%	1.95	–	2.00	120.00	–	Zero Sequence Overvolt
81U–1	Hz	58.50	58.50	97.50%	299.95	–	300.00	18000.00	–	Slow UF
81U–2	Hz	56.50	56.50	94.17%	0.11	–	0.16	9.60	–	Fast UF
81O–1	Hz	61.20	61.20	102.00%	299.95	–	300.00	18000.00	–	Slow OF
81O–2	Hz	62.00	62.00	103.33%	0.11	–	0.16	9.60	–	Fast OF
79–UF	Hz	59.50	59.50	99.17%	299.95	–	300.00	18000.00	–	Min Permissive Close Frequency
79–OF	Hz	60.50	60.50	100.83%	299.95	–	300.00	18000.00	–	Max Permissive Close Frequency
51P	A	0.63	125.51	125.00%	–	2	3.9 @2X	234.02 @2X	U4	Time Phase OC
50P	A	6.02	1204.90	1200.00%	0.05	–	0.05	3.00	–	Instantaneuos P OC
51G	A	0.10	20.08	20.00%	–	2	3.9 @2X	234.02 @2X	U4	Timed Ground OC
50G	A	0.50	100.41	100.00%	0.05	–	0.05	3.00	–	Instantaneuos G OC
74	–	–	–	–	0.05	–	0.05	3.00	–	Relay Alarm



INVERTER UL1741–SB Compliant						
ANSI ELEMENT #	Pickup	Real	Level	Delay (sec)	Curve	Description
27–1	304.84	528V	88.0%	3.00		Slow UV
27–2	173.21	300V	50.0%	1.10		Fast UV
59–1	381.05	660V	110.0%	2.00		Slow OV
59–2	415.69	720V	120.0%	0.16		Fast OV
81U–1	58.50	58.5Hz	97.5%	300.00		Slow UF
81U–2	56.50	56.5Hz	94.2%	0.16		Fast UF
81O–1	61.20	61.2Hz	102.0%	300.00		Slow OF
81O–2	62.00	62Hz	103.3%	0.16		Fast OF
PF Set Point		1.00				Power Factor Control
Var Control		OFF				Reactive Power Control
Ramp Rate		10%/1 sec				dkw / dt
Freq Control		OFF				Speed Control

SHEET NOTES:
1. PROVIDE TORQUE MARKS INSIDE INVERTERS.
2. SET ELECTRONIC–TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
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   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

1 ONE LINE DIAGRAM – SYSTEM B
SCALE: NONE

REVISION DESCRIPTION	DATE	PM	ENG CHK
IFC – REV 4	03/07/2025	SK	RI
IFC – REV 2	07/11/2024	SK	MW
IFC – REV 1	04/24/2023	SK	RI
ISSUE FOR CONSTRUCTION	12/14/2022	SK	MeR

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DEVELOPER: Greenskies, a Clean Focus company

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MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: ONE LINE DIAGRAM SYSTEM B

DRAWING #: E301

PLOT DATE: 3/7/2025 6:09 PM

RULER IN INCHES: 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 ½ 0

PLOT DATE: 3/7/2025 5:09 PM

MV FEEDER CALCULATIONS (23KV)

FEEDER ID	EQUIPMENT SUPPLIED	FED FROM	CIRCUIT ROUTING	# OF TRANSFORMERS	APPARENT POWER [KVA]	FEEDER LENGTH [FT]	FULL LOAD AMPS 'FLA' [A]	OCPD TYPE	OCPD TRIP RATING [A]	OCPD TRIP % OF FLA	CONDUCTOR MATERIAL	CONDUCTOR SIZE	NEC TABLE REFERENCE	TEMPERATURE ADJUSTMENT	CONDUCTOR AMPACITY [A]	CHECK CONDUCTOR AMPACITY > FLA?	CHECK OCPD RATING > FLA x 1.25?	CHECK OCPD COMPLIANT WITH 240.101(A)?	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA	PVC CONDUIT SIZE	ADDITIONAL GROUND CABLE
MV-OH-01	RISER POLE	POI	OVERHEAD SPACED	2	4,000	225	100.4	BREAKER	151	150%	AL	#2	310.21	1.00	163	PASS	PASS	PASS	0.05%	0.05%	N/A	NONE
MV-UG-01	SOLAR TRANSFORMER A	RISER POLE	UNDERGROUND IN CONDUIT	2	4,000	1,350	100.4	BREAKER	151	150%	AL	#1	311.60(C)(78)	1.00	135	PASS	PASS	PASS	0.26%	0.31%	5"	CU #6
MV-UG-02	SOLAR TRANSFORMER B	SOLAR TRANSFORMER A	UNDERGROUND IN CONDUIT	1	1,000	850	25.1	BREAKER	38	150%	AL	#1	311.60(C)(78)	1.00	135	PASS	PASS	PASS	0.04%	0.35%	5"	CU #6

AC CIRCUIT CALCULATIONS

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD A	TRANSFORMER A	600	2880.0	3600	4000	RMC	3.5"	CU #3/0 GEC	11	CU 500MCM	CU 500MCM	4180	4730	4541	0.96	1.00	10	0.02%	0.08%
INVERTER A1	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	10	0.04%	0.12%
INVERTER A2	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	15	0.06%	0.14%
INVERTER A3	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	20	0.08%	0.16%
INVERTER A4	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	25	0.10%	0.18%
INVERTER A5	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	30	0.12%	0.20%
INVERTER A6	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	35	0.15%	0.22%
INVERTER A7	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	40	0.17%	0.24%
INVERTER A8	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	45	0.19%	0.26%
INVERTER A9	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	50	0.21%	0.28%
INVERTER A10	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	55	0.23%	0.30%
INVERTER A11	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	60	0.25%	0.33%
INVERTER A12	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	65	0.27%	0.35%
INVERTER A13	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	65	0.27%	0.35%
INVERTER A14	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	60	0.25%	0.33%
INVERTER A15	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	55	0.23%	0.30%
INVERTER A16	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	50	0.21%	0.28%
INVERTER A17	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	45	0.19%	0.26%
INVERTER A18	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	40	0.17%	0.24%
INVERTER A19	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	35	0.15%	0.22%
INVERTER A20	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	30	0.12%	0.20%
INVERTER A21	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	25	0.10%	0.18%
INVERTER A22	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	20	0.08%	0.16%
INVERTER A23	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	15	0.06%	0.14%
INVERTER A24	SOLAR AC SWITCHBOARD A	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	10	0.04%	0.12%
SOLAR AC SWITCHBOARD B	TRANSFORMER B	600	960.0	1200	1200	RMC	3"	CU #3/0 GEC	4	CU 350MCM	NONE	1240	1400	1344	0.96	1.00	10	0.03%	0.08%
INVERTER B1	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	10	0.04%	0.12%
INVERTER B2	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	15	0.06%	0.14%
INVERTER B3	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	20	0.08%	0.16%
INVERTER B4	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	25	0.10%	0.19%
INVERTER B5	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	25	0.10%	0.19%
INVERTER B6	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	20	0.08%	0.16%
INVERTER B7	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	15	0.06%	0.14%
INVERTER B8	SOLAR AC SWITCHBOARD B	600	120.0	150	150	EMT/PVC	2"	CU #6	1	CU #1/0	NONE	150	170	163	0.96	1.00	10	0.04%	0.12%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.26%

DC STRING WIRING CALCULATION – CONDUIT	
STRING IMAX SIMULATED [A]	17.04
MAX CONTINUOUS FAULT CURRENT FROM PARALLEL SOURCES [AMPS]	17.04
1.25x MAX CONTINUOUS FAULT CURRENT [AMPS]	21.30
MAX # OF WIRES PER CONDUIT	9
DERATE FOR # OF CONDUCTORS IN A CONDUIT	0.7
MAX AMBIENT TEMPERATURE	32
TEMPERATURE DERATE	0.96
WIRE GAUGE	CU #10
75 DEG AMPACITY WITHOUT COU ADJUSTMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	26.88
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT (SIMULATED) FUSE RATING [AMPS]	25
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	17.04
IS FUSE RATING >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.9(B)

SAM SIMULATED VALUES	
MAXIMUM CURRENT [A]	17.04
MAXIMUM VOLTAGE [V]	1347.71

THE STRING MAX CURRENT IS CALCULATED BY SYSTEM ADVISOR MODEL SIMULATION PROGRAM PROVIDED BY THE NATIONAL RENEWABLE ENERGY LABORATORY, REFERENCE SAND 2004-3535, PHOTOVOLTAIC ARRAY PERFORMANCE MODEL, AS ALLOWABLE BY NEC 690.8(A)(1)(2), THE CALCULATED CURRENT IS 101% OF THE VALUE USING 690.8(A)(1)(1).

MODULE SPECIFICATIONS	
MAKE/MODEL	HELIENE 144HC M10 SL (BIFACIAL)
POWER [W]	540
ISC [A]	13.50
IMP [A]	12.77
VOC [V]	50.22
VMP [V]	42.32
β VOC [%/degC]	-0.250%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [℃]	32
ASHRAE LOW [℃]	-15.6
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	14040
STRING ISC [A]	13.50
STRING IMP [A]	12.77
STRING VMP [V]	1100.32
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -15.6 ℃	1.10
VOC @ -15.6 ℃ [V]	55.32
MAX STRING VOC [V]	1438.3

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC - REV 4	SK	SK	RI
07/11/2024	IFC - REV 2	SK	MW	RI
04/24/2023	IFC - REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MeB	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

STATE OF CONNECTICUT · RICHARD A. IVINS · PEN.0029262 · LICENSED PROFESSIONAL ENGINEER

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E310

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

INVERTERS A1–A24		
STRING NUMBER	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
A1–1	755	1.71%
A1–2	655	1.49%
A1–3	640	1.45%
A1–4	740	1.68%
A1–5	840	1.91%
A1–6	945	2.15%
A1–7	925	2.10%
A1–8	825	1.87%
A1–9	725	1.65%
A1–10	620	1.41%
A1–11	605	1.37%
A2–1	705	1.60%
A2–2	805	1.83%
A2–3	905	2.06%
A2–4	890	2.02%
A2–5	790	1.79%
A2–6	685	1.56%
A2–7	585	1.33%
A2–8	570	1.29%
A2–9	670	1.52%
A2–10	770	1.75%
A2–11	875	1.99%
A3–1	850	1.93%
A3–2	750	1.70%
A3–3	650	1.48%
A3–4	545	1.24%
A3–5	530	1.20%
A3–6	635	1.44%
A3–7	735	1.67%
A3–8	835	1.90%
A3–9	820	1.86%
A3–10	720	1.64%
A3–11	615	1.40%
A4–1	510	1.16%
A4–2	495	1.12%
A4–3	595	1.35%
A4–4	695	1.58%
A4–5	800	1.82%
A4–6	785	1.78%
A4–7	680	1.54%
A4–8	580	1.32%
A4–9	475	1.08%
A4–10	460	1.04%
A4–11	565	1.28%
A5–1	660	1.50%
A5–2	760	1.73%
A5–3	745	1.69%
A5–4	645	1.46%
A5–5	540	1.23%
A5–6	440	1.00%
A5–7	425	0.97%
A5–8	525	1.19%
A5–9	625	1.42%
A5–10	730	1.66%
A5–11	715	1.62%
A6–1	605	1.37%
A6–2	505	1.15%
A6–3	405	0.92%
A6–4	390	0.89%
A6–5	490	1.11%
A6–6	590	1.34%
A6–7	695	1.58%
A6–8	675	1.53%
A6–9	575	1.31%
A6–10	475	1.08%
A6–11	370	0.84%
A7–1	350	0.79%
A7–2	450	1.02%
A7–3	555	1.26%
A7–4	655	1.49%
A7–5	640	1.45%
A7–6	535	1.22%
A7–7	435	0.99%
A7–8	335	0.76%
A7–9	320	0.73%
A7–10	420	0.95%
A7–11	520	1.18%
A8–1	620	1.41%
A8–2	605	1.37%
A8–3	500	1.14%
A8–4	400	0.91%
A8–5	295	0.67%
A8–6	280	0.64%
A8–7	385	0.87%
A8–8	485	1.10%
A8–9	585	1.33%
A8–10	570	1.29%
A8–11	470	1.07%
A9–1	365	0.83%
A9–2	260	0.59%
A9–3	245	0.56%
A9–4	345	0.78%
A9–5	450	1.02%
A9–6	550	1.25%
A9–7	535	1.22%
A9–8	430	0.98%
A9–9	330	0.75%
A9–10	230	0.52%
A9–11	215	0.49%
A10–1	310	0.70%
A10–2	410	0.93%
A10–3	510	1.16%
A10–4	495	1.12%
A10–5	395	0.90%
A10–6	290	0.66%
A10–7	190	0.43%
A10–8	175	0.40%
A10–9	275	0.62%
A10–10	375	0.85%
A10–11	480	1.09%
A11–1	460	1.04%
A11–2	355	0.81%
A11–3	255	0.58%
A11–4	150	0.34%
A11–5	135	0.31%
A11–6	240	0.55%
A11–7	340	0.77%
A11–8	440	1.00%
A11–9	425	0.97%
A11–10	325	0.74%
A12–1	215	0.49%
A12–2	115	0.26%
A12–3	85	0.19%
A12–4	185	0.42%
A12–5	290	0.66%
A12–6	390	0.89%
A12–7	380	0.86%
A12–8	275	0.62%
A12–9	175	0.40%
A12–10	70	0.16%
A13–1	80	0.18%
A13–2	180	0.41%
A13–3	285	0.65%
A13–4	385	0.87%
A13–5	400	0.91%
A13–6	300	0.68%
A13–7	200	0.45%
A13–8	95	0.22%
A13–9	110	0.25%
A13–10	215	0.49%
A14–1	310	0.70%
A14–2	415	0.94%
A14–3	430	0.98%
A14–4	325	0.74%
A14–5	225	0.51%
A14–6	125	0.28%
A14–7	140	0.32%
A14–8	240	0.55%
A14–9	345	0.78%
A14–10	445	1.01%
A15–1	455	1.03%
A15–2	350	0.79%
A15–3	250	0.57%
A15–4	150	0.34%
A15–5	165	0.37%
A15–6	265	0.60%
A15–7	365	0.83%
A15–8	470	1.07%
A15–9	485	1.10%
A15–10	385	0.87%
A16–1	275	0.62%
A16–2	175	0.40%
A16–3	190	0.43%
A16–4	290	0.66%
A16–5	395	0.90%
A16–6	495	1.12%
A16–7	510	1.16%
A16–8	410	0.93%
A16–9	310	0.70%
A16–10	205	0.47%
A17–1	215	0.49%
A17–2	320	0.73%
A17–3	420	0.95%
A17–4	520	1.18%
A17–5	540	1.23%
A17–6	435	0.99%
A17–7	335	0.76%
A17–8	235	0.53%
A17–9	250	0.57%
A17–10	350	0.79%
A18–1	445	1.01%
A18–2	550	1.25%
A18–3	565	1.28%
A18–4	460	1.04%
A18–5	360	0.82%
A18–6	260	0.59%
A18–7	275	0.62%
A18–8	375	0.85%
A18–9	480	1.09%
A18–10	580	1.32%
A19–1	590	1.34%
A19–2	490	1.11%
A19–3	390	0.89%
A19–4	285	0.65%
A19–5	300	0.68%
A19–6	405	0.92%
A19–7	505	1.15%
A19–8	610	1.39%
A19–9	625	1.42%
A19–10	520	1.18%
A20–1	415	0.94%
A20–2	310	0.70%
A20–3	330	0.75%
A20–4	430	0.98%
A20–5	530	1.20%
A20–6	635	1.44%
A20–7	650	1.48%
A20–8	545	1.24%
A20–9	445	1.01%
A20–10	345	0.78%
A21–1	355	0.81%
A21–2	455	1.03%
A21–3	560	1.27%
A21–4	660	1.50%
A21–5	675	1.53%
A21–6	575	1.31%
A21–7	475	1.08%
A21–8	370	0.84%
A21–9	385	0.87%
A21–10	490	1.11%
A22–1	585	1.33%
A22–2	685	1.56%
A22–3	700	1.59%
A22–4	600	1.36%
A22–5	500	1.14%
A22–6	395	0.90%
A22–7	410	0.93%
A22–8	515	1.17%
A22–9	615	1.40%
A22–10	720	1.64%
A23–1	730	1.66%
A23–2	625	1.42%
A23–3	525	1.19%
A23–4	425	0.97%
A23–5	440	1.00%
A23–6	540	1.23%
A23–7	645	1.46%
A23–8	745	1.69%
A23–9	760	1.73%
A23–10	660	1.50%
A24–1	550	1.25%
A24–2	450	1.02%
A24–3	465	1.06%
A24–4	570	1.29%
A24–5	670	1.52%
A24–6	770	1.75%
A24–7	785	1.78%
A24–8	685	1.56%
A24–9	585	1.33%
A24–10	480	1.09%
AVERAGE VOLTAGE DROP		1.08%

