

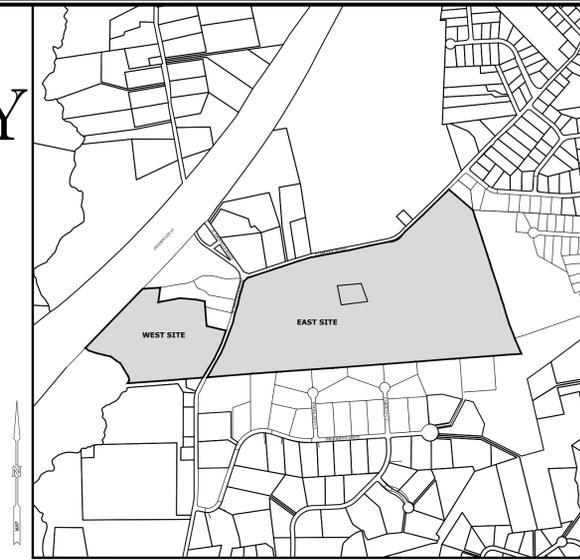
# ELMRIDGE GOLF COURSE PV SOLAR FACILITY GREENSKIES CLEAN ENERGY LLC

229 ELMRIDGE ROAD  
STONINGTON, CONNECTICUT  
PERMIT DRAWINGS

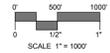
MMI PROJECT No. 6763-10  
MAY 19, 2020  
REVISED OCTOBER 9, 2020



PROJECT SITE VICINITY MAP:



LOCATION MAP:



**PREPARED FOR:**

**Greenskies**  
a Clean Focus company  
127 WASHINGTON AVENUE  
WEST BUILDING, GARDEN LEVEL  
NORTH HAVEN, CT 06473

**LIST OF DRAWINGS**

NO.	NAME	TITLE
01	--	TITLE SHEET
02	LD	LEGEND & NOTES
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13 - 15	SD-1 - SD-3	MISCELLANEOUS SITE DETAILS

**PREPARED BY:**

**MILONE & MACBROOM**  
1350 MAIN STREET, SUITE 1012  
SPRINGFIELD, MA  
413.241.6920  
WWW.MMINC.COM



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www.cbyd.com

## SURVEY NOTES

- THIS PLAN IS BASED ON THE PLAN AND SURVEY PROVIDED BY NORTHEAST SURVEY CONSULTANTS DATED DECEMBER 16, 2019. SUPPLEMENTAL INFORMATION WAS PROVIDED ON JANUARY 23, 2020.
- HORIZONTAL DATUM IS NAD83. VERTICAL DATUM IS NAVD88.
- BOUNDARY LINES SHOWN HEREIN WERE TAKEN FROM PLANS & DEEDS OF RECORD AND MONUMENTS FOUND.
- ALL CONTOURS SHOWN HEREIN WERE GENERATED IN ARCMAP FROM DIGITAL ELEVATION MODELS OF THE 2016 CRCOG LIDAR DATA (10' GRID SIZE/TIN GRID METHOD) AS DISTRIBUTED BY NOAA.
- ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE LOCUS PARCELS ARE LOCATED IN AREAS DESIGNATED AS ZONE X (UNSHADED), ZONE X (SHADED) AND ZONE AE. COMMUNITY PANEL NO. 09011C 0413 G, EFFECTIVE DATE: 07/18/2011. FLOOD ZONE LINES SHOWN HEREON ARE TAKEN FROM THE NATIONAL FLOOD HAZARD GIS LAYER PROVIDED BY FEMA.
- THE FOLLOWING FEATURES WERE TRACED FROM AERIAL PHOTOGRAPHY AND ARE APPROXIMATE ONLY: CART PATHS, FAIRWAYS, GREENS, SAND TRAPS, PARKING AREAS, DRIVES, TREELINES AND WATER FEATURES.
- LOCATIONS OF UTILITIES SHOWN HEREIN ARE THE RESULT OF SURFACE EVIDENCE AS LOCATED BY FIELD SURVEY AND ANECDOTAL KNOWLEDGE OF THE SITE. THIS PLAN DOES NOT DEPICT THE EXACT LOCATIONS OF ALL UTILITIES WHICH MAY EXIST AT THIS TIME WITHIN THE PREMISES SURVEYED.
- THE PROJECT PROPERTY IS LOCATED WITHIN THE LI-130 AND GBR-130 ZONING DISTRICTS. A MAJORITY OF THE PROJECT, INCLUDING THE ENTIRE PV ARRAY FIELD, STORMWATER MANAGEMENT BASINS, AND GRADING, ARE LOCATED WITHIN THE GBR-130 ZONING DISTRICT. WORK IN THE LI-130 ZONING DISTRICT CONSISTS OF WORK ASSOCIATED WITH THE NORTHERLY INTERCONNECTION TO TAUGWONK ROAD AND MAINTENANCE OF THE EXISTING GRAVEL ACCESS ROAD.
- WETLAND DELINEATION PERFORMED BY MILONE & MACBROOM, INC. ON NOVEMBER 26, 2019 AND JANUARY 13, 2020.

## EXISTING CONDITIONS LEGEND

BUILDING / STRUCTURE	
MAJOR CONTOUR	370
MINOR CONTOUR	369
TREELINE	
EDGE OF PAVEMENT	
PROPERTY LINE	
FLAGGED WETLAND LIMIT	63A
WETLAND FLAG	
WETLAND BUFFER	100' WETLAND BUFFER
FEMA ZONE AE	100-YR
FEMA ZONE X	500-YR
ABUTTERS LINE	
EASEMENT LINE	
OVERHEAD WIRES	OE
STONE WALL	
CHAIN LINK FENCE	
ASSESSOR'S ID	
NOW OR FORMERLY	N/F
IRON PIPE FOUND	IPF
BOUND FOUND	
CALCULATED POINT	
UTILITY POLE	
GUY WIRE ANCHOR	

## GENERAL NOTES

- ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD (V.I.F.) PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND SAFETY OF TRAFFIC ON THE PUBLIC AND PRIVATE WAYS AFFECTED BY THE CONSTRUCTION OF THE PROJECT.
- ALL SLOPES, VEGETATION, PAVING, WALKS, AND IMPROVEMENTS OUTSIDE THE AREAS TO BE AFFECTED BY THE CONSTRUCTION OF THE PROJECT SHALL BE PROTECTED. DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH O.S.H.A. STANDARDS AND LOCAL REQUIREMENTS.
- ALL STUMPS SHALL BE DISPOSED OF AT AN APPROVED OFFSITE LOCATION. THE BURYING OF STUMPS ON SITE SHALL NOT BE PERMITTED.

## GRADING NOTES

THE RESHAPING OF THE GROUND SURFACE WITH EXCAVATION AND FILLING OR A COMBINATION OF, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE SEDIMENT AND EROSION MEASURES IN ADDITION THE FOLLOWING CRITERIA:

- THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO TWO VERTICAL (1:2).
- PROVISIONS SHOULD BE INCLUDED TO CONVEY SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
- NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH INTO ADJACENT WETLANDS, WATERCOURSES, OR WATER BODIES.
- PRIOR TO ANY RE-GRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.
- GRADING SHALL BE COMPLETED TO 95% COMPACTION PER THE SPECIFICATIONS.

## SITE LAYOUT LEGEND

PROPOSED MAJOR CONTOUR	250
PROPOSED MINOR CONTOUR	248
SPOT ELEVATION	+260.20
GRAVEL SURFACE	
PROPOSED ELECTRICAL SERVICE (UNDERGROUND)	E
PROPOSED ELECTRICAL SERVICE (OVERHEAD)	OHE
PROPOSED CHANLINK FENCE / GATE	
PHOTOVOLTAIC ARRAY	
PROPOSED LIMIT OF WORK	
PROPOSED INVERTER PAD	
PROPOSED UTILITY POLE	

## SEDIMENT & EROSION CONTROL NOTES

- CONTRACTOR TO STAKE OUT LIMIT OF DISTURBANCE. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN.
- CONTRACTOR TO INSTALL SEDIMENT AND EROSION CONTROLS ALONG THE PERIMETER, AS SHOWN ON THE SEDIMENT CONTROL PLAN AND STABILIZED CONSTRUCTION ENTRANCES.
- CLEAR AND GRUB SITE AND STOCKPILE TOPSOIL AS NECESSARY. PLACE COMPOST FILTER TUBES AROUND STOCKPILES.
- CONSTRUCT STORMWATER MANAGEMENT BASINS AFTER THE SITE IS CLEARED AND GRUBBED.
- SLOPES ARE TO BE ESTABLISHED AS SOON AS PRACTICAL BEFORE PV ARRAY INSTALLATION. STABILIZE ALL SLOPES IMMEDIATELY AFTER THEIR ESTABLISHMENT.
- THE SEDIMENT CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE AND THE MUNICIPALITY DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS.
- ROUTINE SEDIMENT AND EROSION CONTROL INSPECTIONS SHALL CONTINUE UNTIL ALL DISTURBED AREAS HAVE STABILIZED PURSUANT TO THE CONNECTICUT STORMWATER GENERAL PERMIT.
- ALL DEWATERING WASTE WATERS SHALL BE DISCHARGED IN A MANNER WHICH MINIMIZES THE DISCOLORATION OF THE RECEIVING WATERS.
- THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
- A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.

## SEDIMENT & EROSION LEGEND

SILT FENCE	SF
SILT FENCE & STAKED STRAW BALES	SF
COMPOST FILTER TUBE	CFT
STONE LEVEL SPREADER	
LIMIT OF CLEARING	
CONSTRUCTION ENTRANCE PAD	

## ZONING DATA (WEST SITE)

ZONING DISTRICT	GBR-130 (GREENBELT RESIDENTIAL)
DIMENSIONAL / DENSITY CRITERIA	REGULATION
MIN. LOT AREA	130,000 SF
YARD SETBACKS	
FRONT	75 FT
SIDE <sup>1,2</sup>	30/100 FT
REAR	100 FT
MAX HEIGHT	30 FT

## ZONING DATA (EAST SITE)

ZONING DISTRICT	RR-80 (RURAL RESIDENTIAL)
DIMENSIONAL / DENSITY CRITERIA	REGULATION
MIN. LOT AREA	80,000 SF
YARD SETBACKS	
FRONT <sup>1,2</sup>	50 FT
SIDE <sup>1,2</sup>	25 FT
REAR <sup>1,2</sup>	50 FT
MAX HEIGHT	30 FT

## PV SOLAR SYSTEM SPECIFICATIONS

WEST SITE	
Module output (Watts):	395
System DC/AC Ratio:	1.265
Module tilt angle:	25°
Azimuth:	180
Min Row Spacing (ft):	13
Racking:	2x5 portrait
No. Modules:	3,200
Array Output (KW-DC):	1,264
Array Output (KW-AC):	1,000

EAST SITE	
Module output (Watts):	395
System DC/AC Ratio:	1.265
Module tilt angle:	25°
Azimuth:	180
Min Row Spacing (ft):	13
Racking:	2x5 portrait
No. Modules:	6,400
Array Output (KW-DC):	2,528
Array Output (KW-AC):	2,000

## LEGEND & NOTES

ELMRIDGE GOLF COURSE PV SOLAR FACILITY  
GREENSKIES CLEAN ENERGY LLC  
229 ELMRIDGE ROAD  
STONINGTON, CONNECTICUT

NOT FOR CONSTRUCTION

MRG	HMM	MRA
DESIGNED	DRAWN	CHECKED

N.T.S.

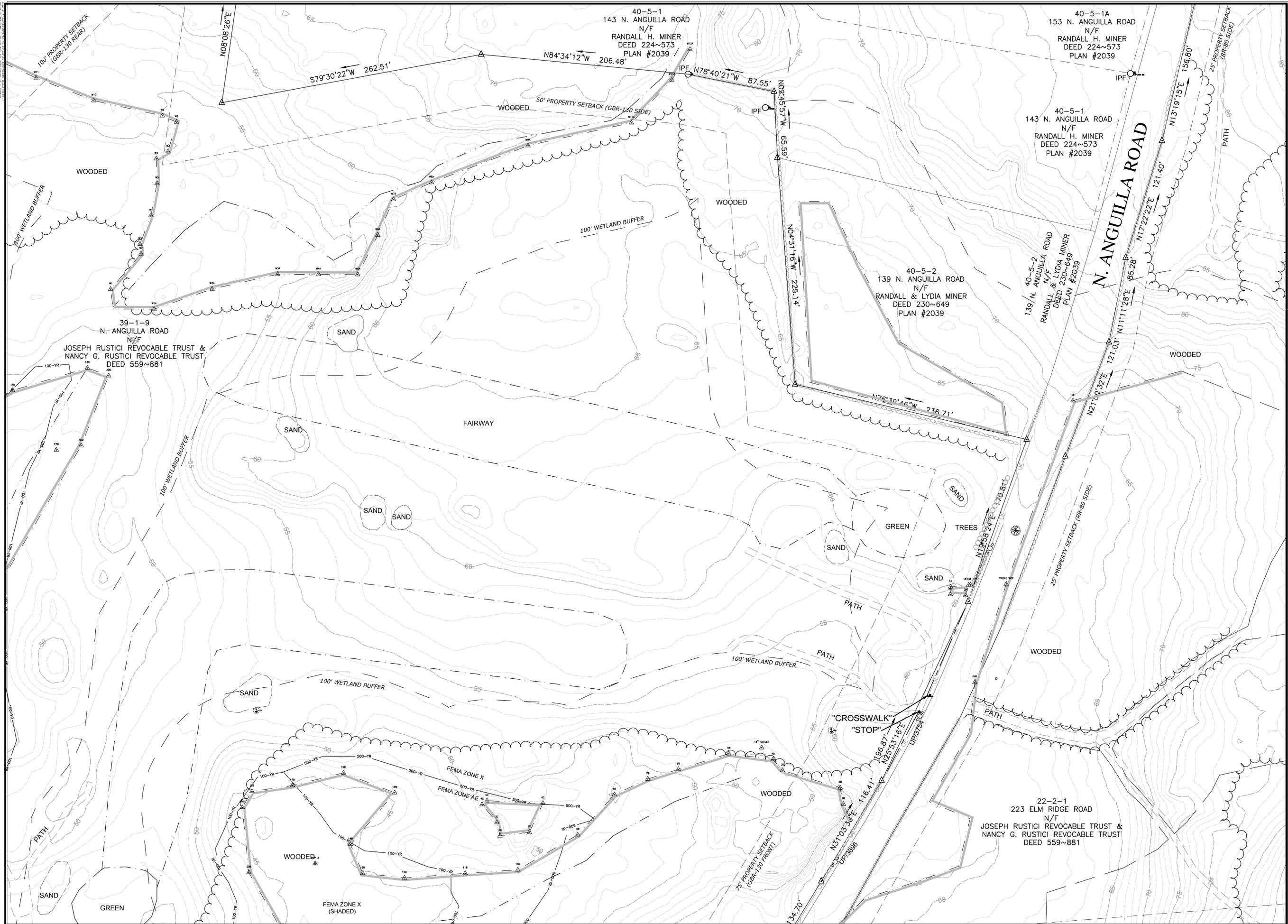
MAY 19, 2020

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02 OF 15

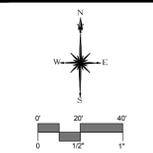
LD





MATCHLINE - SEE SHEET EX-2

MATCHLINE - SEE SHEET EX-3



DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION

EXISTING CONDITIONS PLAN - WEST SITE  
 ELMIRDE GOLF COURSE PV SOLAR FACILITY  
 GREENSKIES CLEAN ENERGY LLC  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