INVERTERS B1–B8		
STRING NUMBER	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
B1–1	480	1.09%
B1–2	580	1.32%
B1–3	680	1.54%
B1–4	665	1.51%
B1–5	565	1.28%
B1–6	460	1.04%
B1–7	445	1.01%
B1–8	545	1.24%
B1–9	650	1.48%
B1–10	630	1.43%
B2–1	525	1.19%
B2–2	425	0.97%
B2–3	410	0.93%
B2–4	510	1.16%
B2–5	610	1.39%
B2–6	595	1.35%
B2–7	495	1.12%
B2–8	395	0.90%
B2–9	380	0.86%
B2–10	480	1.09%
B3–1	575	1.31%
B3–2	560	1.27%
B3–3	460	1.04%
B3–4	355	0.81%
B3–5	340	0.77%
B3–6	440	1.00%
B3–7	540	1.23%
B3–8	525	1.19%
B3–9	425	0.97%
B3–10	325	0.74%
B4–1	300	0.68%
B4–2	405	0.92%
B4–3	505	1.15%
B4–4	490	1.11%
B4–5	385	0.87%
B4–6	285	0.65%
B4–7	270	0.61%
B4–8	370	0.84%
B4–9	470	1.07%
B4–10	455	1.03%
B5–1	350	0.79%
B5–2	250	0.57%
B5–3	235	0.53%
B5–4	335	0.76%
B5–5	435	0.99%
B5–6	420	0.95%
B5–7	320	0.73%
B5–8	220	0.50%
B5–9	205	0.47%
B5–10	305	0.69%
B5–11	405	0.92%
B6–1	395	0.90%
B6–2	295	0.67%
B6–3	190	0.43%
B6–4	175	0.40%
B6–5	275	0.62%
B6–6	380	0.86%
B6–7	360	0.82%
B6–8	260	0.59%
B6–9	160	0.36%
B6–10	145	0.33%
B6–11	245	0.56%
B7–1	350	0.79%
B7–2	335	0.76%
B7–3	235	0.53%
B7–4	135	0.31%
B7–5	120	0.27%
B7–6	220	0.50%
B7–7	320	0.73%
B7–8	305	0.69%
B7–9	200	0.45%
B7–10	100	0.23%
B7–11	85	0.19%
B8–1	195	0.44%
B8–2	295	0.67%
B8–3	285	0.65%
B8–4	185	0.42%
B8–5	85	0.19%
B8–6	100	0.23%
B8–7	200	0.45%
B8–8	300	0.68%
B8–9	315	0.72%
B8–10	215	0.49%
B8–11	115	0.26%
AVERAGE VOLTAGE DROP		0.81%

PM	ENG	CHK	REVISION DESCRIPTION	DATE
SK	SK	RI	IFC – REV 4	03/07/2025
SK	MW	RI	IFC – REV 2	07/11/2024
SK	SK	RI	IFC – REV 1	04/24/2023
SK	Matt	RI	ISSUE FOR CONSTRUCTION	12/14/2022

PURE POWER ENGINEERING
111 E. STATE STREET, MONTVILLE, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023462

DEVELOPER: Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

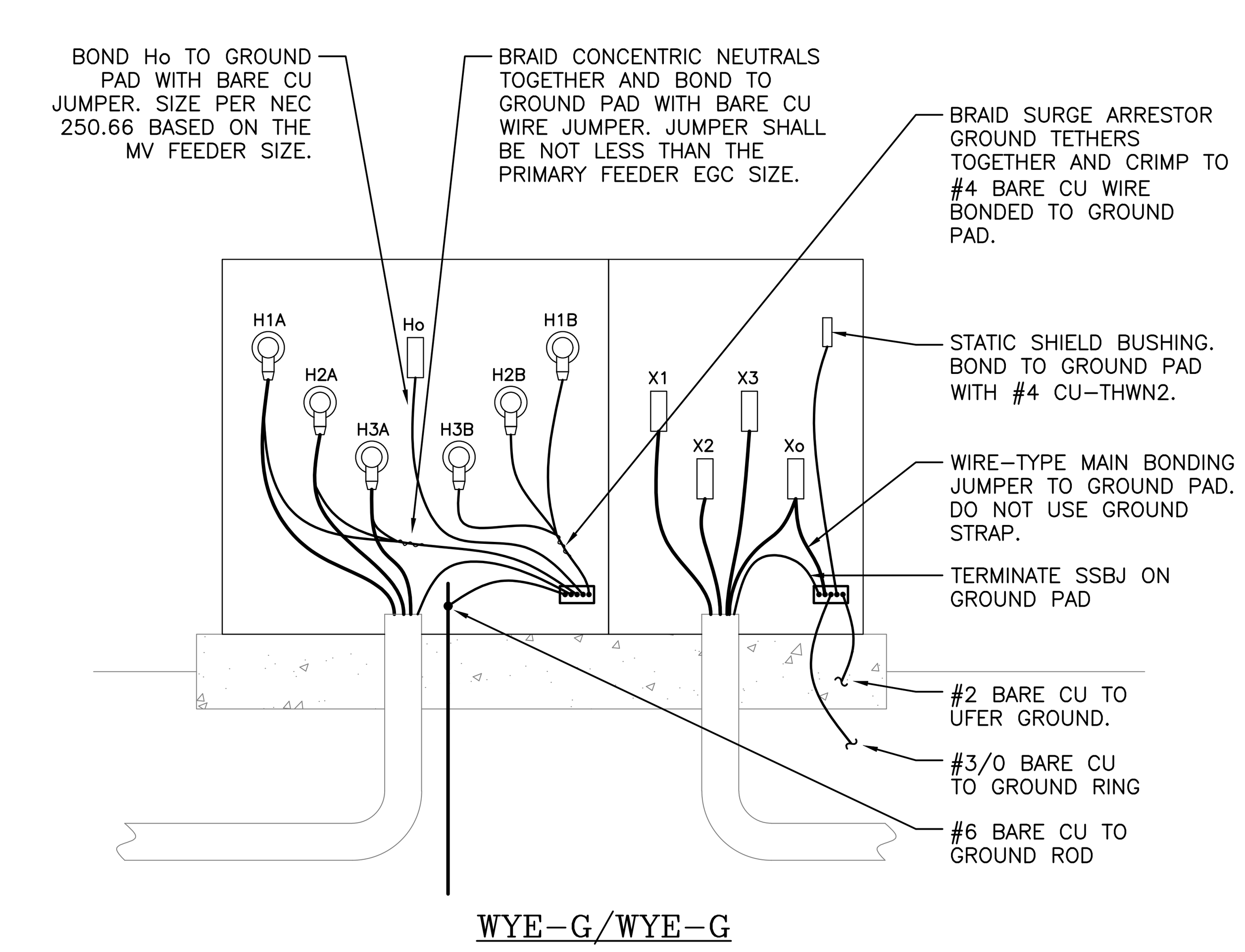
DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

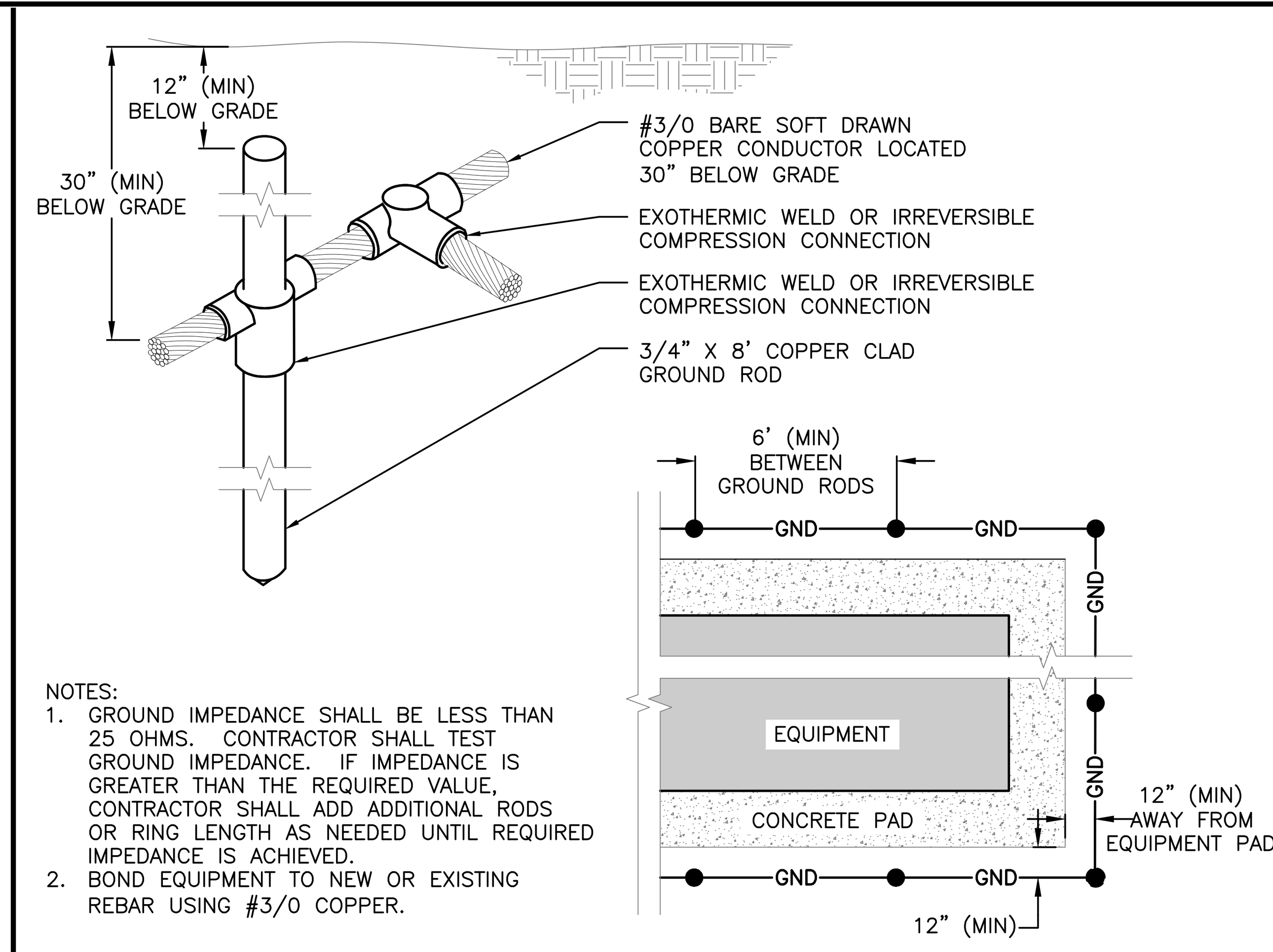
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E311