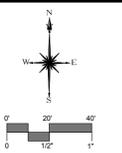
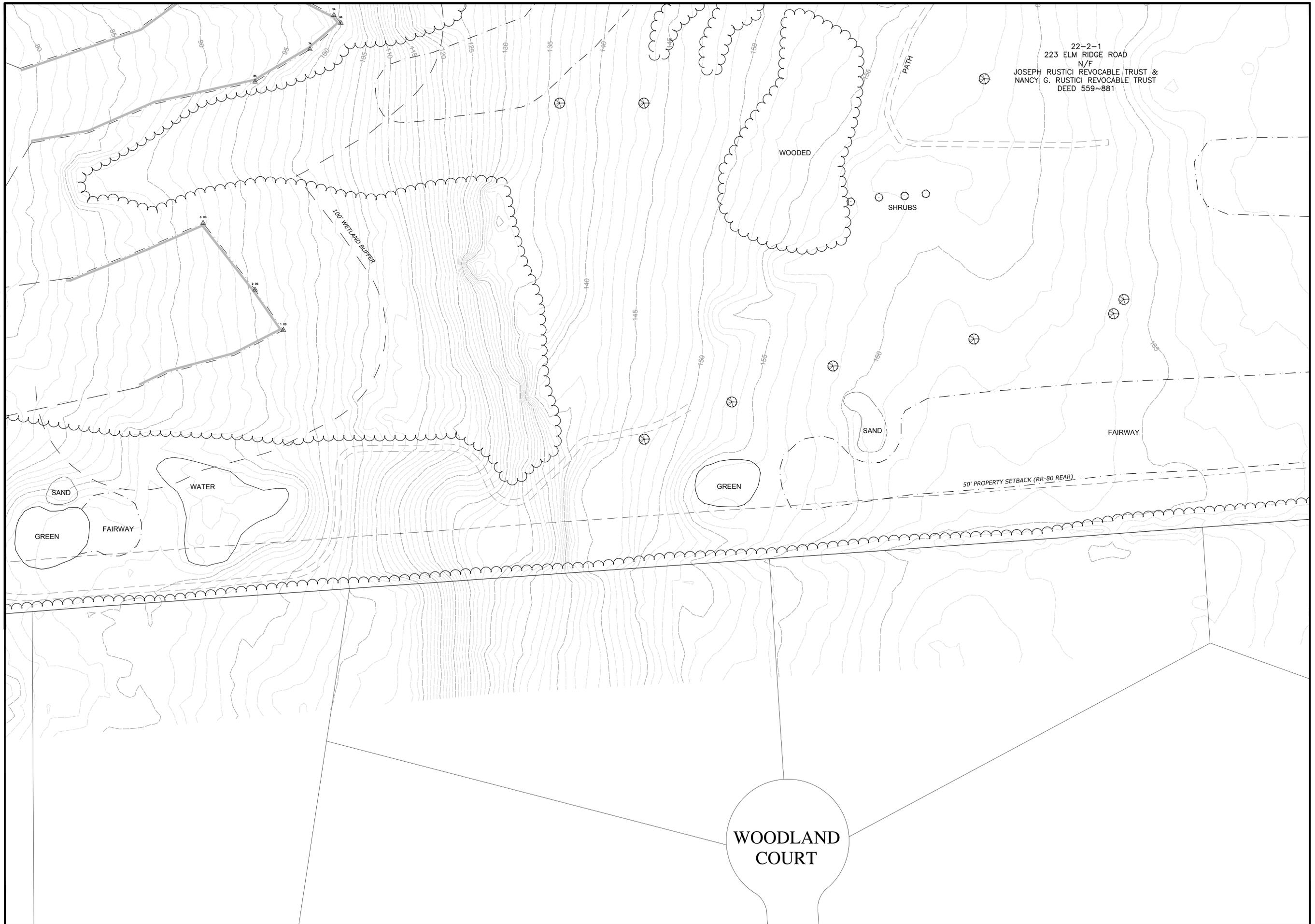
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DESIGNED	DRAWN	CHECKED
SCALE: 1"=40'		
DATE: MAY 19, 2020		
PROJECT NO.: 6763-10		
SHEET NO.: 04 OF 15		

**EX-1**



MATCHLINE - SEE SHEET EX-2

MATCHLINE - SEE SHEET EX-1

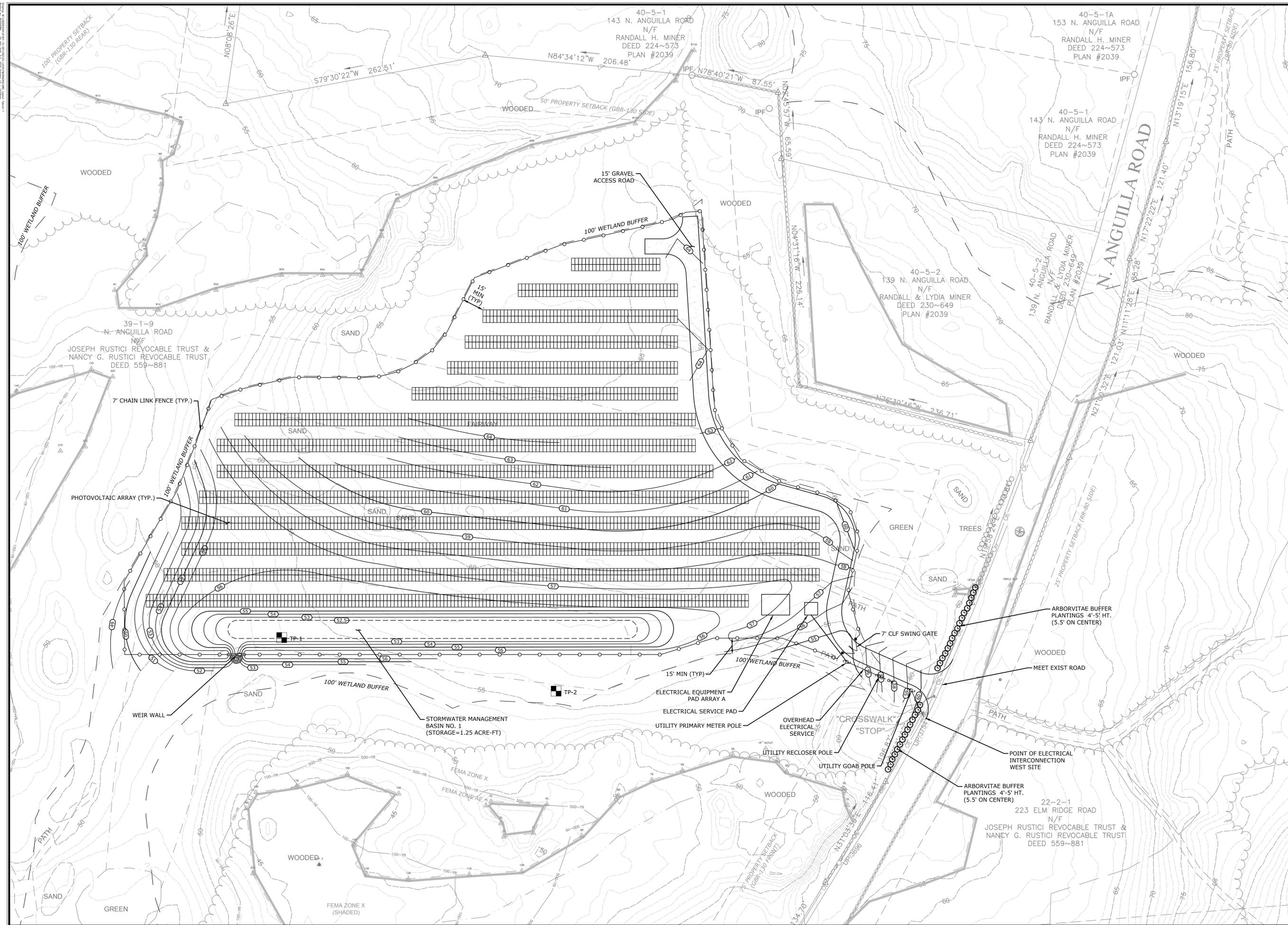


DESCRIPTION	DATE	BY

EXISTING CONDITIONS PLAN - EAST SITE  
 ELMRIDGE GOLF COURSE PV SOLAR FACILITY  
 GREENSKIES CLEAN ENERGY LLC  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