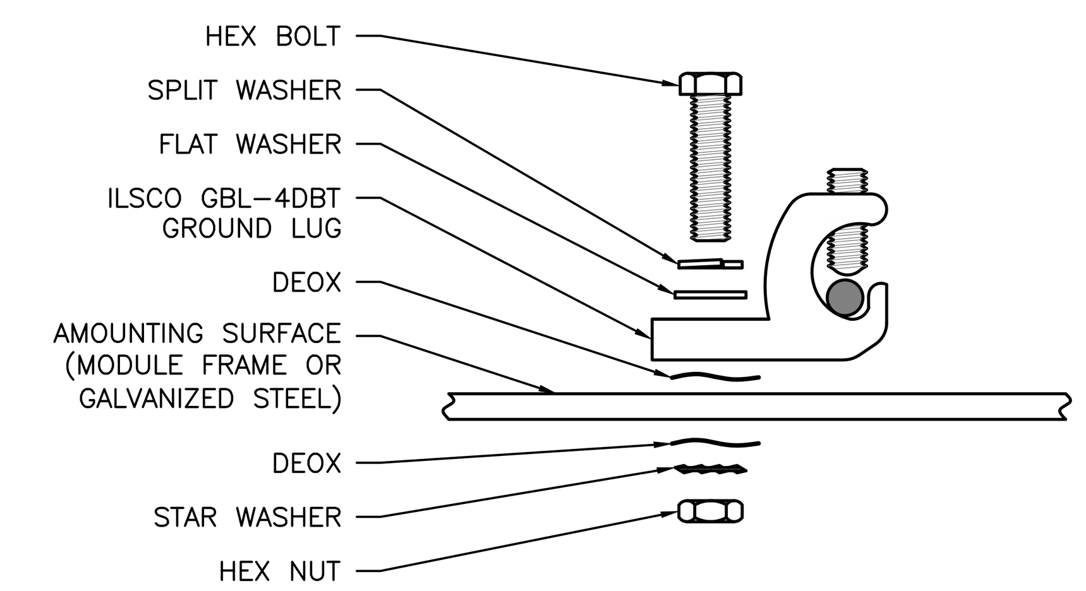


① TRANSFORMER GROUNDING: WYE-G/WYE-G
SCALE: NONE



NOTES:
1. GROUND IMPEDANCE SHALL BE LESS THAN 25 OHMS. CONTRACTOR SHALL TEST GROUND IMPEDANCE. IF IMPEDANCE IS GREATER THAN THE REQUIRED VALUE, CONTRACTOR SHALL ADD ADDITIONAL RODS OR RING LENGTH AS NEEDED UNTIL REQUIRED IMPEDANCE IS ACHIEVED.
2. BOND EQUIPMENT TO NEW OR EXISTING REBAR USING #3/0 COPPER.

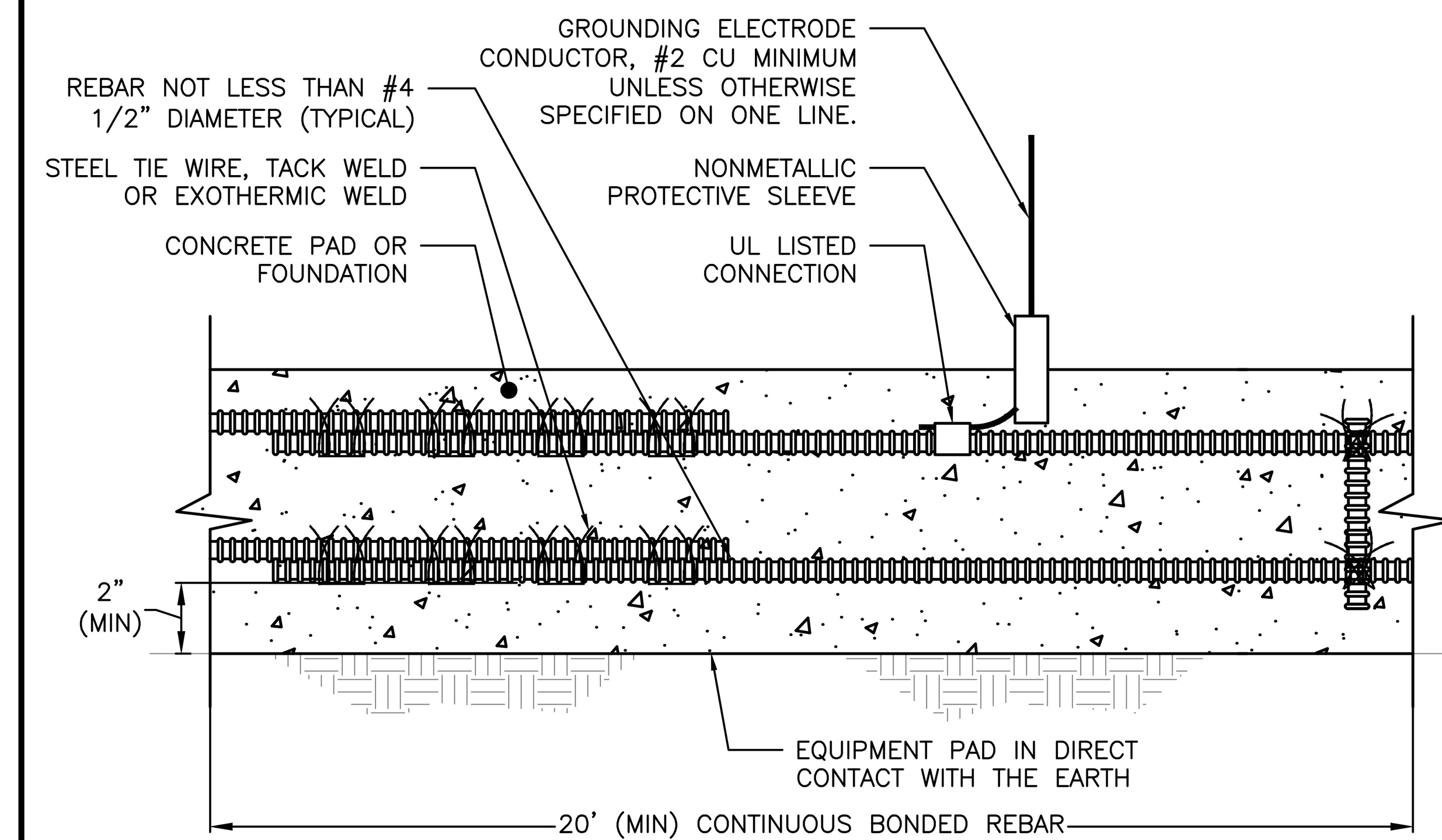
② GROUND RING DETAIL
SCALE: NONE



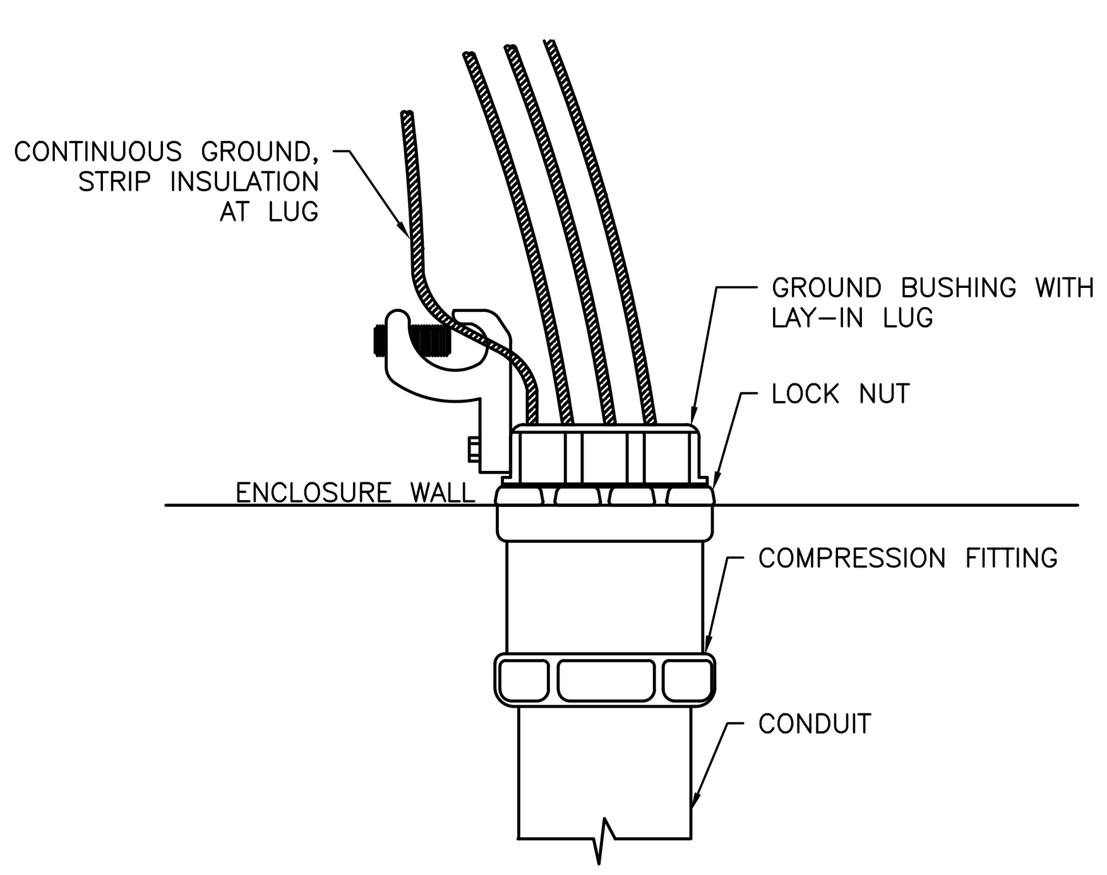
NOTES
1. ALL HARDWARE TO BE STAINLESS STEEL.
2. REFER TO ILSCO MANUAL FOR ADDITIONAL REQUIREMENTS AND TORQUE VALUES

③ GROUND LUG DETAIL – ILSCO
SCALE: NONE

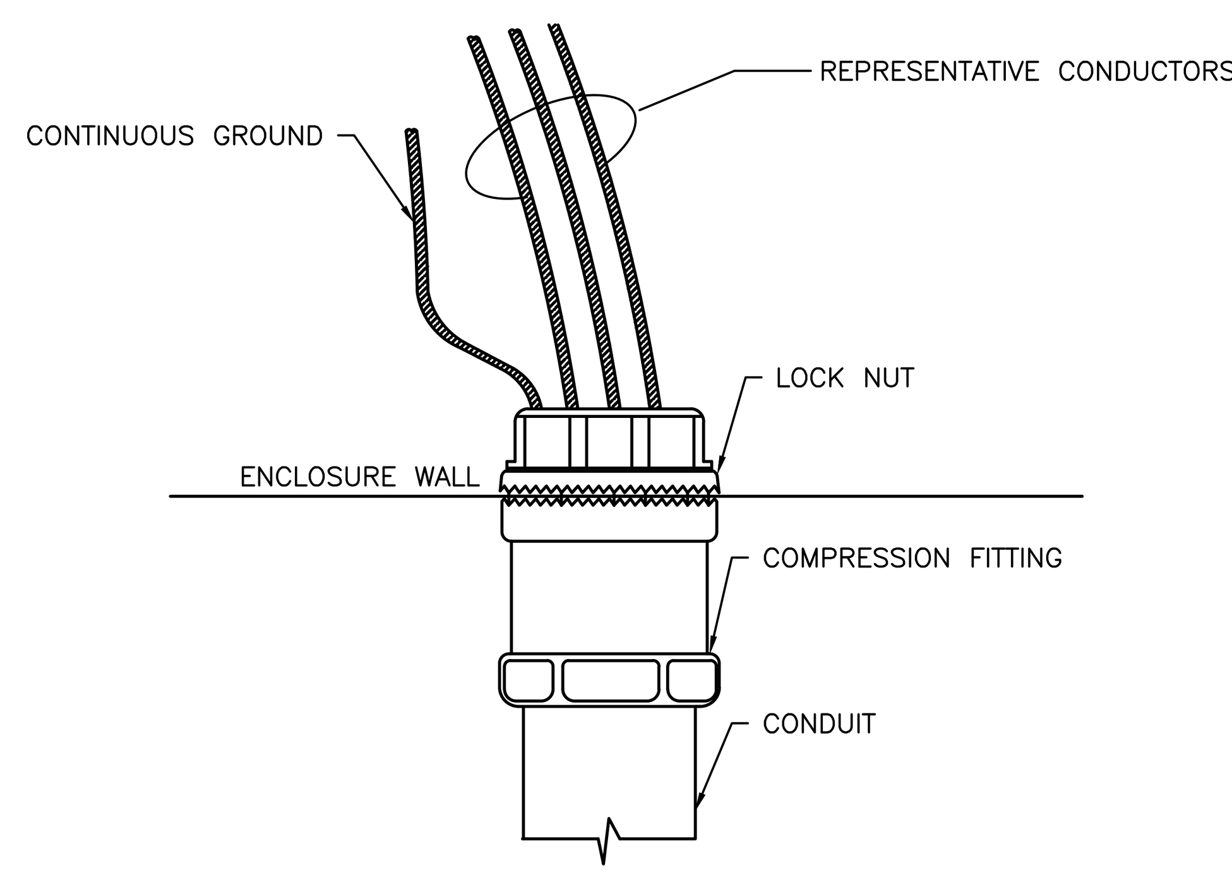
NOTE:
SHORTER LENGTHS OF REBAR CAN BE CONNECTED TOGETHER TO FORM AN ELECTRODE OF AT LEAST 20' BY STEEL TIE WIRES, EXOTHERMIC WELDING, OR WELDING.



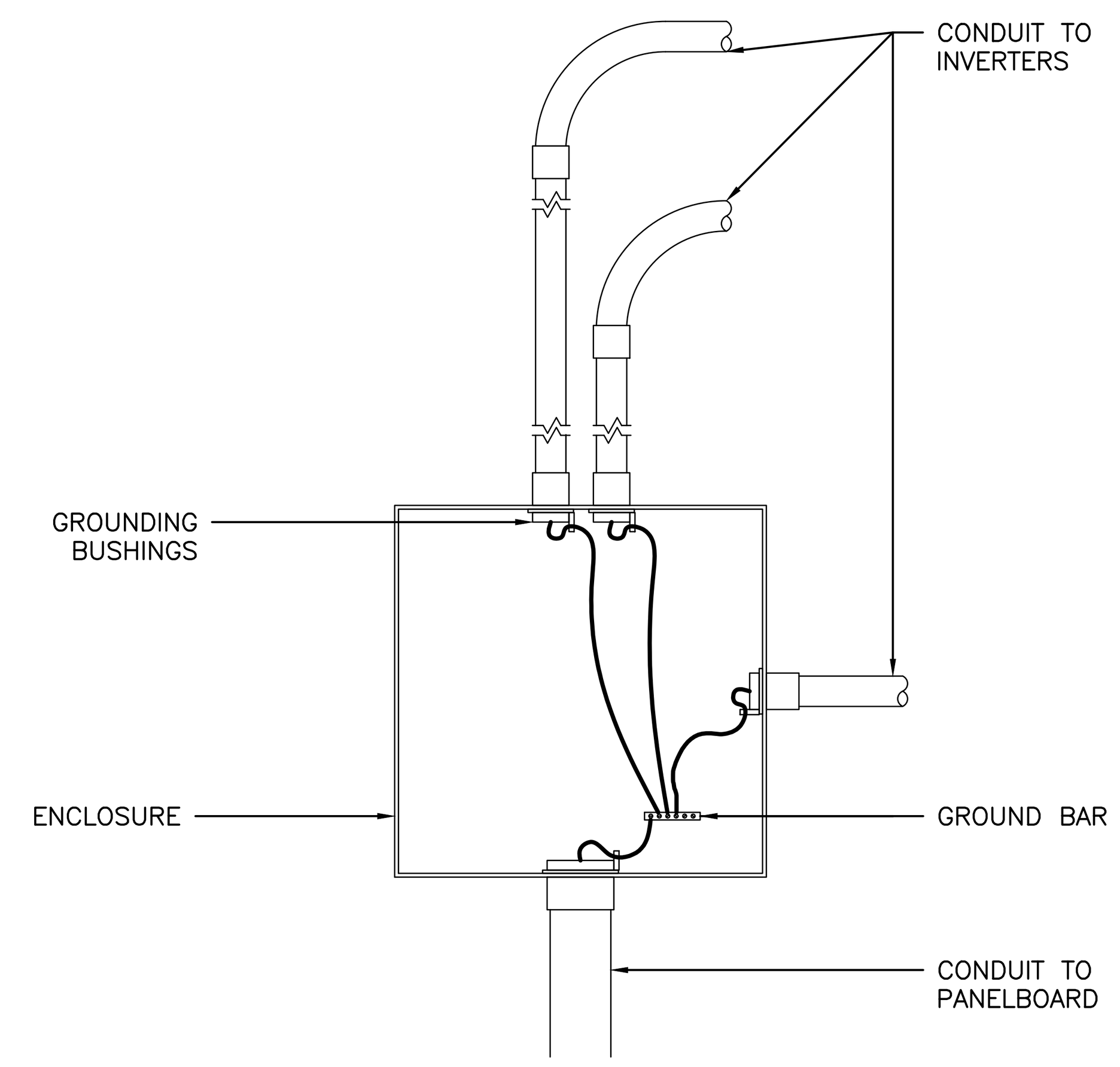
④ EQUIPMENT PAD GROUNDING – UFER
SCALE: NONE



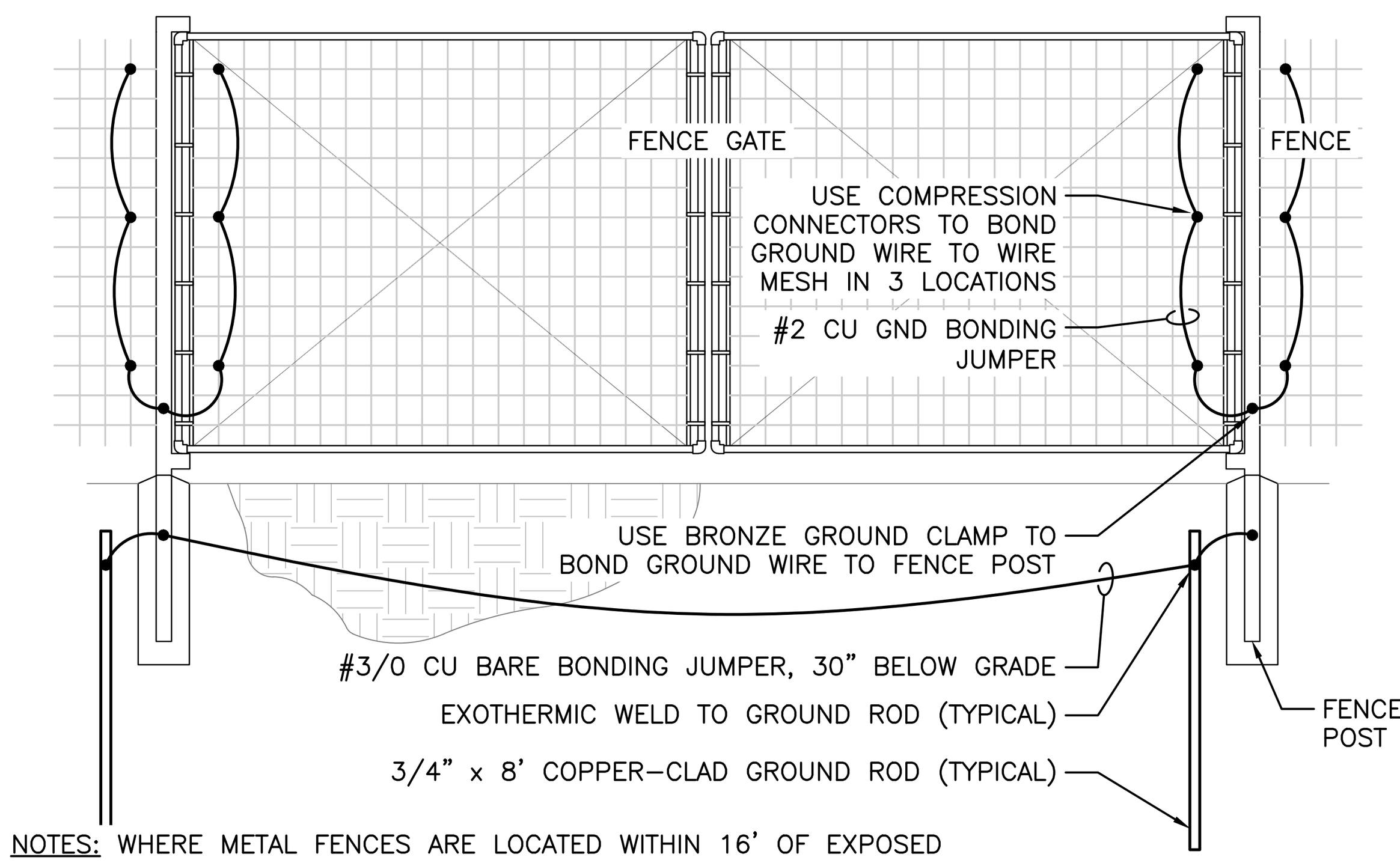
⑤ CONDUIT CONNECTOR BONDING DETAIL
SCALE: NONE



⑥ MYER'S HUB BONDING DETAIL
SCALE: NONE



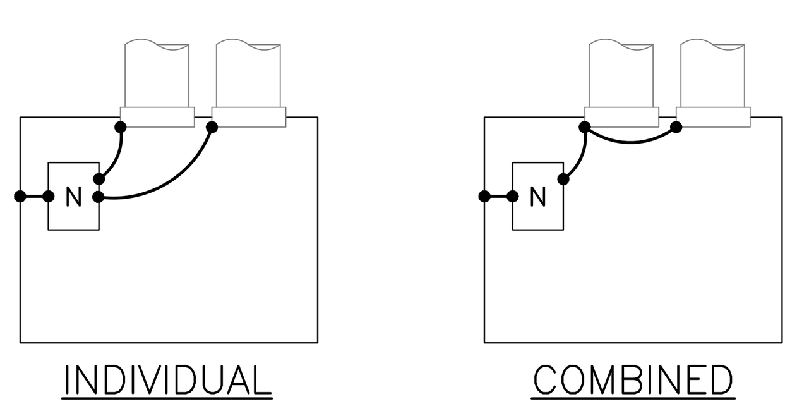
⑦ PULL BOX/TROUGH GROUNDING DETAIL
SCALE: NONE



NOTES: WHERE METAL FENCES ARE LOCATED WITHIN 16' OF EXPOSED CONDUCTORS OR EQUIPMENT:
(1) WHERE BARE OVERHEAD CONDUCTORS CROSS THE FENCE, BONDING JUMPERS SHALL BE INSTALLED ON EACH SIDE OF THE CROSSING.
(2) GATES SHALL BE BONDED TO THE GATE SUPPORT POST, AND EACH GATE SUPPORT POST SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM.
(3) ANY GATE OR OTHER OPENING IN THE FENCE SHALL BE BONDED ACROSS THE OPENING BY A BURIED BONDING JUMPER.
(4) THE GROUNDING GRID OR GROUNDING ELECTRODE SYSTEMS SHALL BE EXTENDED TO COVER THE SWING OF ALL GATES.
(5) THE BARBED WIRE STRANDS ABOVE THE FENCE SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM.

⑧ FENCE GROUNDING DETAIL
SCALE: NONE

NEC 250.102(C)(1)
SSBJ IS SIZED PER TABLE 250.102(C)(1) BASED ON THE SIZE OF PHASE CONDUCTORS IN EACH INDIVIDUAL CONDUIT



NEC 250.102(C)(2)
SSBJ IS SIZED PER TABLE 250.102(C)(2) BASED ON THE COMBINED AREA OF PARALLEL PHASE CONDUCTORS

TABLE 250.102(C)(1)

SIZE OF LARGEST UNGROUNDED CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS (AWG/KCMIL)		SIZE OF GROUNDED CONDUCTOR OR BONDING JUMPER (AWG/KCMIL)	
COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM	COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM
2 OR SMALLER	1/0 OR SMALLER	8	6
1 OR 1/0	2/0 OR 3/0	6	4
2 OR 2/0	4/0 OR 250	4	2
OVER 3/0 THROUGH 350	OVER 250 THROUGH 500	2	1/0
OVER 350 THROUGH 600	OVER 500 THROUGH 900	1/0	3/0
OVER 600 THROUGH 1100	OVER 900 THROUGH 1750	2/0	4/0
OVER 1100	OVER 1750	REFER TO NOTES IN NEC TABLE 250.102(C)(1)	

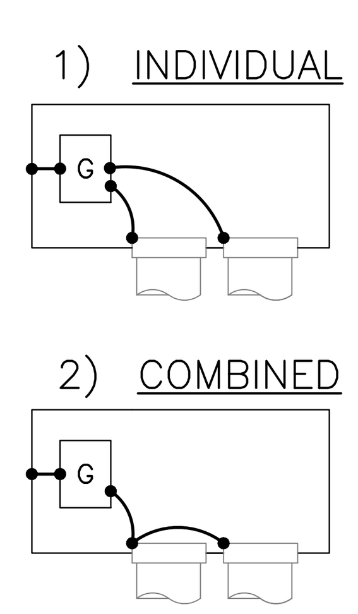
⑨ SUPPLY SIDE BONDING JUMPERS (SSBJ)
SCALE: NONE

A) FOR CONCENTRIC KNOCKOUTS, USE BONDING JUMPERS AS FOLLOWS:

TABLE 250.122

OVERCURRENT DEVICE CIRCUIT NOT EXCEEDING (AMPERES)	SIZE (AWG OR KCMIL)	
	COPPER	ALUMINUM
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	600
3000	400	600
4000	500	750