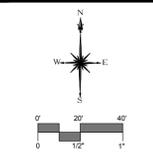
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SCALE 1"=40'		
DATE MAY 19, 2020		
PROJECT NO. 6763-10		
SHEET NO. 06 OF 15		

EX-3



MATCHLINE - SEE SHEET LA-2

MATCHLINE - SEE SHEET LA-3



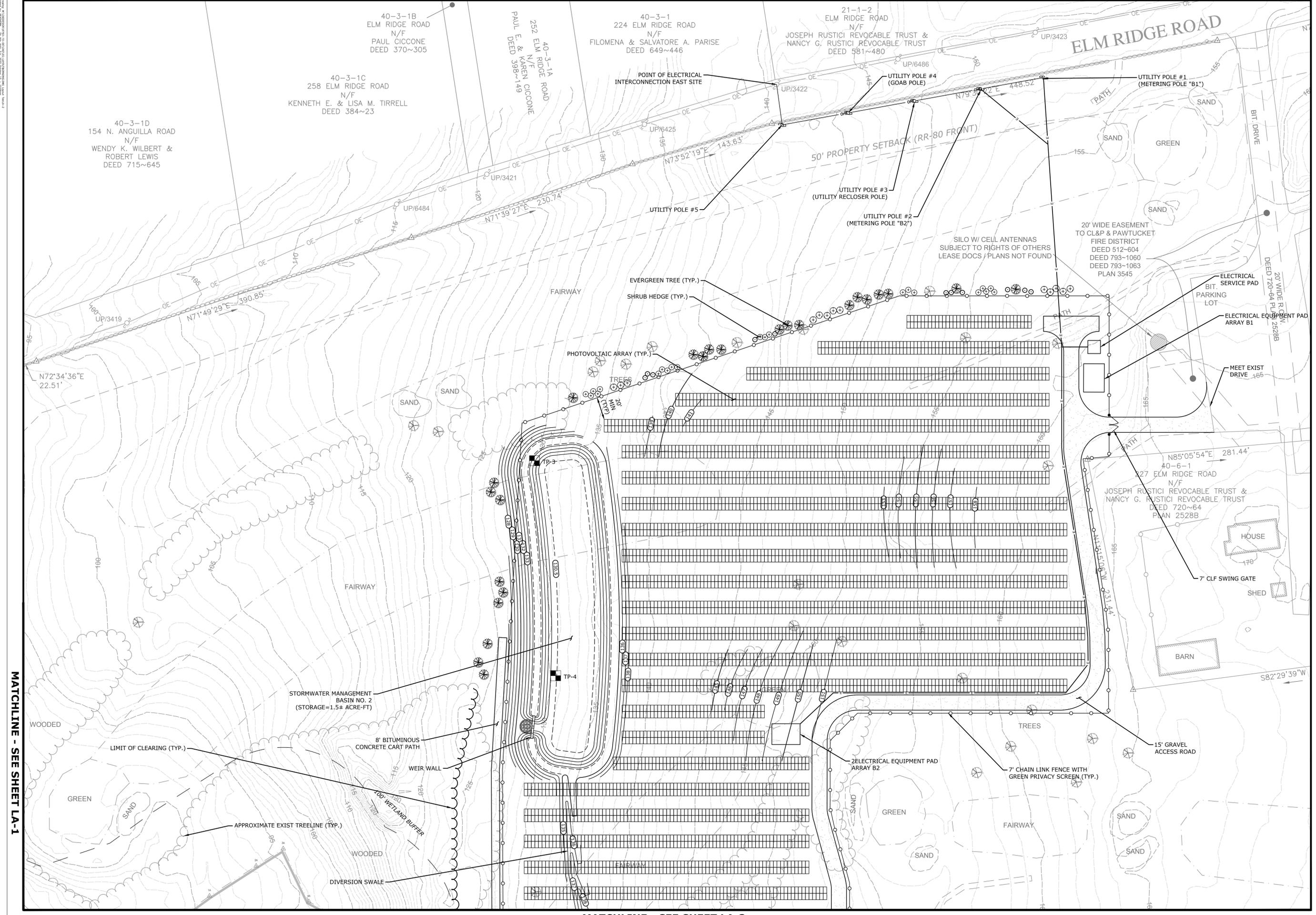
DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION

**SITE LAYOUT & GRADING PLAN - WEST SITE**  
**ELMIRDE GOLF COURSE PV SOLAR FACILITY**  
**GREENSKIES CLEAN ENERGY LLC**  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

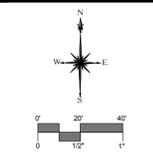
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SCALE: 1"=40'		
DATE: MAY 19, 2020		
PROJECT NO.: 6763-10		
SHEET NO.: 07 OF 15		

**LA-1**



MATCHLINE - SEE SHEET LA-1

MATCHLINE - SEE SHEET LA-3



DESCRIPTION	DATE	BY	MRG	HMM	MRA
DIVERSION SWALE	02/20/20				
REV. ELECTRICAL LABELS	10/29/20				

NOT FOR CONSTRUCTION

**SITE LAYOUT & GRADING PLAN - EAST SITE**  
 ELMRIDGE GOLF COURSE PV SOLAR FACILITY  
 GREENSKIES CLEAN ENERGY LLC  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

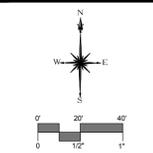
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DATE: MAY 19, 2020		
PROJECT NO.: 6763-10		
SHEET NO.: 08 OF 15		

LA-2

MATCHLINE - SEE SHEET LA-2



MATCHLINE - SEE SHEET LA-1



DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION

SITE LAYOUT & GRADING PLAN - EAST SITE  
ELMIRDE GOLF COURSE PV SOLAR FACILITY  
GREENSKIES CLEAN ENERGY LLC  
229 ELMRIDGE ROAD  
STONINGTON, CONNECTICUT