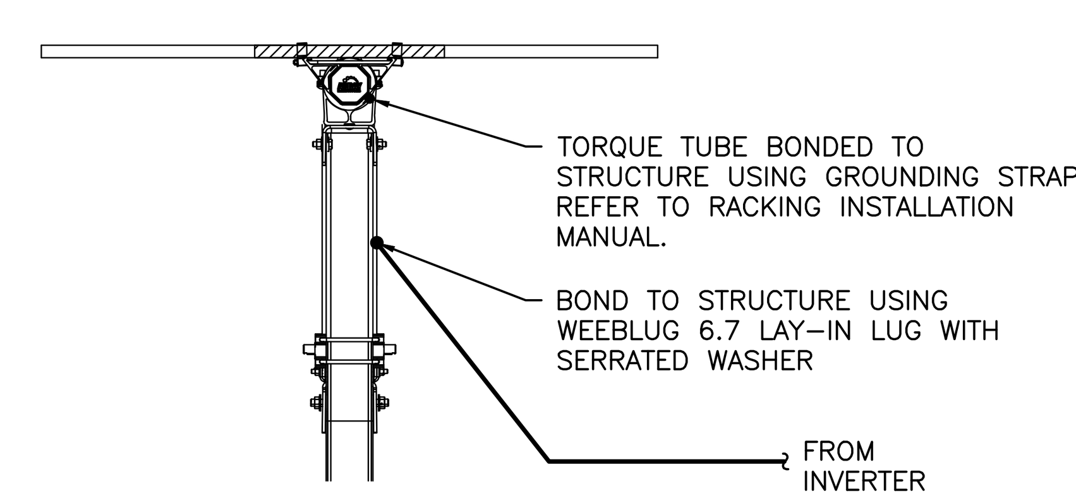
FOR PARALLEL FEEDERS – NEC 250.102(D)
EQUIPMENT BONDING JUMPER IS SIZED PER TABLE 250.122, REGARDLESS IF COMBINED OR INDIVIDUAL BONDING JUMPERS ARE USED



B) FOR NON-CONCENTRIC KNOCKOUTS, THE FOLLOWING METHODS SHALL BE PERMITTED (PER NEC 250.97)
1) THREADLESS COUPLINGS AND CONNECTORS FOR CABLES WITH METAL SHEATS
2) TWO LOCKNUTS, ON RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT, ONE INSIDE AND ONE OUTSIDE OF BOXES AND CABINETS
3) FITTINGS WITH SHOULDERS THAT SEAT FIRMLY AGAINST THE BOX OR CABINET, SUCH AS ELECTRICAL METALLIC TUBING CONNECTORS, FLEXIBLE METAL CONDUIT CONNECTORS, AND CABLE CONNECTORS, WITH ON LOCKNUT ON THE INSIDE OF BOXES AND CABINETS
4) LISTED FITTINGS (SUCH AS MEYERS HUB)

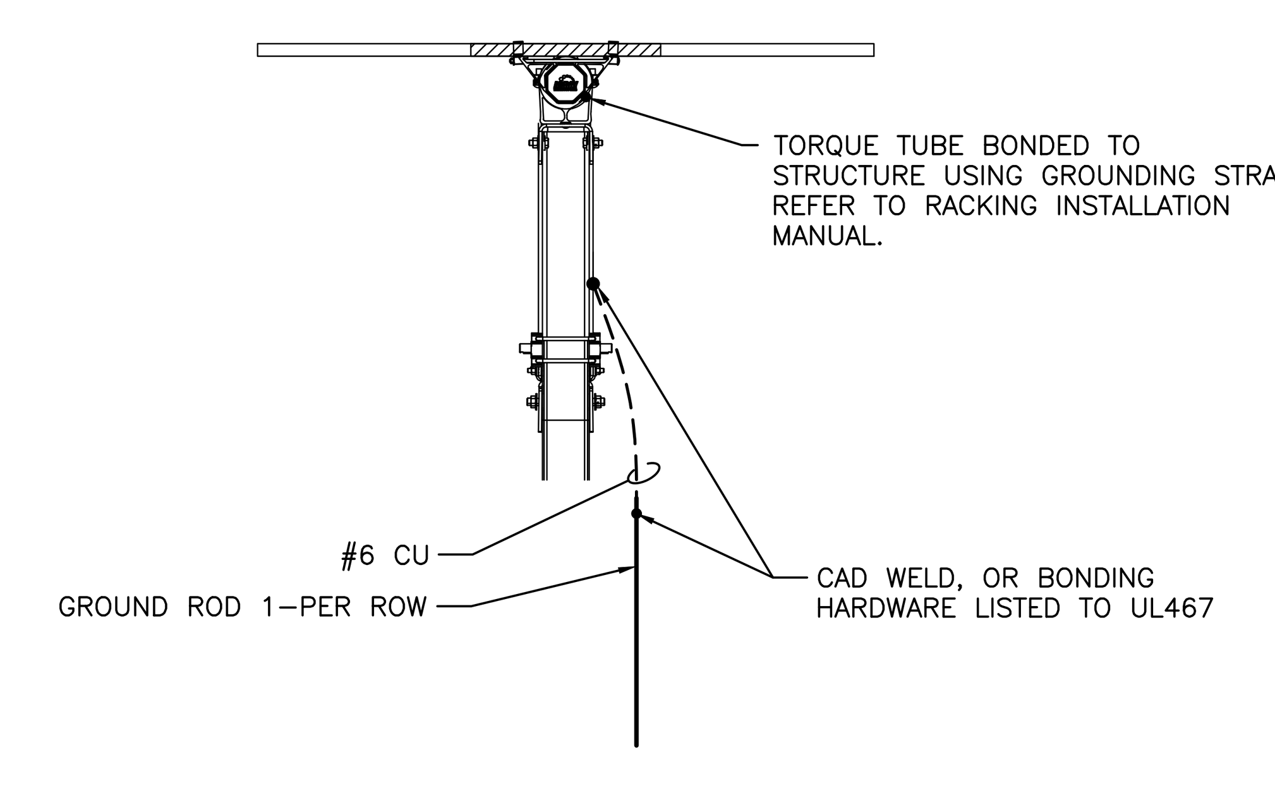
⑩ LOAD SIDE EQUIPMENT BONDING JUMPER
SCALE: NONE

NOTES:
1. EACH SUBARRAY CONNECTED TO AN INVERTER SHALL HAVE AN EGC RUN TO THAT INVERTER
2. PV MODULES AND RAILS GROUNDED PER NEC 690.43



⑪ ARRAY GROUNDING – END POST
SCALE: NONE

NOTES:
1. EACH SUBARRAY CONNECTED TO AN INVERTER SHALL HAVE AN EGC RUN TO THAT INVERTER
2. PV MODULES AND RAILS GROUNDED PER NEC 690.43



⑫ ARRAY GROUNDING – MOTOR POST
SCALE: NONE

DRAWING TITLE
GROUNDING DETAILS

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MeB	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies
a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

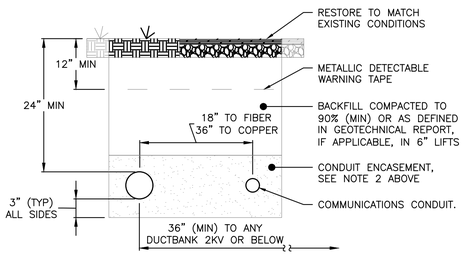
PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING #
E401

RULER IN INCHES:

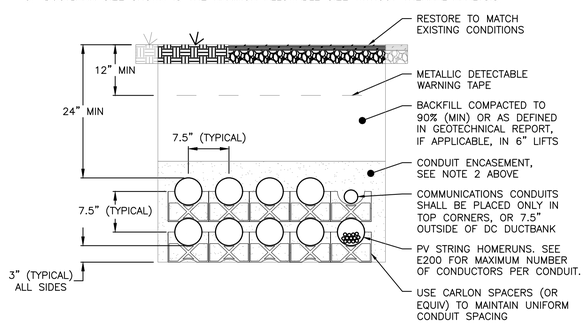
PLOT DATE: 3/7/2025 6:09 PM

NOTES:
1. ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS >= 18" DEEP (NEC 250.86 EXCEPTION 3)
2. UNDER ROADS AND PARKING AREAS ENCASEMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASEMENT SHALL BE EITHER SAND, NATIVE BACKFILL CONTAINING NO ROCKS LARGER THAN 3/4" AND FREE FROM SHARP ANGULAR SUBSTANCES, OR SOIL ON SITE AS CONFIRMED ACCEPTABLE BY SITE SUPERVISOR.
3. CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
4. IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE AT LOWEST ELEVATION.



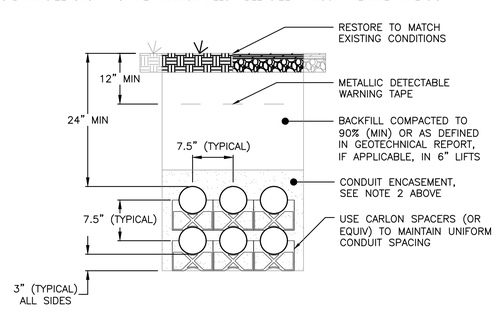
1 TYPICAL MV DUCTBANK
SCALE: NONE

NOTES:
1. ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS >= 18" DEEP (NEC 250.86 EXCEPTION 3)
2. UNDER ROADS AND PARKING AREAS ENCASEMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASEMENT SHALL BE EITHER SAND, NATIVE BACKFILL CONTAINING NO ROCKS LARGER THAN 3/4" AND FREE FROM SHARP ANGULAR SUBSTANCES, OR SOIL ON SITE AS CONFIRMED ACCEPTABLE BY SITE SUPERVISOR.
3. CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
4. IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE AT LOWEST ELEVATION.
5. DUCTBANK SIZE SHOWN IS THE MAXIMUM ALLOWABLE SIZE WITHOUT THERMAL ANALYSIS.



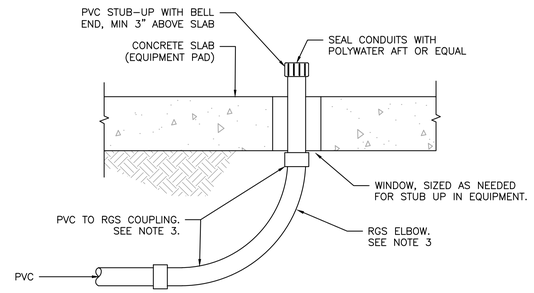
2 TYPICAL DC DUCTBANK
SCALE: NONE

NOTES:
1. ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS >= 18" DEEP (NEC 250.86 EXCEPTION 3)
2. UNDER ROADS AND PARKING AREAS ENCASEMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASEMENT SHALL BE EITHER SAND, NATIVE BACKFILL CONTAINING NO ROCKS LARGER THAN 3/4" AND FREE FROM SHARP ANGULAR SUBSTANCES, OR SOIL ON SITE AS CONFIRMED ACCEPTABLE BY SITE SUPERVISOR.
3. CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
4. IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE AT LOWEST ELEVATION.
5. DUCTBANK SIZE SHOWN IS THE MAXIMUM ALLOWABLE SIZE WITHOUT THERMAL ANALYSIS.



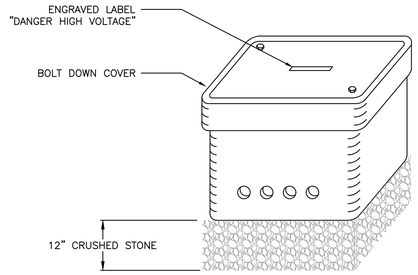
3 TYPICAL AC DUCTBANK
SCALE: NONE

NOTES:
1. INITIALLY INSTALL COUPLING CAP TO PREVENT DAMAGE TO STUB-UP UNTIL GEAR IS SET.
2. INSTALL ROUNDED FITTING BEFORE PULLING CABLES TO AVOID DAMAGE TO CABLES.
3. RMC ELBOW ONLY REQUIRED ON ONE SIDE OF EACH PULL NEAREST THE LOCATION OF THE PULLING MACHINE. ON OPPOSITE SIDE, PVC SCH80 ELBOWS ARE PERMITTED.

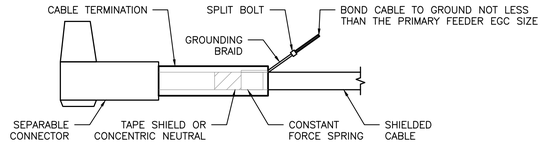


4 EQUIPMENT PAD STUB-UP
SCALE: NONE

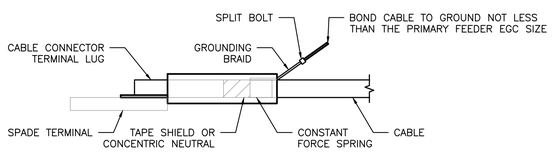
NOTES:
1. BOX SHALL BE RATED T8 FOR USE IN GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, OR RATED T22 FOR USE IN SIDEWALKS OR PARKING LOTS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC. BOXES TO BE USED IN ROADWAYS OR AREAS FREQUENTLY SUBJECT HEAVY VEHICULAR TRAFFIC SHALL BE SUBMITTED TO EEOR FOR APPROVAL
2. CONDUITS SHALL ENTER ON SIDES. MINIMUM BURIAL DEPTHS OF CONDUITS IS 24" BELOW FINISHED GRADE.
3. CONDUIT KNOCKOUTS SHALL BE DRILLED OR PUNCHED ON SITE, QUANTITIES AND SIZES TO MATCH TRENCH PLAN AND COMBINER SCHEDULE.