MRG	HMM	MRA
DESIGNED	DRAWN	CHECKED
SCALE 1"=40'		
DATE MAY 19, 2020		
PROJECT NO. 6763-10		
SHEET NO. 09 OF 15		

LA-3

**PLANT LIST**

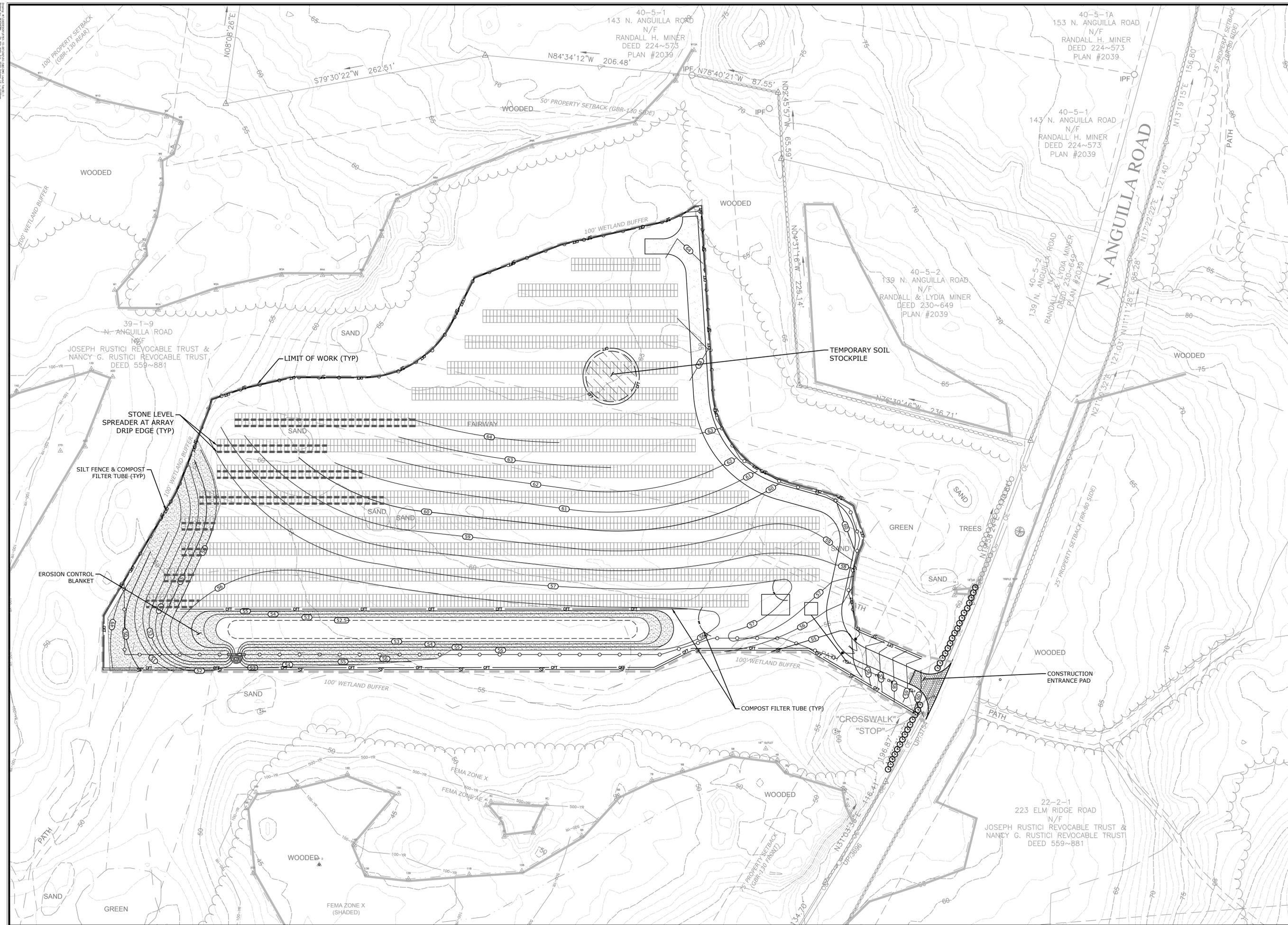
TREES	QTY	KEY	BOTANICAL	COMMON	SIZE	COMMENTS
		AC	Abies concolor	White Fir	6' HT. MIN.	B&B, FULL & DENSE
		PC	Picea pungens 'Fat Albert'	Fat Albert Colorado Spruce	6' HT. MIN.	B&B, FULL & DENSE
SHRUBS	QTY	KEY	BOTANICAL	COMMON	SIZE	COMMENTS
		FI	Forsythia x intermedia 'Spring Glory'	Spring Glory Forsythia	5'-6' HT. MIN.	B&B, FULL & DENSE

SHRUBS	QTY	KEY	BOTANICAL	COMMON	SIZE	COMMENTS
	7	CA	Calamagrostis arundinacea 'Karl Foerster'	Feather Reed Grass	1 GAL.	FULL & DENSE
	21	HG	Hakonechloa macro 'Aureola'	Hakone Grass	1 GAL.	FULL & DENSE
	28	HH	Hosta x 'June'	June Hosta	1 GAL.	FULL & DENSE
	21	HM	Hydrangea macrophylla Endless Summer® BloomStruck	BloomStruck Hydrangea	3 GAL.	FULL & DENSE
	23	IG	Ilex glabra 'Shamrock'	Inkberry	3 GAL.	FULL & DENSE
	17	PS	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	1 GAL.	FULL & DENSE
	8	RA	Rhus aromatica 'Gro-Low'	Gro-Low Sumac	3 GAL.	FULL & DENSE
	43	SA	Sedum 'Autumn Joy'	Autumn Joy Stonecrop	1 GAL.	FULL & DENSE
	8	SF	Spirea japonica 'Gold Flame'	Gold Flame Spirea	3 GAL.	FULL & DENSE
	10	SG	Spirea japonica 'Glow Girl'	Glow Girl Spirea	3 GAL.	FULL & DENSE
	14	SN	Spirea japonica 'Neon Flash'	Neon Flash Spirea	3 GAL.	FULL & DENSE

NOTE: ALL TREES SHALL BE INSTALLED WITH 6' DIAMETER MULCH BED. MULCH SHALL NOT TOUCH THE TRUNK, SEE DETAIL.

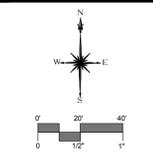
**PLANTING NOTES**

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF TOPSOIL FOR ALL SEEDED AND LANDSCAPED AREAS.
3. ALL PLANTING BEDS SHALL HAVE 12" MINIMUM DEPTH OF TOPSOIL.
4. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED MULCH OVER ALL PLANTING BEDS AND TREE PLANTINGS.
5. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO AND AFTER PLANTING. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING.
6. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE.
7. TREE SPACING AS SHOWN ON PLAN. SYMBOLS SHOWN AT 50-75% MATURE WIDTH.
8. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE OWNER'S REPRESENTATIVE. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
9. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF TREE GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
10. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
11. CONTRACTOR TO REMOVE TREE STAKES AFTER ONE GROWING SEASON.
12. LANDSCAPING SHALL BE KEPT AND MAINTAINED FOR SCREENING PURPOSES IN PERPETUITY BY ELMRIDGE GOLF COURSE AND/OR ITS SUCCESSORS, SO LONG AS A SOLAR ARRAY IS LOCATED ON THIS SITE. MAINTENANCE WILL INCLUDE THE REPLACEMENT OF ANY DEAD/DYING TREES, MAINTAINING SHRUBS AT 10' HT., OR PLANTING OF ADDITIONAL TREES TO FILL IN SPACES.



MATCHLINE - SEE SHEET SE-2

MATCHLINE - SEE SHEET SE-3



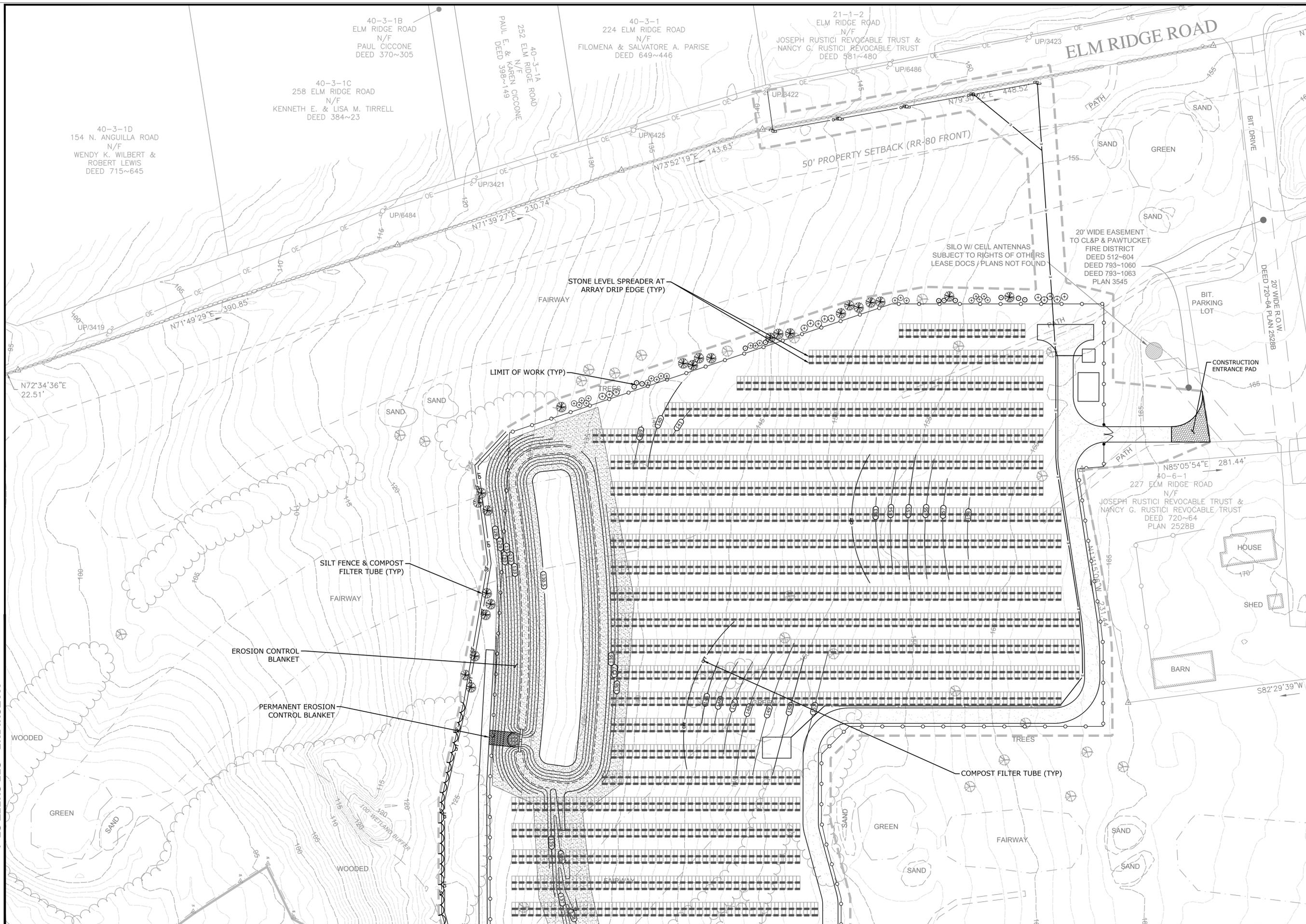
DESCRIPTION	DATE	BY
REV/S&E CONTROLS	10/9/20	HMM

NOT FOR CONSTRUCTION

**SEDIMENT & EROSION CONTROL PLAN - WEST SITE**  
**ELMRIDGE GOLF COURSE PV SOLAR FACILITY**  
**GREENSKIES CLEAN ENERGY LLC**  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

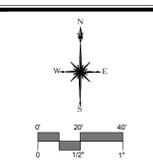
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DESIGNED	DRAWN	CHECKED
SCALE: 1"=40'		
DATE: MAY 19, 2020		
PROJECT NO: 6763-10		
SHEET NO: 10 OF 15		
<b>SE-1</b>		

DATE PLOTTED: 05/19/2020 10:29:20 AM  
SCALE: 1"=40'  
SHEET: 11 OF 15



MATCHLINE - SEE SHEET SE-1

MATCHLINE - SEE SHEET SE-3



DESCRIPTION	DATE	BY
DIVERSION SWALE PERMANENT ECR	6/25/20	HMM
REV. SEE CONTROLS, WORK LIMIT	10/9/20	HMM

NOT FOR CONSTRUCTION

**SEDIMENT & EROSION CONTROL PLAN - EAST SITE**  
**ELMIRIDGE GOLF COURSE PV SOLAR FACILITY**  
**GREENSKIES CLEAN ENERGY LLC**  
 229 ELM RIDGE ROAD  
 STONINGTON, CONNECTICUT

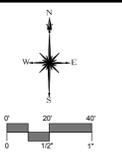
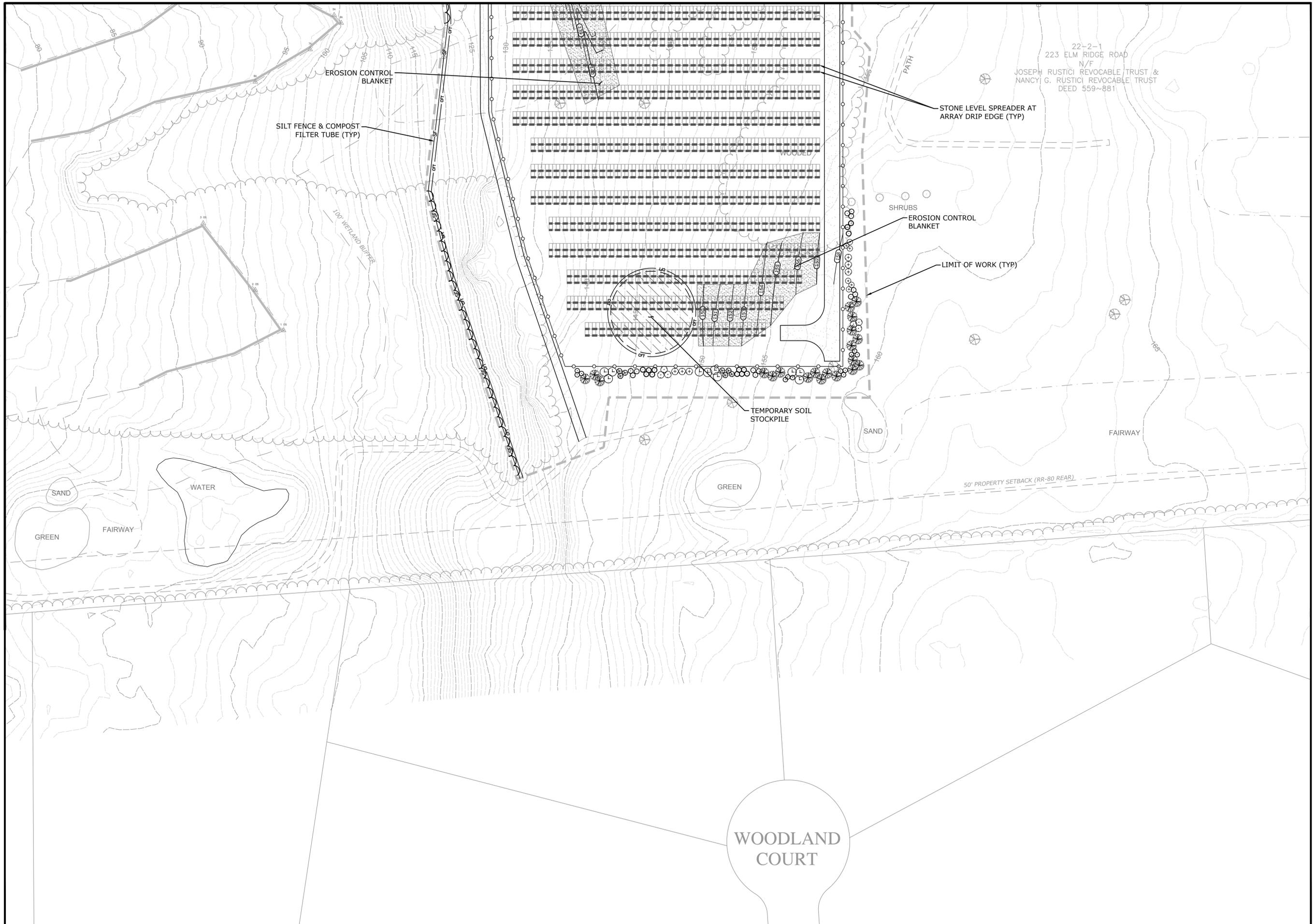
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SHEET NO.: 11 OF 15		

**SE-2**

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MATCHLINE - SEE SHEET SE-2

MATCHLINE - SEE SHEET SE-1



DESCRIPTION	DATE	BY
REV. SEE CONTROLS, WORK LIMIT	10/9/20	HMM

**SEDIMENT & EROSION CONTROL PLAN - EAST SITE**  
 ELMRIDGE GOLF COURSE PV SOLAR FACILITY  
 GREENSKIES CLEAN ENERGY LLC  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

MRG DESIGNED	HMM DRAWN	MRA CHECKED
SCALE 1"=40'		
DATE MAY 19, 2020		
PROJECT NO. 6763-10		
SHEET NO. 12 OF 15		

**SE-3**

# SEDIMENT & EROSION CONTROL SPECIFICATIONS

## GENERAL:

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATER BODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INsofar AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATER BODIES, AND TO PREVENT, INsofar AS POSSIBLE, EROSION ON THE SITE.

## LAND GRADING:

THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:

- THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO TWO VERTICAL (1:2).
- PROVISIONS SHOULD BE INCLUDED TO CONVEY SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
- NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE INTO ADJACENT WETLANDS, WATERCOURSES, OR WATER BODIES.
- PRIOR TO ANY RE-GRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

## TOPSOILING:

TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.

UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.

REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.

APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.

## MATERIAL:

- TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
- TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
- TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES (OVER 1" IN DIAMETER), LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
- AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
- SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS SUITABLE. AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
- THE pH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE pH TO AN ACCEPTABLE LEVEL.

## APPLICATION:

- AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
- SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST SIX INCHES (6"), OR TO THE DEPTH SHOWN ON THE PLANS.

## TEMPORARY VEGETATIVE COVER:

TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

## SITE PREPARATION:

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF ONE (1) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQ. FT.).
- APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQ. FT.) AND SECOND APPLICATION OF 200 LBS. OF 10-10-10 (5 LBS. PER 1,000 SQ. FT.) WHEN GRASS IS FOUR INCHES (4") TO SIX INCHES (6") HIGH. APPLY ONLY WHEN GRASS IS DRY.
- UNLESS HYDROSEEDING, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.
- TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

## ESTABLISHMENT:

- SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
- APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- UNLESS HYDROSEEDING, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4" INCH OF SOIL USING SUITABLE EQUIPMENT.
- MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS.) APPLY STRAW MULCH AND ANCHOR TO SLOPES GREATER THAN 3% OR WHERE CONCENTRATED FLOW WILL OCCUR.

## PERMANENT VEGETATIVE COVER:

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

## SITE PREPARATION:

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
- APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
- APPLY FERTILIZER ACCORDING TO SOIL TEST OR:
  - SPRING SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 300 LBS. OF 10-10-10 FERTILIZER PER ACRE (7 LBS. PER 1,000 SQ. FT.); THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 300 LBS. OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED.
  - FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 LBS. PER 1,000 SQ. FT.).

## EROSION CHECKS:

### GENERAL:

TEMPORARY PERVIOUS BARRIERS USING GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, COMPOST FILTER TUBE HELD IN PLACE WITH STAKES, AND EROSION CONTROL BLANKET SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

### CONSTRUCTION:

GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP MINIMUM OF TWO FEET (2').

COMPOST FILTER TUBES SHOULD BE PLACED WITH A MINIMUM OVERLAP OF THREE FEET (3') OR SLEEVED TO JOIN IN A CONTINUOUS BARRIER. COMPOST TUBES SHALL BE TAMPED IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE.

COMPOST TUBES SHALL BE STAKED OR LEANED AGAINST SUPPORTS ON SLOPES 2:1 OR GREATER. STAKES SHALL BE LOCATED AS REQUIRED TO SECURE TUBES IN PLACE UP TO FIVE FEET (5') APART. COMPOST TUBES SHALL BE PLACED AS CLOSE TO THE LIMITS OF SOIL DISTURBANCE AS POSSIBLE.

### INSTALLATION AND MAINTENANCE:

- GEOTEXTILE FENCE, EROSION CONTROL BLANKET AND COMPOST FILTER TUBE SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
- ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
- INSPECTIONS SHALL BE FREQUENT (AT MINIMUM EVERY 7 CALENDAR DAYS AND AFTER EVERY RAINFALL EVENT GREATER THAN ONE HALF INCH) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM WATER FLOW OR DRAINAGE.

## TEMPORARY STABILIZATION FOR WINTER CONDITIONS:

ANY SIGNIFICANT AREAS OF EXPOSED SOIL WHICH HAVE BEEN DISTURBED AFTER OCTOBER 15<sup>TH</sup> SHALL BE TEMPORARILY STABILIZED BY ONE OF THE FOLLOWING METHODS UNTIL SUCH TIME THAT PERMANENT STABILIZATION MEASURES AND SEEDING CAN BE APPLIED, TYPICALLY AFTER MAY 15<sup>TH</sup>.

- INSTALLATION OF AN ANCHORED EROSION CONTROL BLANKET. EROSION CONTROL BLANKETS SHOULD NOT BE INSTALLED ON SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
- APPLICATION OF STRAW MULCH AT A RATE OF FOUR (4) TONS PER ACRE.
- APPLICATION OF WOOD CHIP MULCH AT A MINIMUM DEPTH OF THREE INCHES (3"). WOOD CHIP MULCH SHOULD NOT BE USED ON SLOPES GREATER THAN 2:1 (H:V). ALL WOOD CHIP MULCH SHALL BE REMOVED PRIOR TO RESUMING SITE GRADING.

## VEGETATIVE COVER SELECTION & MULCHING:

### TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 3 LBS./1,000 SQ.FT. (10LJUM PERENNE)

### PERMANENT VEGETATIVE COVER:

- NEW ENGLAND CONSERVATION/WILDLIFE MIX OR EQUAL:
  - RECOMMENDED APPLICATION RATE: 1 POUND PER 1,750 SF SEED MIX SPECIES: Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardii*), Creeping Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamaecrista fasciculata*), Deer Tongue (*Panicum clandestinum*), Indian Grass (*Sorghastrum nutans*), Ox Eye Sunflower (*Helopsis helianthoides*), Common Milkweed (*Asclepias syriaca*), Spotted Joe Pye Weed (*Eupatorium maculatum*), Grass Leaved Goldenrod (*Euthamia graminifolia*), Blue Vervain (*Verbena hastata*), New England Aster (*Aster novae-angliae*), Early Goldenrod (*Solidago juncea*).
- TEMPORARY MULCHING: STRAW AT 70-90 LBS./1,000 SQ.FT. (TEMPORARY VEGETATIVE AREAS) WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

### ESTABLISHMENT:

- SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
- SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
- APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
- MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
- USE PROPER INOCULANT ON ALL LEGUME SEEDINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
- THE USE OF SOD IS AN ACCEPTABLE ALTERNATIVE WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

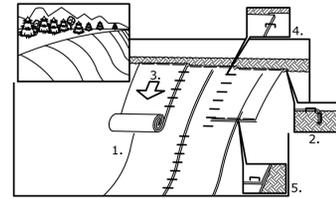
### MAINTENANCE:

- TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.
- ON SITES WHERE GRASSES PREDOMINATE, BROADCAST ANNUALLY 500 POUNDS OF 10-10-10 FERTILIZER PER ACRE (12 LBS. PER 1,000 SQ. FT.) OR AS NEEDED ACCORDING TO ANNUAL SOIL TESTS.
- ON SITES WHERE LEGUMES PREDOMINATE, BROADCAST EVERY THREE (3) YEARS OR AS INDICATED BY SOIL TEST 300 POUNDS OF 0-20-20 OR EQUIVALENT PER ACRE (8 LBS PER 1,000 SQ. FT.).

## CONSTRUCTION SEQUENCE & SCHEDULE

CONSTRUCTION IS ANTICIPATED TO COMMENCE IN SUMMER 2020 AND WILL LAST APPROXIMATELY THREE MONTHS. THE GENERAL SEQUENCE OF CONSTRUCTION IS AS FOLLOWS:

- STAKE OUT THE LIMIT OF WORK. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN.
- INSTALL S&E CONTROLS FOR SITE CLEARING ACTIVITIES AS SHOWN ON THE DRAWINGS.
- CLEAR AND GRUB THE WOODED AREA OF THE SITE WITHIN THE LIMITS SHOWN ON THE PLANS.
- CONSTRUCT THE STORMWATER MANAGEMENT BASINS, OUTLET WEIR WALLS, AND APURTANCES.
- ANY DISTURBED SLOPES ARE TO BE ESTABLISHED TO FINISHED GRADE WITH PLACEMENT OF TOPSOIL BEFORE PV ARRAY RACKING INSTALLATION. STABILIZE ALL SLOPES OUTSIDE OF THE PV ARRAY COMPOUND AREA WITH TOPSOIL AND SEED. INSTALL EROSION CONTROL BLANKET AS SHOWN ON THE DRAWINGS.
- INSTALL PV SOLAR PANEL ARRAYS, ELECTRICAL COMPONENTS, CONDUIT, AND PERIMETER FENCING.
- REMOVE S&E CONTROLS ONCE ALL DISTURBED AREAS HAVE COMPLETELY STABILIZED.

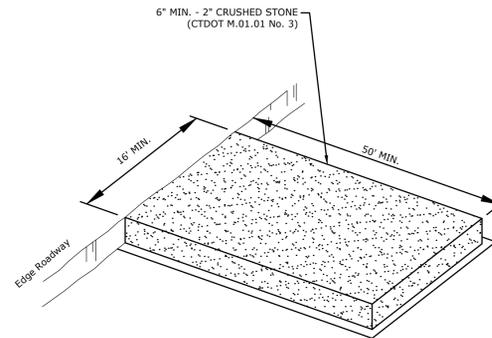


### NOTES:

- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN ROLLMAX S150 OR APPROVED EQUIVALENT.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 4"-6" OVERLAP.
- WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAP AREA, APPROXIMATELY 12" APART.

## APPLICATION OF EROSION CONTROL BLANKET ON SLOPES

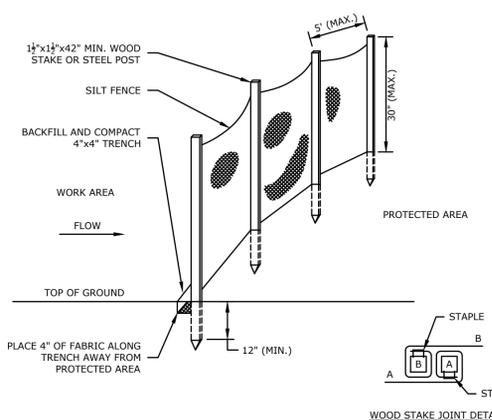
NOT TO SCALE



NOTE: STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH PROMOTE VEHICULAR TRACKING OF MUD

## CONSTRUCTION ENTRANCE PAD

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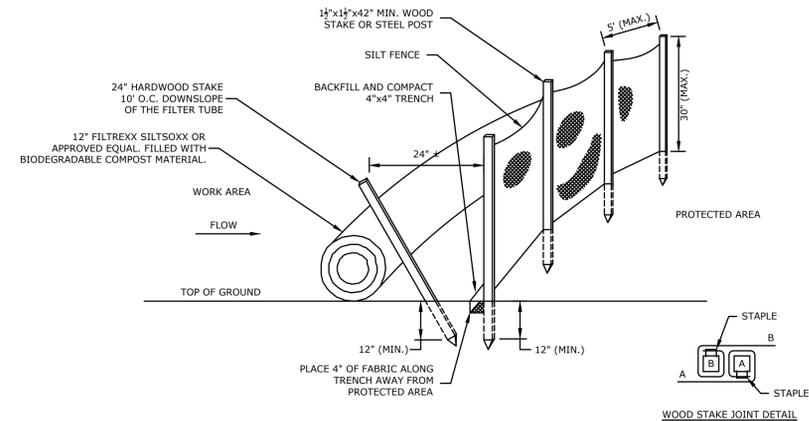


### GENERAL NOTES:

- FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE UP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
- FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

## SILT FENCE BARRIER

NOT TO SCALE

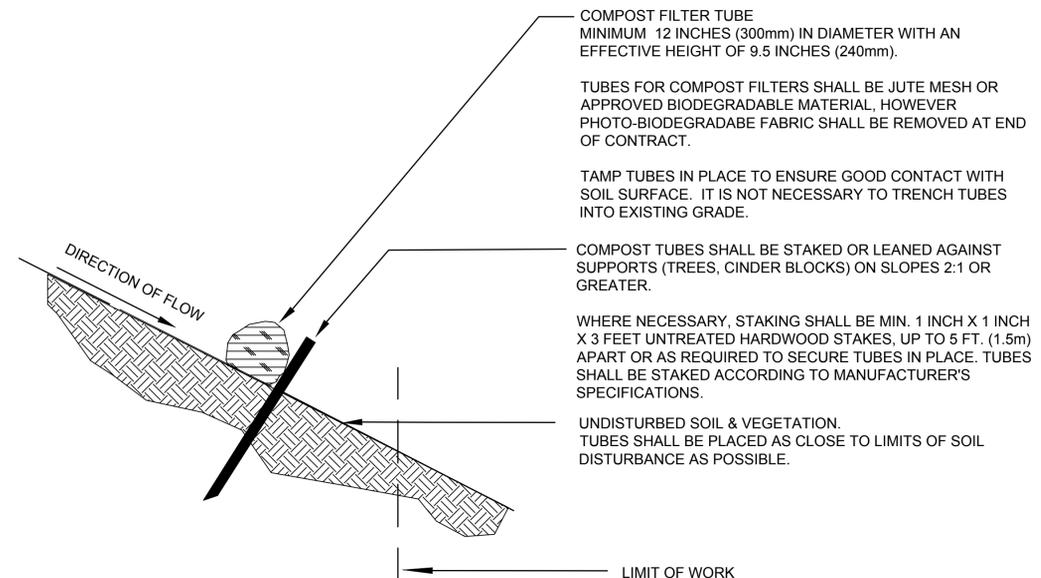


### GENERAL NOTES:

- FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE UP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
- FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

## SILT FENCE BARRIER & COMPOST FILTER TUBE

NOT TO SCALE



### GENERAL NOTES:

- PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
- INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
- TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
- DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
- ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
- ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

## COMPOST FILTER TUBE

NOT TO SCALE



**MILONE & MACBROOM**  
1350 MAIN STREET, SUITE 1012  
SPRINGFIELD, MA  
WWW.MILONE-MA.COM

DESCRIPTION	DATE	BY
REV. SPECS & ECG DETAIL	10/9/20	HMM

**SITE DETAILS**  
 ELMRIDGE GOLF COURSE PV SOLAR FACILITY  
 GREENSKIES CLEAN ENERGY LLC  
 229 ELMRIDGE ROAD  
 STONINGTON, CONNECTICUT

MRG	HMM	MRA
DESIGNED	DRAWN	CHECKED
N.T.S.		
DATE: MAY 19, 2020		
PROJECT NO.: 6763-10		
SHEET NO.: 13 OF 15		
<b>SD-1</b>		