5 HANDHOLE
SCALE: NONE

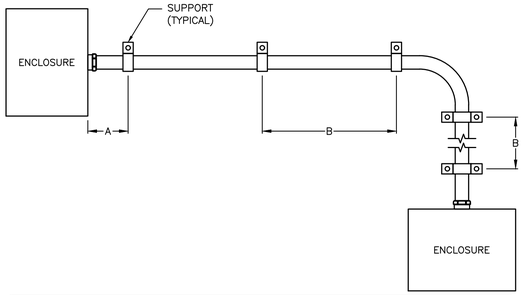


DEAD FRONT MV TERMINATION



LIVE FRONT MV TERMINATION

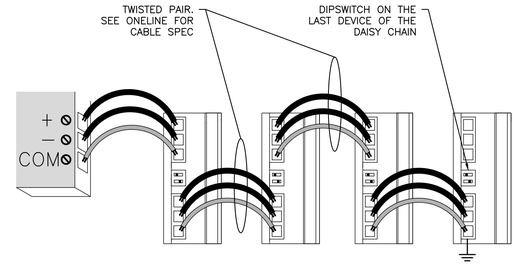
6 MV CABLE TERMINATION
SCALE: NONE



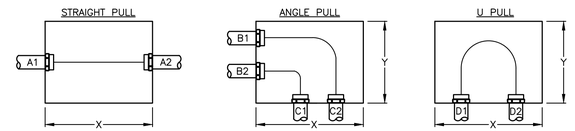
MAXIMUM CONDUIT HARDWARE SPACING			
CONDUIT TYPE	ENCLOSURE TO SUPPORT (A)	SUPPORT TO SUPPORT (B)	NEC ARTICLE
ELECTRICAL METALLIC TUBING (EMT)	3'	10'	358
INTERMEDIATE METAL CONDUIT (IMC)	3'	10'	342
RIGID METAL CONDUIT (RMC)	3'	10'	344
LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)	1'	4.5'	350
PVC (SCH40 & 80) [0.5" - 1"]	3'	3'	352
PVC (SCH40 & 80) [1.25" - 2"]	3'	5'	352
PVC (SCH40 & 80) [2.5" - 3"]	3'	6'	352
PVC (SCH40 & 80) [3.5" - 5"]	3'	7'	352
PVC (SCH40 & 80) [6"]	3'	8'	352

7 CONDUIT SUPPORT SPACING
SCALE: NONE

MONITORING NOTES:
1. REFER TO MONITORING SYSTEM INSTALLATION MANUAL FOR DETAILS ON TERMINAL BLOCKS, CABLE TERMINATIONS, AND SYSTEM CONFIGURATION.
2. WIRELESS TRANSCEIVERS MUST HAVE LINE-OF-SIGHT BETWEEN EACH OTHER.
3. PYRANOMETER MUST BE INSTALLED IN UNSHADED LOCATION.



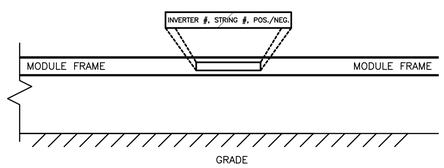
8 MODBUS COMMUNICATIONS
SCALE: NONE



NEC 314.28(A)(1)-(3) PULL BOX SIZING (UP TO 1000V)			
BOX TYPE	LENGTH (X)	HEIGHT (Y)	DISTANCE (D)
STRAIGHT PULL	8 X LARGEST OF A1 & A2	AS NEEDED	N/A
ANGLE PULL	6 X (LARGEST OF B1 & B2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X (LARGEST OF C1 & C2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF E1 & E2
U PULL	AS NEEDED	6 X (LARGEST OF D1 & D2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF F1 & F2

NOTES:
1. REFER TO NEC 314.28 FOR ADDITIONAL REQUIREMENTS.
2. ENSURE CONDUCTOR BEND RADIUS MINIMUMS ARE MET. REFER TO NEC 312.6 FOR ADDITIONAL REQUIREMENTS.

9 PULL BOX & JUNCTION BOX SIZING
SCALE: NONE

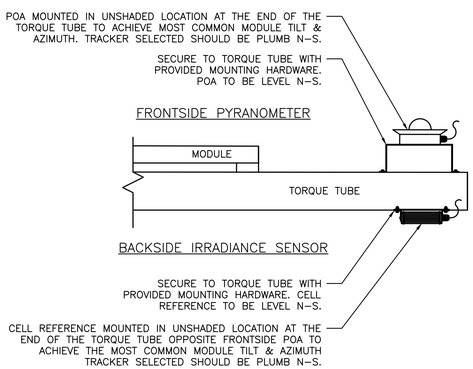


VIEW FROM PROJECT NORTH TO PROJECT SOUTH

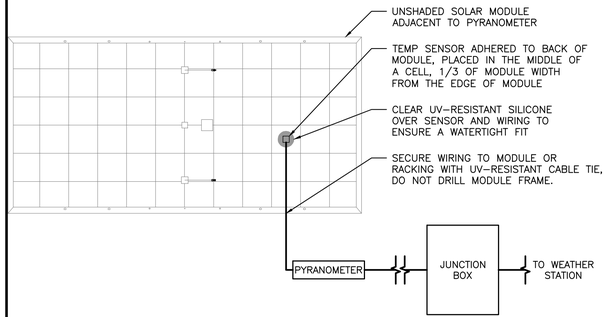
NOTES:

1. INSTALL LABEL ADJACENT TO THE HOME RUN CONNECTOR IDENTIFYING THE INVERTER AND STRING NUMBER. LABEL MUST HAVE RED BACKGROUND FOR POSITIVE OR BLACK BACKGROUND FOR NEGATIVE. TEXT SHALL BE WHITE WITH A HEIGHT THAT IS LEGIBLE. INSTALL LABEL ON LONG SIDE OF MODULE FRAME THAT FACES PROJECT NORTH. LABEL MUST BE UV RESISTANT LISTED FOR OUTDOOR USE.
2. NO CROSS MATING OF CONNECTORS IS AUTHORIZED. BOTH MALE AND FEMALE CONNECTOR ENDS MUST BE OF THE SAME MANUFACTURER TO ENSURE UL COMPLIANCE. THE MANUFACTURER SPECIFIC TOOL KIT MUST BE USED WHILE MAKING FIELD CONNECTIONS.
3. MOUNTING DETAIL APPLIES TO ALL ROOFTOP RACKING PRODUCTS. CONTRACTOR SHALL ADJUST EXACT SIZE AND POSITION OF LABEL BASED ON RACKING PRODUCT. CONTACT GREENSKIES IF RACKING DOES NOT HAVE SPACE FOR FULLY SIZED LABEL.

10 STRING LABEL MOUNTING LOCATION
SCALE: NONE



11 PYRANOMETER MOUNTING
SCALE: NONE



12 MODULE TEMPERATURE SENSOR MOUNTING
SCALE: NONE

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

DATE	REVISION DESCRIPTION	PM	ENG CHK
03/07/2025	IFC - REV 4	SK	RI
07/11/2024	IFC - REV 2	SK	MW
04/24/2023	IFC - REV 1	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	Matt

PUREPOWER ENGINEERING
111 FIELD POINT ROAD, GREENWICH, CT
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029462

DEVELOPER: Greenskies — a Clean Focus company

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

DC SYSTEM SIZE: 4,689,360 kW
AC SYSTEM SIZE: 4,000,000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT: GROUNDMOUNT SYSTEM AT MULNITE - MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE: ELECTRICAL DETAILS

DRAWING #: E402

PLOT DATE: 3/7/2025 6:09 PM

GENERAL NOTES FOR LABELS:
1. LABEL SCALE 1:2 UNLESS NOTED
2. LETTERING ON SIGNS SHALL BE CAPITAL LETTERS
3. CLEARLY LABEL ALL CIRCUIT BREAKERS IN THE PANELBOARD(S). THE LABEL SHALL INDICATE THE NAME OF THE DEVICE IT SERVES.

LABEL FORMAT NOTES:
1. FORMAT 1: ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 3/8", ALL OTHER TEXT 5/32".
2. FORMAT 2: ENGRAVED MELAMINE, BLACK TEXT ON WHITE BACKGROUND. TEXT HEIGHT: 3/8".
3. FORMAT 3: REFLECTIVE UV RATED LABEL. RED BACKGROUND WITH WHITE CAPITAL LETTERS AT LEAST 3/8" TALL. LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
4. FORMAT 4: ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 5/32", ALL OTHER TEXT 3/32".

PER 2017 NEC 690.31(B)(1), PV SYSTEM CIRCUIT CONDUCTORS SHALL BE IDENTIFIED AT ALL ACCESSIBLE POINTS OF TERMINATION, CONNECTION, AND SPLICES.

1. STRING HOMERUNS AT ARRAY
2. DC INPUT TERMINALS OF COMBINER BOX
3. DC OUTPUT TERMINALS OF COMBINER BOX
4. DC INPUT TERMINALS OF INVERTER
5. AC OUTPUT TERMINALS OF INVERTER
6. AC INPUT & OUTPUT TERMINALS OF EACH SUCCESSIVE DEVICE (WHERE APPLICABLE)

1

10"

WARNING:

MULTIPLE POWER SOURCE ARE CONNECTED TO THIS SERVICE WITH DISCONNECTS AS SHOWN:

DISCONNECT SWITCH LOCATED ON POLE AT BARBER HILL ROAD

SYSTEM B MAIN CIRCUIT BREAKER

SYSTEM A MAIN CIRCUIT BREAKER

N

6"

NEC 705.10 & 690.56(B)
INSTALL AT MAIN DISCONNECT OF ALL POWER SOURCES. ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND, TITLE MIN. 1/2", DESCRIPTION 5/16", ALL OTHER TEXT 1/8"

2 DIRECTORY LABEL
SCALE: 1:1

4"

WARNING
ARC FLASH AND SHOCK HAZARD
Appropriate PPE and Tools Required when working on this equipment.

2"

OUTDOOR RATED STICKER MOUNTED ON ALL EQUIPMENT

6 1/2"

WARNING: PHOTOVOLTAIC POWER SOURCE

1"

CEC 690.31(G)(3)(4), NFPA11.12.2.1.3.2, HELLERMANNTYTON #: 596-00206 OR EQUAL, FORMAT 3. SHALL BE PERMANENTLY AFFIXED ON ALL DC EXPOSED RACEWAYS, CABLE TRAYS, PULL BOXES, AND JUNCTION BOXES. LABELS LABELS SHALL BE SPACED NO GREATER THAN 10 FEET APART.

14"

DANGER
HIGH VOLTAGE
KEEP OUT

10"

NOTE: INSTALL SIGNAGE EVERY 75' OF FENCELINE
SCALE 1:4

2

4"

PV SYSTEM INSTALLER INFORMATION
INSTALLATION COMPANY:
GREENSKIES CLEAN ENERGY
(860) 740-5200
OM_OFFICE@GREENSKIES.COM

1 5/16"

NFPA1 11.12.2.1.5, FORMAT 4
INSTALL ON MAIN PV SYSTEM DISCONNECT, FILL WITH SITE O&M PROVIDER'S CONTACT INFORMATION. CONFIRM INFO WITH PROJECT OWNER.

TYPICAL FOR TRANSFORMERS A AND B

3

6"

SOLAR TRANSFORMER

PRIMARY & SECONDARY DISCONNECTING MEANS LOCATION:

PRIMARY: SOLAR GENERATOR DISCONNECT SWITCH MOUNTED ON CUSTOMER POLE

SECONDARY: SOLAR MAIN CIRCUIT BREAKER IN SOLAR AC SWITCHBOARD

4 1/2"

FORMAT 1

4

6"

SOLAR AC MAIN CIRCUIT BREAKER A

WARNING:
PHOTOVOLTAIC POWER SOURCE.
DO NOT RELOCATE THIS OVERCURRENT DEVICE

OPERATING CURRENT: 280A
NOMINAL VOLTAGE: 600V

3"

NEC 2020 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

5

6"

SOLAR AC MAIN CIRCUIT BREAKER B

WARNING:
PHOTOVOLTAIC POWER SOURCE.
DO NOT RELOCATE THIS OVERCURRENT DEVICE

OPERATING CURRENT: 960A
NOMINAL VOLTAGE: 600V

3"

NEC 2020 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

6

6"

SOLAR AC SWITCHBOARD A

WARNING:
PHOTOVOLTAIC POWER SOURCE.
DO NOT RELOCATE THIS OVERCURRENT DEVICE

OPERATING CURRENT: 2880A
NOMINAL VOLTAGE: 600V

3"

NEC 2020 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

7

6"

SOLAR AC SWITCHBOARD B

WARNING:
PHOTOVOLTAIC POWER SOURCE.
DO NOT RELOCATE THIS OVERCURRENT DEVICE

OPERATING CURRENT: 960A
NOMINAL VOLTAGE: 600V

3"

NEC 2020 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

TYPICAL FOR ALL INVERTER(S):

8

8"

INVERTER A1

DC DISCONNECT
MAXIMUM CURRENT: 120.0A
MAXIMUM VOLTAGE: 1500V

AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 120A
NOMINAL AC OPERATING VOLTAGE: 600V

3 1/4"

NEC 2017 690.53, 690.54, NFPA 11.12.2.1.1
FORMAT 1

TYPICAL FOR GROUNDING TRANSFORMER A & B

9

6"

GROUNDING TRANSFORMER A

3/4"

FORMAT 2

10

CUSTOMER OWNED PRODUCTION METER

600Y/347V

NOTES:
1. LABEL SHALL BE APPLIED TO DECK MONITOR ENCLOSURE AND CUSTOMER OWNED REC METER.

11

WARNING!
ELECTRIC SHOCK HAZARD.
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

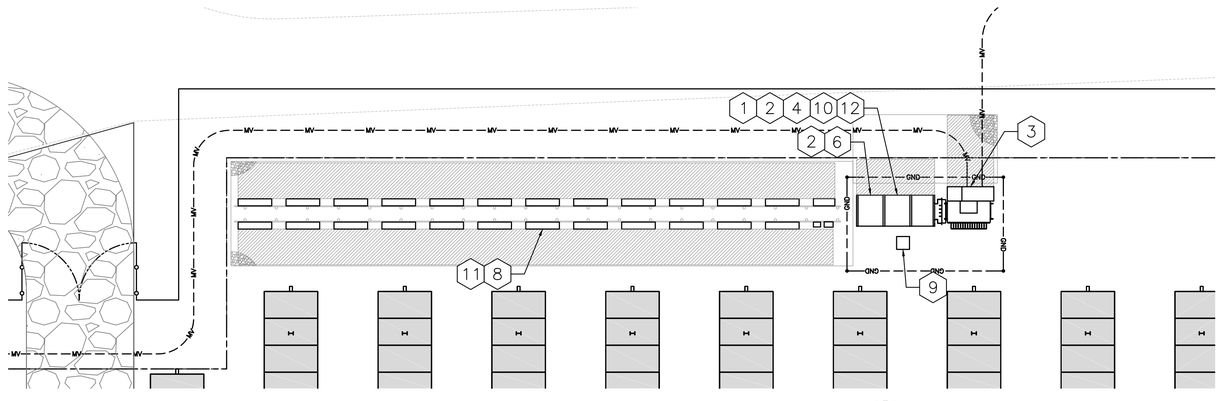
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

NOTES:
1. LABEL REQUIRED PER NEC 690.13(B).

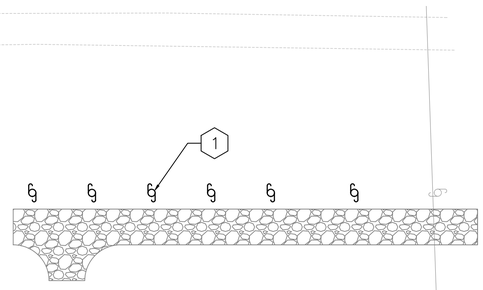
12

WARNING!
ELECTRIC SHOCK HAZARD.
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

NOTES:
1. LABEL REQUIRED PER CEC 690.13(B).



1 TYPICAL LABELS & SIGNAGE – EQUIPMENT AREA
SCALE: 1" = 10'-0"



3 TYPICAL LABELS & SIGNAGE – POLE LINEUP
SCALE: 1" = 10'-0"

NO	DATE	REVISION DESCRIPTION	PM	ENG	CHK
IFC	03/07/2025	REV 4	SK	SK	RI
IFC	07/11/2024	REV 2	SK	MW	RI
IFC	04/24/2023	REV 1	SK	SK	RI
IFC	12/14/2022	ISSUE FOR CONSTRUCTION	SK	MaB	RI

DEVELOPER
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a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

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AC SYSTEM SIZE: 4,000.000 kW
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MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE
LABELS & SIGNAGE

DRAWING #
E500

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PURE POWER ENGINEERING
111 PIERCE STREET, KINGSTON, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029462

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 3/7/2025 6:09 PM

144HC M10 SL Bifacial Module

HELIENE

144HC M10 SL Bifacial Module

144 Half-Cut Monocrystalline 520W – 540W

21%
Utilizes the latest M10 size super high efficiency Monocrystalline PERC cells. Half cut design further reduces cell to module (CTM) losses.

Stability & Looks
Rugged, double webbed frame design withstands wind, snow, and other mechanical stresses. Framed Glass–Backsheet aesthetic is ideal for high visibility installation.

Anti-Reflective
Premium solar glass with anti reflective coating delivers more energy throughout the day

High Reliability
Proven resistance to PID and reliable in high temperature and humidity environments.

Manufactured Using International Quality System Standards: ISO9001

Half-Cut Design with Split Junction Box Technology

Bifacial Technology Enabling Additional Energy Harvest from Rear Side

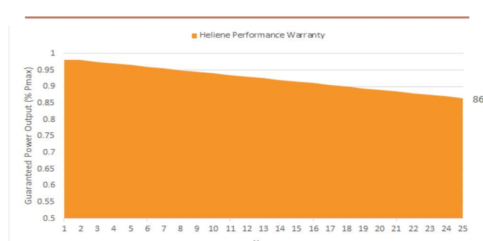
2% First Year Degradation & 0.5% Annual Power Degradation

World-class Quality
- Heliene's fully automated manufacturing facilities with state-of-the-art robotics and computer aided inspection systems ensure the highest level of product quality and consistency
- All manufacturing locations are compliant with international quality standards and are ISO 9001 certified
- Heliene modules have received Top Performer rankings in several categories from PV Evolution Labs (PV EL) independent quality evaluations

Bankable Reputation
- Established in 2010, Heliene is recognized as highly bankable Tier 1 manufacturer of solar modules and has been approved for use by the U.S. Department of Defense, U.S. Army Corps of Engineers and from numerous top tier utility scale project debt providers
- By investing heavily in research and development, Heliene has been able to stay on the cutting edge of advances in module technology and manufacturing efficiency

Local Sales, Service, and Support
- With sales offices across the U.S. and Canada, Heliene prides itself on unsurpassed customer support for our clients. Heliene has become the brand of choice for many of the leading residential installers, developers and Independent Power Producers due to our innovative technology, product customization capability and just in time last-mile logistics support
- Local sales and customer support means answered phone calls and immediate answers to your technical and logistics questions. We understand your project schedules often change with little warning and endeavor to work with you to solve your project management challenges

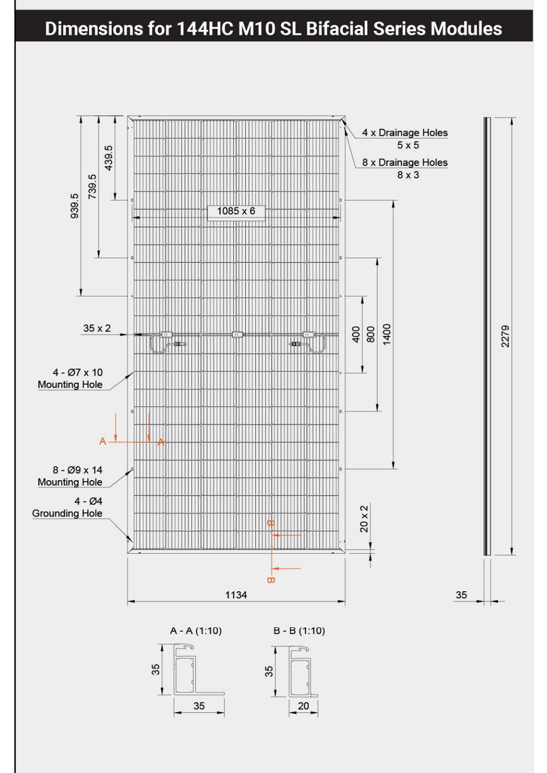
No Compromise Guarantee
15 Year Product Warranty
25 Year Linear Performance Guarantee



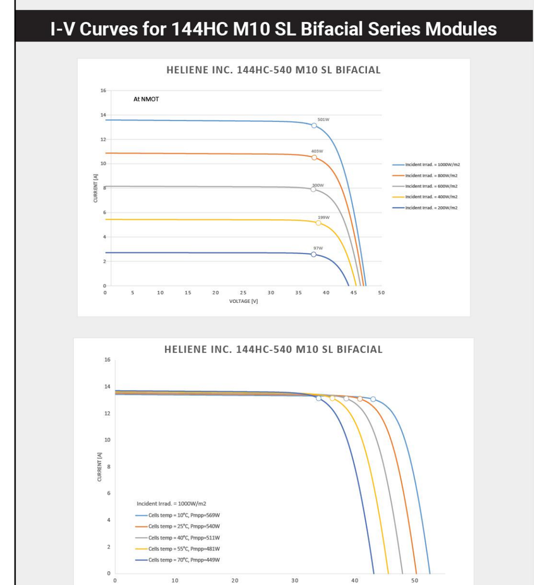
www.heliene.com

144HC M10 SL Bifacial Module

Dimensions for 144HC M10 SL Bifacial Series Modules



I-V Curves for 144HC M10 SL Bifacial Series Modules



Electrical Data (STC)

Peak Rated Power*	P_{mpp} (W)	540	535	530	525	520
Maximum Power Voltage	V_{mpp} (V)	42.32	42.13	41.94	41.75	41.56
Maximum Power Current	I_{mpp} (A)	12.77	12.70	12.64	12.58	12.52
Open Circuit Voltage*	V_{oc} (V)	50.22	49.97	49.72	49.47	49.22
Short Circuit Current**	I_{sc} (A)	13.50	13.48	13.46	13.44	13.42
Module Efficiency	Eff (%)	20.9	20.7	20.5	20.3	20.1
Maximum Series Fuse Rating	MF (A)	30	30	30	30	30
Power Sorting Range			[- 0/+3%]			
Bifaciality Factor***			70 ± 5%			

STC - Standard Test Conditions: Irradiation 1000 W/m² - Air mass AM 1.5 - Cell temperature 25 °C,
*P_{mpp} Production Tolerance ± 3%, *V_{oc} Production Tolerance ± 3%, **I_{sc} Production Tolerance ± 4%
***Bifaciality Factor= $Pmpp_{rear}$/$Pmpp_{front}$ where $Pmpp_{rear}$ and $Pmpp_{front}$ are tested at STC

Electrical Data (NMOT)

Maximum Power	P_{mpp} (W)	403	399	395	391	388
Maximum Power Voltage	V_{mpp} (V)	40.21	40.02	39.85	39.66	39.48
Maximum Power Current	I_{mpp} (A)	10.01	9.97	9.92	9.87	9.82
Open Circuit Voltage	V_{oc} (V)	47.71	47.47	47.23	47.00	46.76
Short Circuit Current	I_{sc} (A)	10.91	10.89	10.88	10.86	10.84

NMOT - Nominal Module Operating Temperature:
Irradiance at 800W/m2, Ambient Temperature 20°C, Wind speed 1m/s

Mechanical Data

Solar Cells	144 Half Cut, M10, 182mm, PERC Cells
Module Construction	Framed Glass–Backsheet
Dimensions (L x W x D)	2279 x 1134 x 35 mm (89.72 x 44.65 x 1.38 inch)
Weight	29.2 kg (64.3 lbs)
Frame	Double Webbed 15-Micron Anodized Aluminum Alloy
Glass	3.2mm Low-Iron Content, High-Transmission, PV Solar Glass with Anti Reflective Coating
Junction Box	IP-68 rated with 3 bypass diodes
Output Cables	4mm² (12AWG), 0.3-meter Symmetrical Cables
Connectors	Multi-Contact/ Stäubli MC4

Certifications

UL Certification	UL61215, UL61730

Temperature Ratings

Nominal Module Operating Temperature (NMOT)	+45°C (±2°C)
Temperature Coefficient of P_{max}	-0.34%/°C
Temperature Coefficient of V_{oc}	-0.25%/°C
Temperature Coefficient of I_{sc}	0.05%/°C

Maximum Ratings

Operational Temperature	-40°C to +85°C
Max System Voltage	1500V
Mech. Load Test (Front)	113 psf / 5400 Pa
Mech. Load Test (Back)	50 psf / 2400 Pa
Fire Type	Type 1

Warranty

15 Year Product Warranty
25 Year Linear Power Guarantee

Packaging Configuration

Modules per Pallet 40' Container:	31 pieces
Modules per 40' Container:	620 pieces
Modules per Pallet 53' Trailer:	28 pieces
Modules per 53' trailer:	644 pieces

HSPE_144HC_M10_SL_Bifacial_Rev.03.pdf
April 13th, 2023

YASKAWA

SOLECTRIA XGI™ 1500

Premium 3-Phase Transformerless Utility-Scale Inverters

NEW! Expanded DC/AC Ratios

Features
- Made in the USA with global components
- Buy American Act (BAA) compliant
- Four models: 125kW/125kVA, 125kW/150kVA, 150kW/166kVA, 166kW/166kVA
- 99.0% peak efficiency
- Flexible solution for distributed and centralized system architecture
- Advanced grid-support functionality Rule 21/UL1741SA
- Robust, dependable and built to last
- Lowest O&M and installation costs
- Access all inverters on site via WiFi from one location
- Remote diagnostics and firmware upgrades
- SunSpec Modbus Certified
- Tested compatible with the TESLA PowerPack Microgrid System

Options
- String combiners for distributed and centralized systems
- Web-based monitoring
- Extended warranty

MADE IN THE USA
With U.S. and Global Components

Yaskawa Solectria Solar's XGI 1500 utility-scale string inverters are designed for high reliability and built of the highest quality components that were selected, tested and proven to last beyond their warranty. The XGI 1500 inverters provide advanced grid-support functionality and meet the latest IEEE 1547 and UL 1741 standards for safety. The XGI 1500 inverters are the most powerful 1500VDC string inverters in the PV market and have been engineered for both distributed and centralized system architecture. Designed and engineered in Lawrence, MA, the new SOLECTRIA XGI inverters are assembled and tested at Yaskawa America's facilities in Buffalo Grove, IL. The XGI 1500 inverters are Made in the USA with global components and are compliant with the Buy American Act.

SOLECTRIA SOLAR

SOLECTRIA XGI 1500

Specifications

	XGI 1500-125/125	XGI 1500-125/150	XGI 1500-150/166	XGI 1500-166/166
DC Input	[illegible]	[illegible]	[illegible]	[illegible]
AC Output	[illegible]	[illegible]	[illegible]	[illegible]
Efficiency	[illegible]	[illegible]	[illegible]	[illegible]
Temperature	[illegible]	[illegible]	[illegible]	[illegible]
Communications	[illegible]	[illegible]	[illegible]	[illegible]
Testing & Certifications	[illegible]	[illegible]	[illegible]	[illegible]
Warranty	[illegible]	[illegible]	[illegible]	[illegible]
Enclosure	[illegible]	[illegible]	[illegible]	[illegible]

SOLECTRIA SOLAR

Yaskawa Solectria Solar
360 Merrimack Street
Lawrence, MA 01843
solectria.com
1-978-683-9700
Email: inverters@solectria.com

Document: FL.XGI1500.01
02/03/2021

YASKAWA

FTC SOLAR PIONEER TRACKER™

Pioneer Tracker™

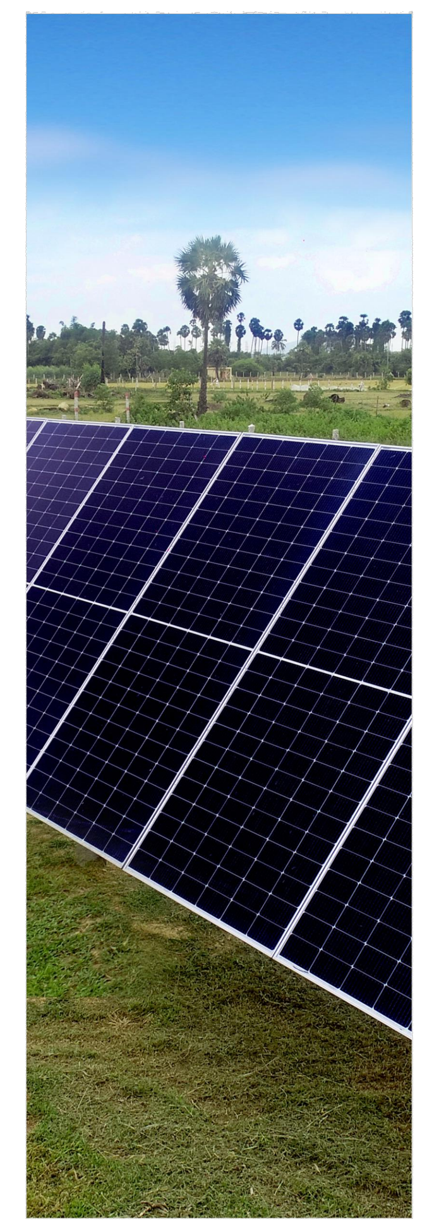
FTC's differentiated 1P single-axis tracker – a simple and elegant solution that reduces construction costs while maximizing long-term reliability and electricity yield.

Lowest Installed Cost
Pioneer's >15% reduction in pile count significantly lowers installation cost and the potential expense of rework from refusals. In addition, Pioneer's patented Python clip provides rapid installation of modules by eliminating threaded fasteners and jigs. Minimum connection points and reduced fastener count further lower installed cost.

Yield Enhancement Software
SunPATH software optimizes individual row backtracking from multi-row shading, and increases plant performance during diffuse light conditions.

Designed for Reliability
Pioneer leverages FTC's Voyager 2P validated and field tested single row dive and controls systems. Our proprietary drive requires no auxiliary power while providing data communication and power redundancy. Secure, Over The Air software updates enable seamless upgrades.

FTC SOLAR PIONEER TRACKER™



Pioneer Tracker Design Specifications

Wind Speed Configurations	Up to 120mph as per ASCE7
Module Architecture	1 module in portrait orientation
Modules Supported	All framed Mono, Poly, Bifacial, FSLR6, FSLR7
Module Attachment	4 mechanical fasteners per module, no threaded fasteners
String Architecture	1500V systems: 3 strings per row, up to 30 modules per string, 1000V Systems: 4 strings per row up to 20 modules per string
Power	Two 60W Power Modules Onboard Lithium-ion Battery; 24V DC self powered drive system with up to 3-day battery backup
Drive Type	36kNm, 45kNm Slew Drives
Posts per Row (typical)	11 posts per row (1 drive, 10 non-drive)
Post Size	W6
Post Type	Driven (primary) w/ alternative foundation options available
Range of Motion	+/- 52°
Stow Conditions	Wind Stow (0°), Optional Snow Stow (40°), Flood Stow (0°), Hail Stow (50°)
Backtracking	Individual Row Level (standard) Terrain-Based Backtracking (optional with SunPATH)
Diffuse Light Capture	Available with optional SunPATH
Ground Clearance	300mm (minimum)
Ground Coverage	30-60% GCR supported
Slope Tolerances	10° (17.5%) – North-South; Unlimited – East-West
Snow Load	0psf - 60psf (Higher available upon request)
Operating Temperature	0°C to 60°C (-20°C to 60°C with Optional Cold Weather Package)
Sensor Package	Wind (Std), Snow and Flood Optional
Communication Architecture	Wireless Zigbee Mesh Network Row to Row; One Zone Controller for up to 99 rows. Connection to SCADA/DAS through Modbus TCP/IP interface
Security	Over The AIR (OTA) communications secured using transport level security (TLS) protocol.
Special Installation Tools	None
Certifications	UL 2703, 3703 and IEC EC 62817
Warranty	5 yr drive and control + 10 yr structure standard. Additional warranty options available.

Intertek Intertek Intertek

FTCSOLAR

FTC Solar integrates engineering, software, and lean construction to lower installation costs and deploy reliable solar tracking solutions to advanced projects around the world.

North America, Latin America
Europe, Africa, India Middle
East & North Africa
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Asia

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info@ftcsolar.com
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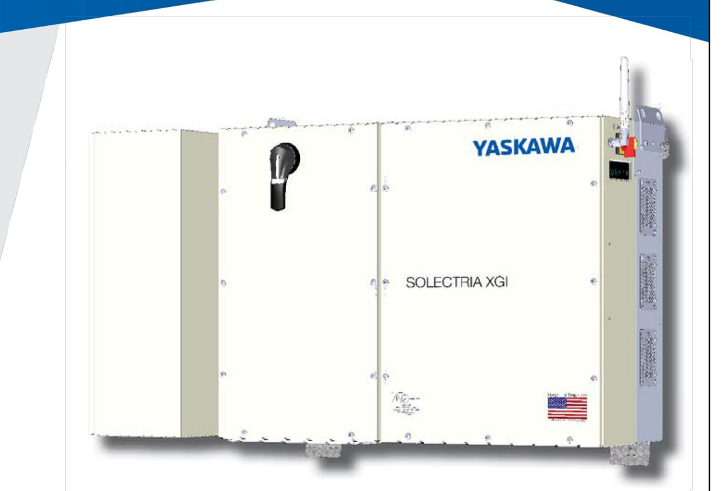
YASKAWA

XGI 1500 COMBINERS

Increased Design Flexibility for SOLECTRIA XGI 1500



Features
- Made in the USA with global components
- Buy American Act (BAA) compliant
- Designed exclusively for use with XGI 1500 inverters
- Both poles fused and switched
- 16, 20, 24, 26, and 28 fuse positions
- 15 and 20 A fuse options for all models; 25 and 30 A fuse options for select models only
- Connection plates for compression terminals
- 90C terminal rating

Option
- Surge arrestor, both polarities

MADE IN THE USA
With U.S. and Global Components

Yaskawa Solectria Solar offers two 1500V string combiners, Attachable & Remote, each designed to pair exclusively with SOLECTRIA XGI 1500 inverters. The 1500V Attachable Combiner is designed to mate directly to the XGI 1500 inverter for use in distributed PV systems where the combiner and inverter are located together throughout the array field. The 1500V Remote Combiner has similar features, but is designed for a centralized or clustered deployment of multiple XGI 1500 inverters where the combiners are distributed throughout the PV array field. Both combiner lines feature the highest quality and durability in the industry today.

Choose from models with 16 to 28 fused positions and either 15 or 20 A fuses. Specific models also available with 25 A fuses (20 positions) and 30 A fuses (16 positions). The combiners match the XGI 1500 in quality and appearance. Both models satisfy the National Electrical Code for systems with ungrounded PV source circuits. All Yaskawa Solectria Solar XGI inverters and combiners are Made in the USA with global components and are compliant with the Buy American Act.

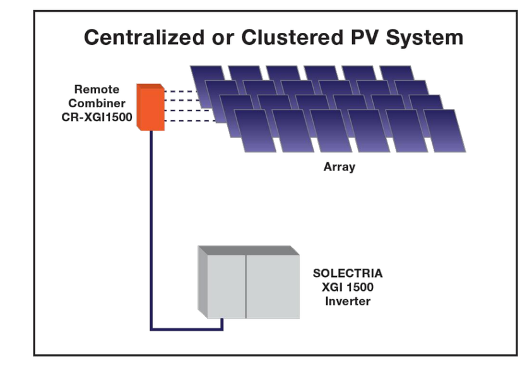
SOLECTRIA SOLAR

XGI 1500 COMBINERS

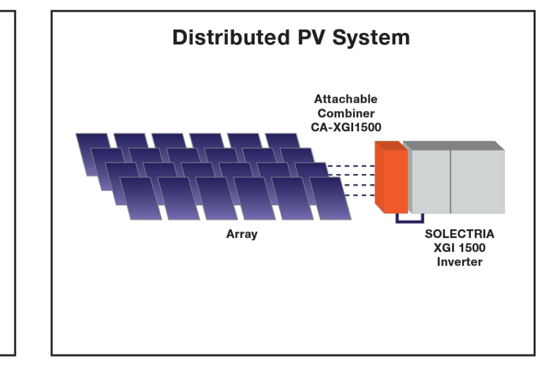
Specifications

	1500V Remote Combiner			1500V Attachable Combiner		
1500V String Combiners exclusively for use with SOLECTRIA XGI 1500						
Input Wire Compatibility	14-4 AWG			14-4 AWG		
Output Wire Compatibility	Compression Terminal: 1 conductor, 1/0 - 500 kcmil | 2 conductors, 1/0 - 500 kcmil			Compression Terminal: 1 conductor, 1/0 - 500 kcmil | 2 conductors, 1/0 - 500 kcmil		
Maximum Voltage	1500 VDC			1500 VDC		
Fuse Rating Options	15 A or 20 A (fuses included)	25 A	30 A	15 A or 20 A (fuses included)	25 A	30 A
Number of Fused Positions	16 / 20 / 24 / 26 / 28	20	16	16 / 20 / 24 / 26 / 28	20	16
Input PV Source Circuit Configurations	Ungrounded PV Source Circuits			Ungrounded PV Source Circuits		
Fuse Configurations	Both positive and negative polarities fused			Both positive and negative polarities fused		
DC Disconnect	2-pole integrated DC disconnect, positive and negative poles switched			DC Disconnect located on XGI 1500 inverter		
DC Disconnect Current Rating	250 A			250 A (located on XGI 1500)		
Temperature Range	-40°F to 122°F (-40°C to 50°C)			-40°F to 122°F (-40°C to 50°C)		
Mounting Positions	Indoor, Outdoor, Wall, Array - Vertical, Horizontal or Angled			Mechanically attaches to structure		
Safety Certification & Listing	UL 1741			UL 1741		
Standard Warranty	5 Years			5 Years		
Enclosure Material Options & Rating	Polyester Powder Coated Aluminum, NEMA Type 4X			Polyester Powder Coated Aluminum, NEMA Type 4X		
Option						
Surge Protection	Both positive and negative polarities			Both positive and negative polarities		

Centralized or Clustered PV System



Distributed PV System



SOLECTRIA SOLAR

Yaskawa Solectria Solar
360 Merrimack Street
Lawrence, MA 01843
solectria.com
1-978-683-9700
inverters@solectria.com

DOCR-071951-C | February 2019

YASKAWA

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/07/2025	IFC – REV 4	SK	SK	RI
07/11/2024	IFC – REV 2	SK	MW	RI
04/24/2023	IFC – REV 1	SK	SK	RI
12/14/2022	ISSUE FOR CONSTRUCTION	SK	MeB	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

STATE OF CONNECTICUT · RICHARD A. IVINS · PEN.0029262 · LICENSED PROFESSIONAL ENGINEER

DEVELOPER
Greenskies
a Clean Focus company
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE: 36" x 24"
PROJECT #: 01590.03

DC SYSTEM SIZE: 4,689.360 kW
AC SYSTEM SIZE: 4,000.000 kW
MODULE TYPE: HSPE 540W
MODULE QUANTITY: 8,684
ORIENTATION: SAT, 0° AZIMUTH

PROJECT
GROUNDMOUNT SYSTEM AT
MULNITE – MILLER ROAD
MILLER ROAD
EAST WINDSOR, CT 06016

DRAWING TITLE
EQUIPMENT DATA SHEETS

DRAWING #
E600

RULER IN INCHES: