VORYS

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Founded 1909

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June 25, 2021

Tanowa Troupe
Ohio Power Siting Board
Secretary, Administration/Docketing
180 E. Broad Street, 11th Floor
Columbus, OH 43215

Re: **In the Matter of the Application of Hecate Energy Highland 4, LLC's Application for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generating Facility in Clay and Whiteoak Townships in Highland County, Ohio Case No. 20-1288-EL-BGN/Condition Compliance Update**

Dear Ms. Troupe:

On March 18, 202l, Hecate Energy Highland 4, LLC ("Hecate Energy) was issued a certificate of environmental compatibility and public need ("Certificate") by the Ohio Power Siting Board ("Board") to construct a 65 MW solar-powered electric generating facility in Clay and Whiteoak Townships, Highland County, Ohio. On June 24, 2021, the Board issued an entry on rehearing modifying the Certificate to allow for the construction of a 100 MW solar-powered electric generating facility. The 100 MW facility now consists of the 65 MW phase called New Market Solar I and the 35 MW phase called New Market Solar II.

Hecate Energy is providing, through this correspondence, additional information on condition compliance for various conditions under the 100 MW Certificate. The majority of attachments to this correspondence were previously provided to the Board's Staff as indicated below.

Condition 6 (required permits): Copies of various permits for the New Market Solar II phase were provided to Board Staff on March 19, 2021. These were also filed on the case docket on March 19 and April 15, 2021.

Condition 8 (final project design): Detailed engineering drawings and mapping for the final project design for the New Market Solar II phase were submitted to Board Staff on March 19, 2021 and March 23, 2021. Copies of the detailed engineering drawings and mapping

previously submitted are attached hereto. Finally, GIS data was submitted to Staff on March 19, 2021 and March 23, 2021.

Condition 12 (landscape and lighting plan): The landscape and lighting plan for the New Market Solar II phase was submitted to Board Staff on March 23, 2021. A copy is attached hereto.

Condition 14 (noise study): The updated noise study was submitted to Board Staff on March 23, 2021. A copy is attached hereto.

Condition 15 (decommissioning plan): The updated decommissioning plan and decommissioning estimate for the New Market Solar II phase was submitted to Board Staff on March 23, 2021. A copy is attached hereto.

Condition 16 (frac-out contingency plan): The frac-out contingency plan for the New Market Solar II phase was submitted to Board Staff on March 23, 2021. The plan was also filed on the docket on March 23, 2021. A copy is attached hereto.

Condition 18 (sensitive areas): A map of sensitive areas for the New Market Solar II phase was submitted to Board Staff on March 19, 2021. A copy is attached hereto. Additionally, Board Staff has previously concurred in the use of Terracon as the environmental specialist contemplated by this condition.

Condition 22 (final traffic plan): A final traffic for the New Market Solar II phase is being provided pursuant to this condition. In addition, a copy of the executed road use, repair and maintenance agreement with Highland County and the Highland County Engineer is also being provided pursuant to this condition. Copies of these documents are attached hereto.

Please do not hesitate to call me or Mr. Yuri Otarov (Yuri.Otarov@algonquinpower.com, 905-465-4531) if there are any questions on these submittals.

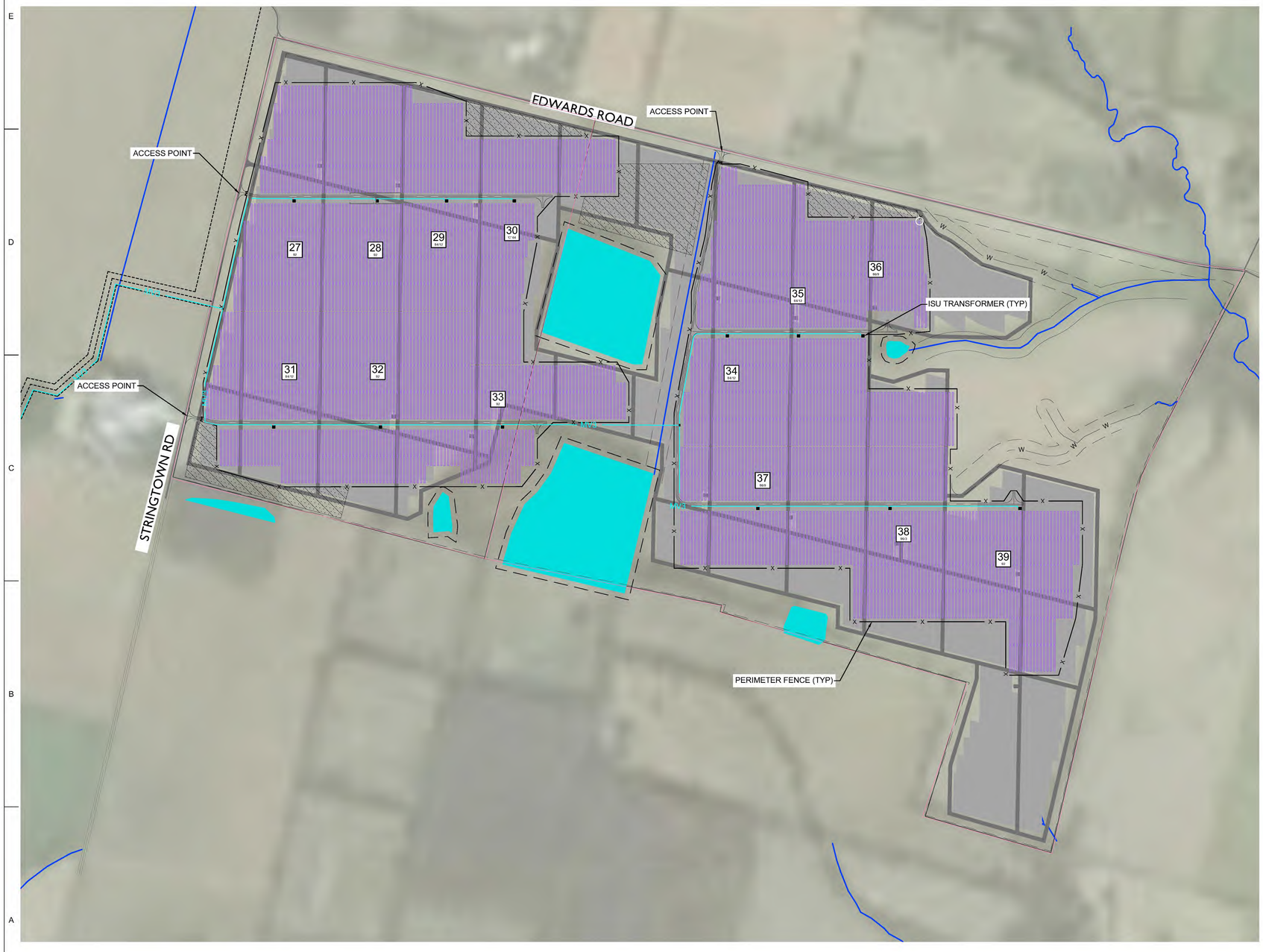
Very truly yours,

/s/ Michael J. Settineri

Michael J. Settineri

MJS/jaw

cc: Yuri Otarov, Liberty Power
Anna Sanyal, Vorys, Sater, Seymour and Pease LLP
Karen Winters, Squire Patton Boggs (US) LLP
Danelle Gagliardi, Squire Patton Boggs (US) LLP



LEGEND

- PROJECT BOUNDARY
- EXISTING PARCEL LINE
- PROPERTY SETBACK
- NEW ARRAY AREAS
- PERIMETER FENCE
- SITE ENTRANCE LIGHT (SUBSTATION ONLY)
- INVERTER STATION AND ISU XFMR
- PHASE 2 - UNDERGROUND MV FEEDER - 3
- PROPOSED MV FEEDER EASEMENT
- SITE ROAD (12')
- POWER BLOCK (PB) OUTLINE
- POTENTIAL LAYDOWN YARD
- STREAM
- WETLAND
- CONCEPTUAL ARRAY
- CONCEPTUAL SITE ROAD

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Eden Prairie, Minnesota 55344
Phone: 952-646-0236
www.evs-eng.com

CLIENT

PROJECT
NEW MARKET

LOCATION
HIGHLAND COUNTY, OH

SUBMITTAL
EXHIBIT

SCALE

NORTH
0 300 600
SCALE IN FEET

#	DATE	DESCRIPTION

PROFESSIONAL CERTIFICATION

PRELIMINARY NOT FOR CONSTRUCTION OR PROCUREMENT

DRAWN BY	CHECKED BY
C TA	KPH
DATE	PROJECT #
2021.03.18	2020-189.1

SHEET NAME
SITE LAYOUT - NMS 2 - 35 MW

SHEET NUMBER
E-5501C

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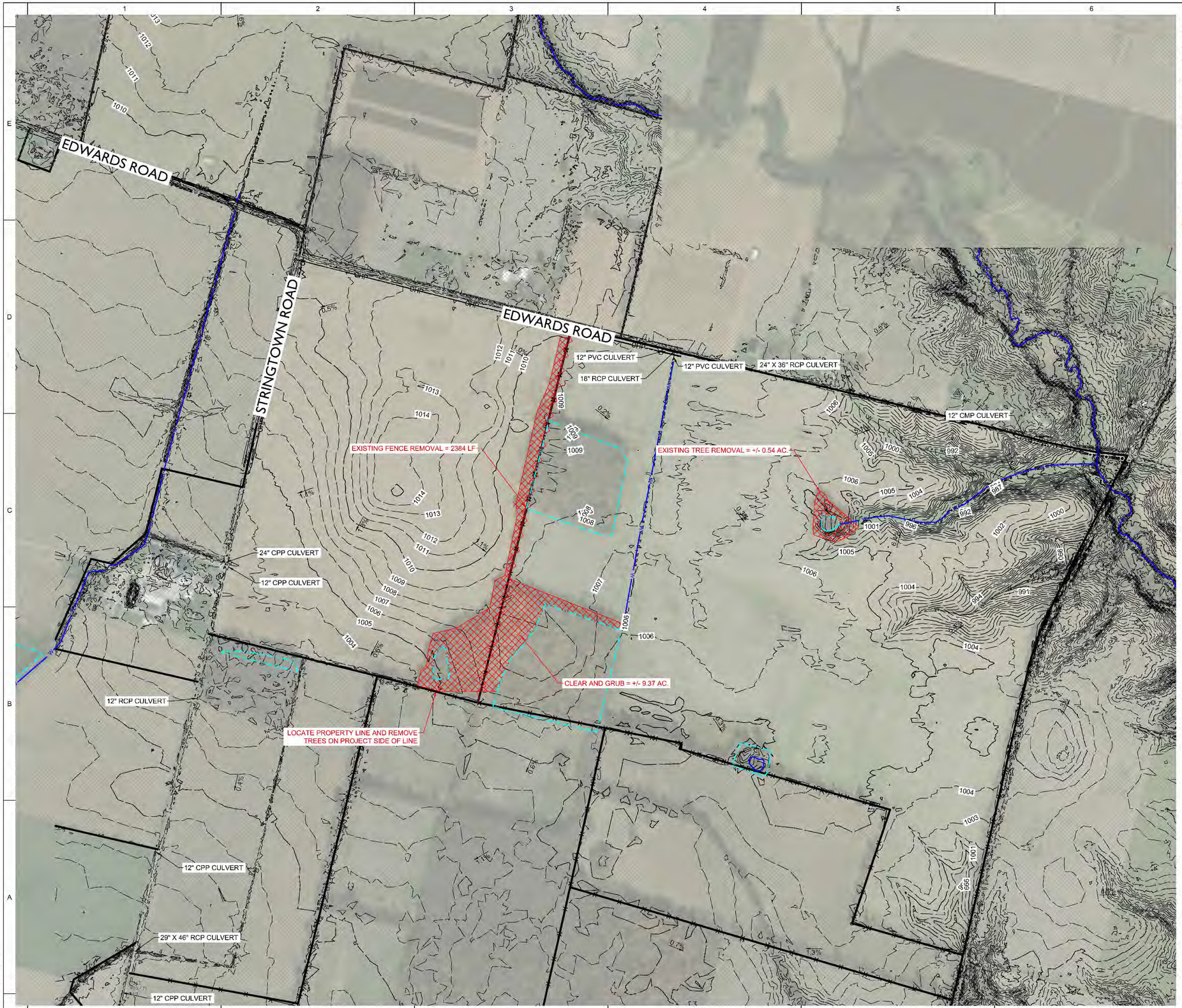

LEGEND

EXISTING FEATURES

- PROPERTY LINE
- EASEMENT LINE
- ROAD RIGHT OF WAY
- NON-PARTICIPATING PROPERTIES
- ROAD CENTERLINE
- FENCE
- WETLANDS
- WATERBODY
- SWALE
- WATER MAIN
- CULVERT
- OVERHEAD POWER
- MAJOR CONTOUR
- MINOR CONTOUR

REMOVALS

- TREE REMOVAL
- FENCE REMOVAL
- BUILDING REMOVAL

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CLIENT

McCARTHY

PROJECT
NEW MARKET

LOCATION
HIGHLAND COUNTY, OH

SUBMITTAL
OHIO POWER SITTING BOARD REVIEW

SCALE

0 300 600
SCALE IN FEET

#	DATE	DESCRIPTION

PROFESSIONAL CERTIFICATION

PRELIMINARY NOT FOR CONSTRUCTION OR PROCUREMENT

DRAWN BY	CHECKED BY
NO	DB
DATE	**PROJECT #**
2021.03.18	2020-189.1

SHEET NAME
EXISTING CONDITIONS AND REMOVALS PLAN
SHEET NUMBER
C-103

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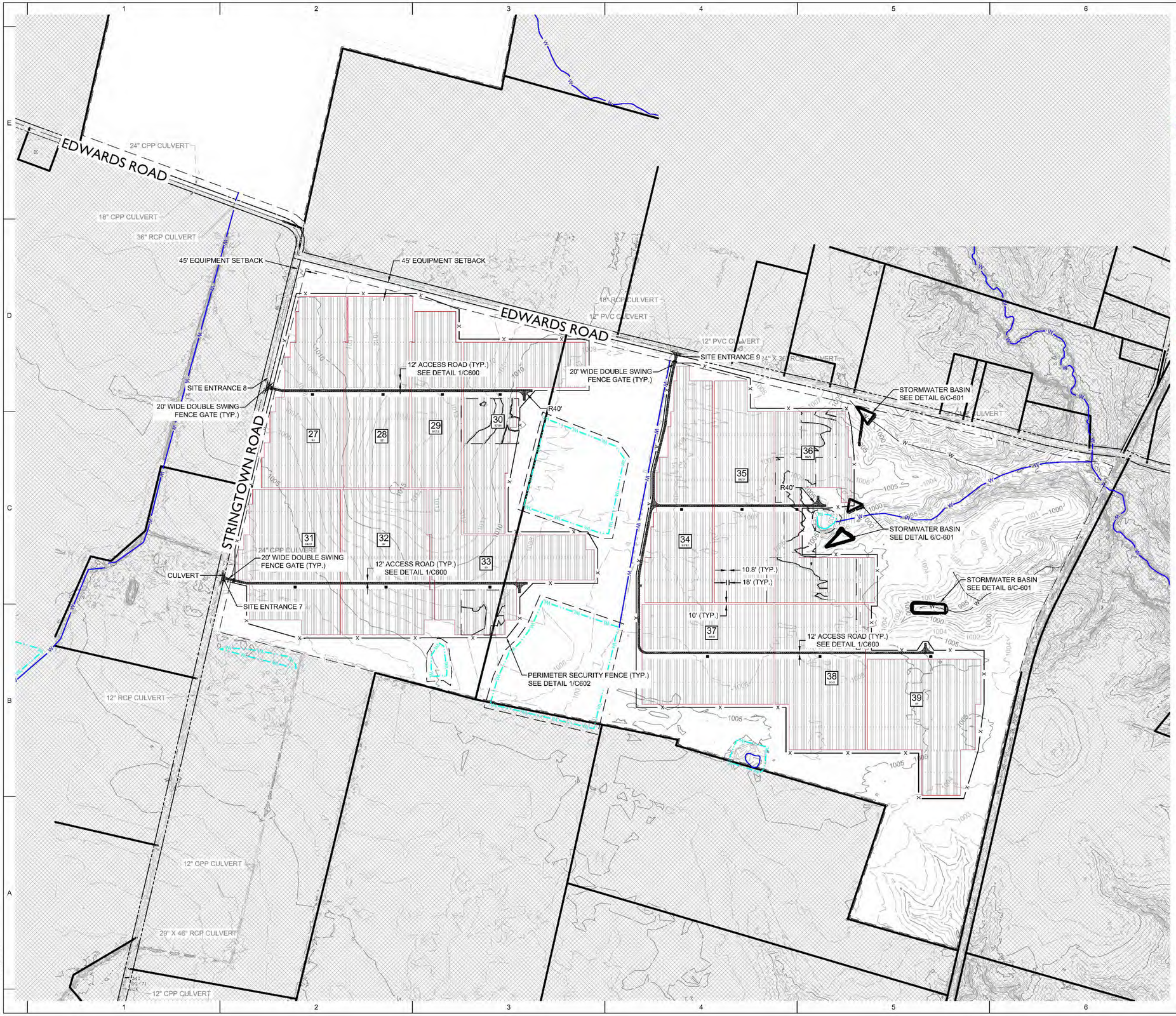

LEGEND

EXISTING FEATURES

- PROPERTY LINE
- EASEMENT LINE
- ROAD RIGHT OF WAY
- NON-PARTICIPATING PROPERTIES
- ROAD CENTERLINE
- FENCE
- WETLANDS
- WATERBODY
- SWALE
- WATER MAIN
- CULVERT
- OVERHEAD POWER
- MAJOR CONTOUR
- MINOR CONTOUR

PROPOSED FEATURES

- AGGREGATE ROAD
- POTENTIAL LAYDOWN AREA
- POWER BLOCK BOUNDARY
- CHAIN LINK FENCE
- SETBACK LINE
- CULVERT
- GRADING EDGE
- MAJOR CONTOUR
- MINOR CONTOUR
- RIPRAP
- SEDIMENT BASIN
- SWALE / DITCH
- DIRT ROAD EXTENTS

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CLIENT

McCARTHY

PROJECT
NEW MARKET

LOCATION
HIGHLAND COUNTY, OH

SUBMITTAL
OHIO POWER SITTING BOARD REVIEW

SCALE

0 300 600
SCALE IN FEET

#	DATE	DESCRIPTION

PROFESSIONAL CERTIFICATION

PRELIMINARY NOT FOR CONSTRUCTION OR PROCUREMENT

DRAWN BY	CHECKED BY
NO	DB
DATE	**PROJECT #**
2021.03.18	2020-189.1

SHEET NAME
SITE AND GRADING PLAN
SHEET NUMBER
C-203

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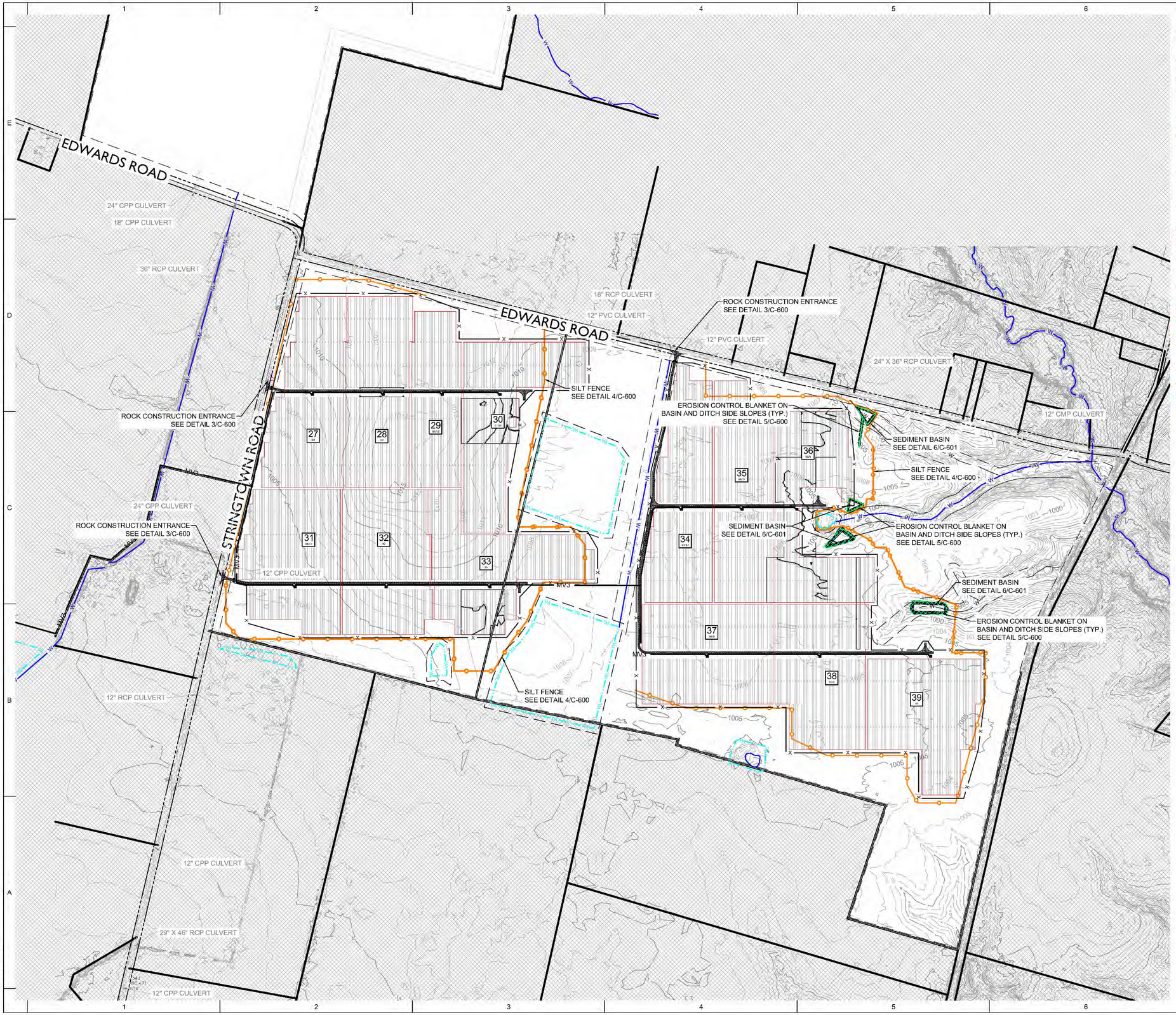

LEGEND

EXISTING FEATURES

- PROPERTY LINE
- EASEMENT LINE
- ROAD RIGHT OF WAY
- NON-PARTICIPATING PROPERTIES
- ROAD CENTERLINE
- FENCE
- WETLANDS
- WATERBODY
- SWALE
- WATER MAIN
- CULVERT
- OVERHEAD POWER
- MAJOR CONTOUR
- MINOR CONTOUR

PROPOSED FEATURES

- AGGREGATE ROAD
- POTENTIAL LAYDOWN AREA
- POWER BLOCK BOUNDARY
- CHAIN LINK FENCE
- SETBACK LINE
- CULVERT
- GRADING EDGE
- MAJOR CONTOUR
- MINOR CONTOUR
- RIPRAP
- SEDIMENT BASIN
- SWALE / DITCH
- DIRT ROAD EXTENTS

EROSION CONTROL FEATURES

- SILT FENCE
- EROSION CONTROL BLANKET
- ROCK CONSTRUCTION ENTRANCE

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PROJECT
NEW MARKET

LOCATION
HIGHLAND COUNTY, OH

SUBMITTAL
OHIO POWER SITTING BOARD REVIEW

SCALE

0 100 200
SCALE IN FEET

#	DATE	DESCRIPTION

PROFESSIONAL CERTIFICATION

PRELIMINARY NOT FOR CONSTRUCTION OR PROCUREMENT

DRAWN BY	CHECKED BY
NO	DB
DATE	**PROJECT #**
2021.03.18	2020-189.1

SHEET NAME
EROSION CONTROL PLAN
SHEET NUMBER
C-303

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HECATE ENERGY - HIGHLAND 2
NEW MARKET SOLAR II

LANDSCAPE BUFFER SET

HIGHLAND COUNTY, OHIO

date: 03/17/2021

INDEX OF SHEETS

PLANNING
URBAN DESIGN
LAND PLANNING
LANDSCAPE ARCHITECTURE
MEISNER + ASSOCIATES LAND VISION
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Cincinnati, Ohio 45202
(513) 321-2796
plans@meisnerandassociates.com

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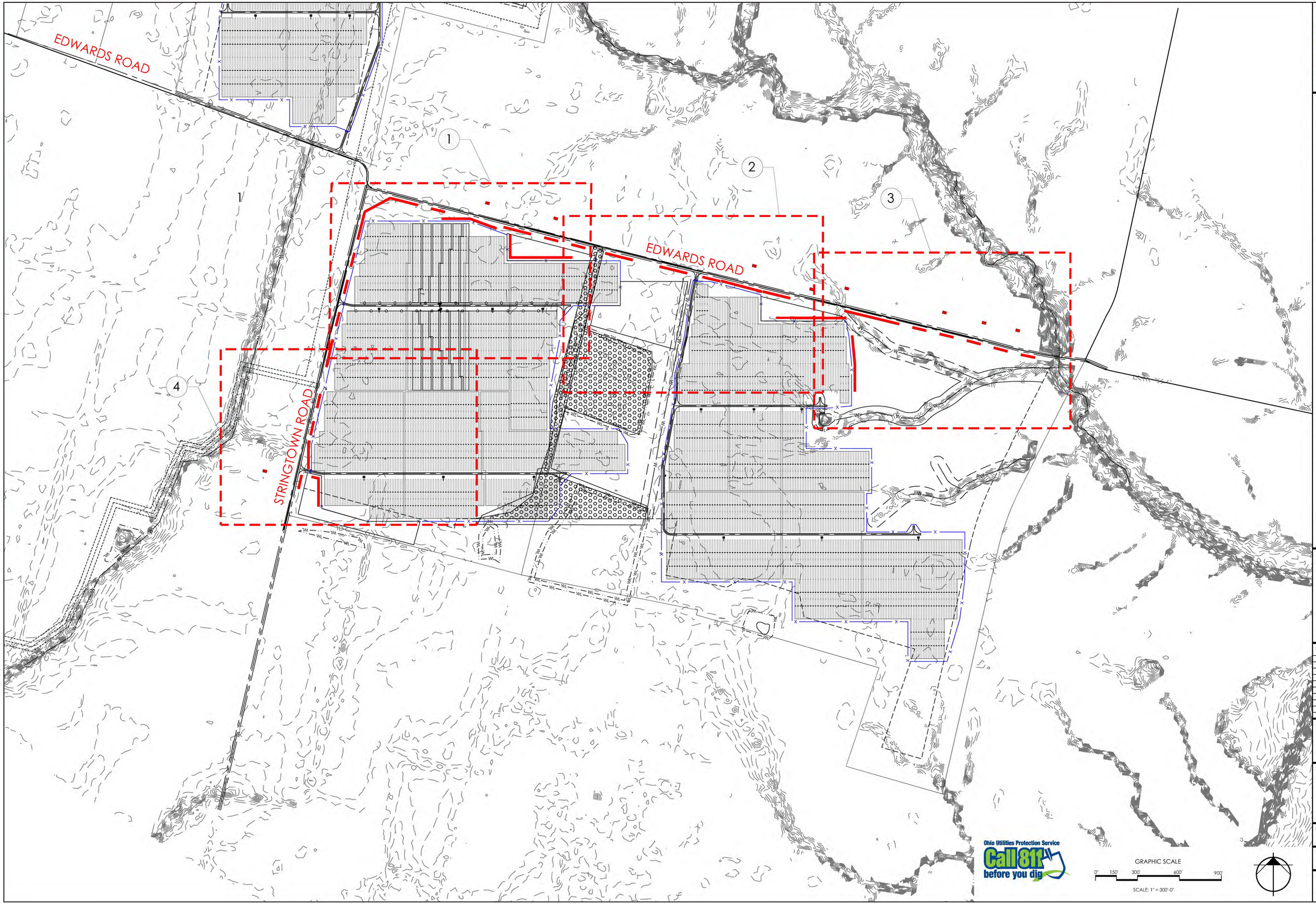

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NEW MARKET SOLAR
- II -
HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

DRAWING SET:

SHEET TITLE:
KEYMAP

DRAWN BY: AS- FP
CHECKED BY: GM
PROJ. NO.: 41503
DATE: 03-17 -21
SHEET NUMBER: L-0

Ohio Utilities Protection Service
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GRAPHIC SCALE
0' 150' 300' 600' 900'
SCALE: 1" = 300'-0"

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STRINGTOWN ROAD

BUFFER C
LENGTH 200'

BUFFER C
LENGTH 100'

BUFFER C
LENGTH 200'

BUFFER A
LENGTH - 200'

BUFFER B
LENGTH - 200'

BUFFER C
LENGTH 200'

BUFFER C
LENGTH 100'

BUFFER C
LENGTH 100'

BUFFER A
LENGTH -
100'

BUFFER B LENGTH - 300'

BUFFER A
LENGTH - 100'

BUFFER C
LENGTH 200'

BUFFER C
LENGTH 100'

BUFFER C
LEGTH 100'

MV1 MV2 MV3 DC

LEGEND

- LANDSCAPE BUFFER TYPE A
- LANDSCAPE BUFFER TYPE B
- LANDSCAPE BUFFER TYPE C
- RESIDENCES

GRAPHIC SCALE
0' 30' 60' 120' 180'
SCALE: 1" = 60'-0"

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NEW MARKET SOLAR - II -

HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

DRAWING SET:

SHEET TITLE:
LANDSCAPE BUFFER - 1 PLAN

DRAWN BY:	CHECKED BY:
AS-FP	GM

PROJ. NO.:	DATE:
41503	03-17 -21

SHEET NUMBER:
L-1

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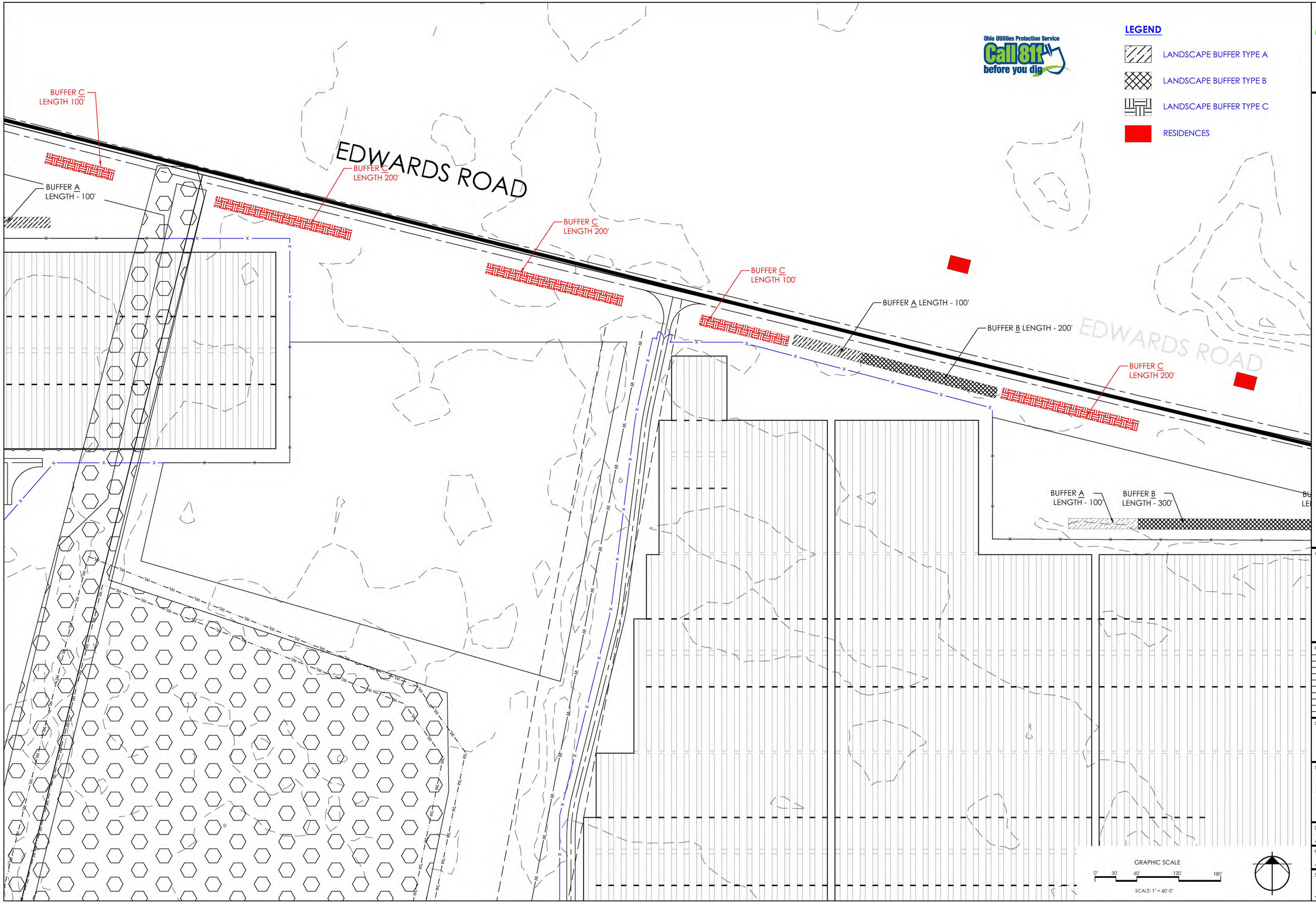

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NEW MARKET SOLAR - II -

HIGHLAND COUNTY, OHIO

CLIENT:

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SHEET TITLE:
LANDSCAPE BUFFER - 2 PLAN

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AS-FP	GM

PROJ. NO.:	DATE:
41503	03-17 -21

SHEET NUMBER:
L-2

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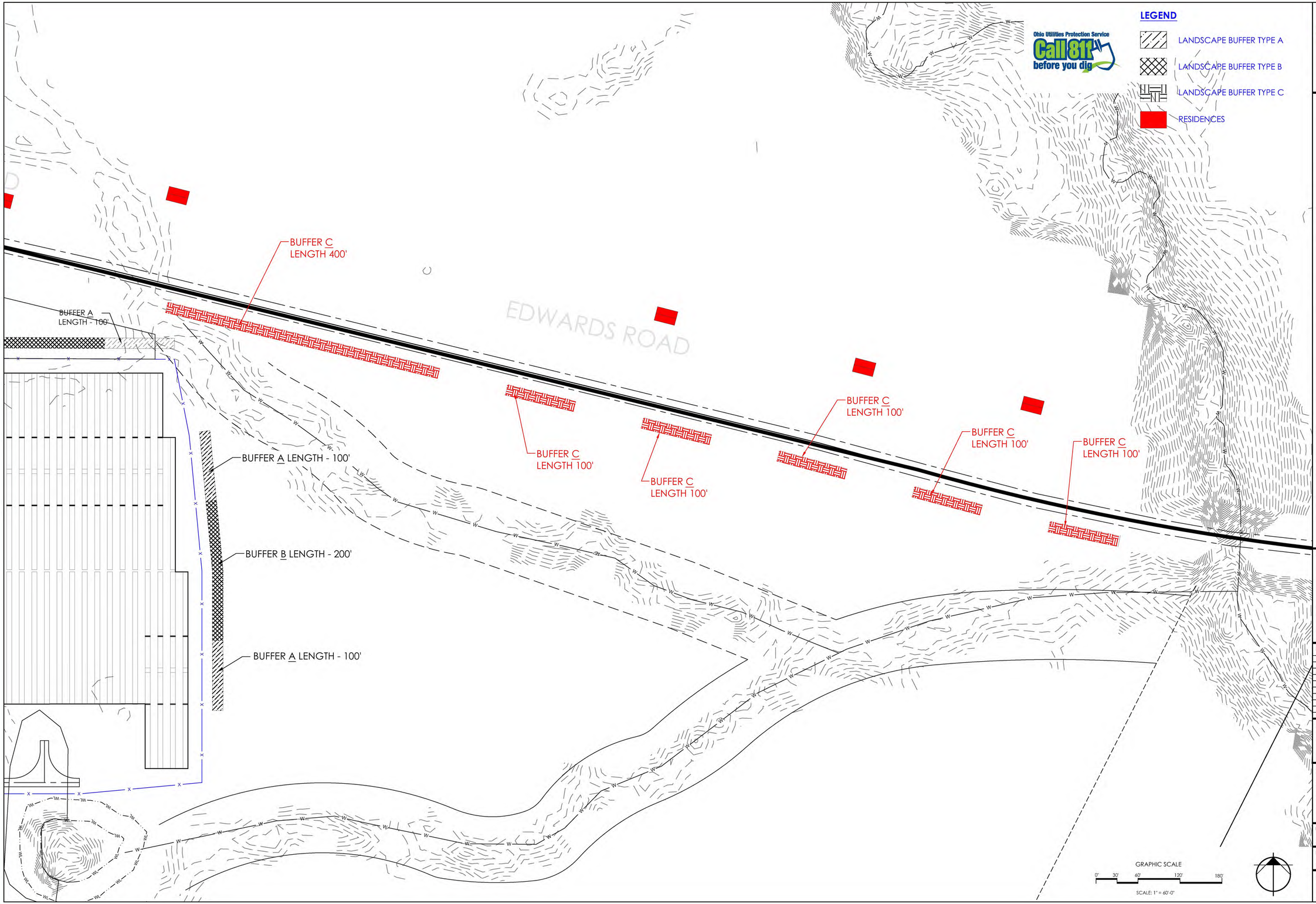

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NEW MARKET SOLAR - II -

HIGHLAND COUNTY, OHIO

CLIENT:

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SHEET TITLE:
LANDSCAPE BUFFER - 3 PLAN

DRAWN BY:	CHECKED BY:
AS-FP	GM

PROJ. NO.:	DATE:
41503	03-17 -21

SHEET NUMBER:
L-3

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LEGEND

- LANDSCAPE BUFFER TYPE A
- LANDSCAPE BUFFER TYPE B
- LANDSCAPE BUFFER TYPE C
- RESIDENCES

BUFFER C LENGTH 100'

BUFFER C LENGTH 100'

BUFFER A LENGTH - 100'

BUFFER B LENGTH - 100'

BUFFER B LENGTH - 200'

BUFFER C LENGTH 100'

BUFFER A LENGTH - 100'

STRINGTOWN ROAD

GRAPHIC SCALE
0' 30' 60' 120' 180'
SCALE: 1" = 60'-0"

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NEW MARKET SOLAR
- II -
HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

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SHEET TITLE:
LANDSCAPE BUFFER - 4 PLAN

DRAWN BY:	CHECKED BY:
AS- FP	GM

PROJ. NO.:	DATE:
41503	03-17 -21

SHEET NUMBER:
L-4

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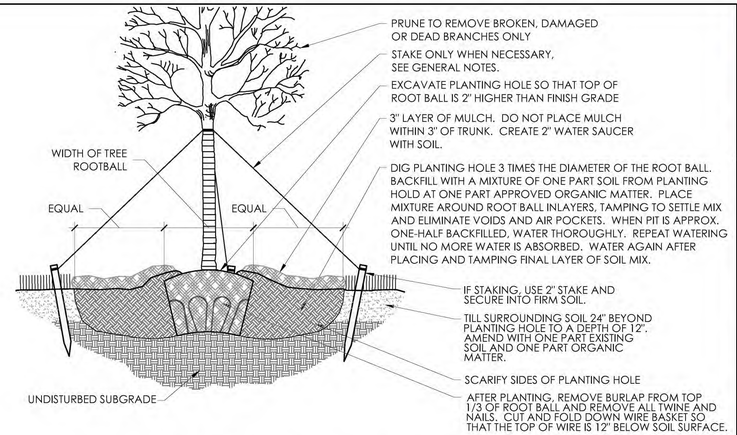
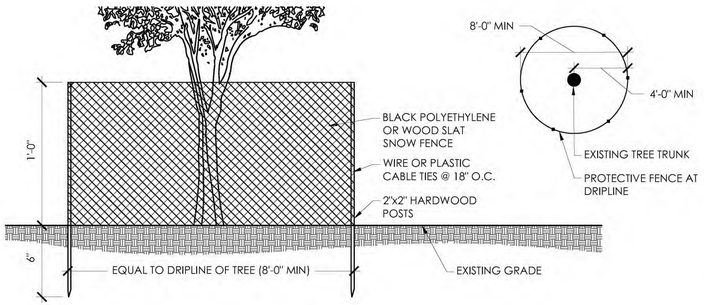
HECATE ENERGY - NEW MARKET II PLANT SCHEDULE

Key	Scientific Name	Common Name	Size	Root	Quantity	Spacing	Remarks
Deciduous Trees							
AA	Amelanchier arborea	Downy Serviceberry	8' Ht	B&B	22	See Plan	Clump - Specimen
CC	Cercis canadensis	Eastern Redbud	8' Ht	B&B	67	See Plan	Clump - Specimen
CCr	Crataegus crus-galli inermis	Cockspur Hawthorne	8' Ht	B&B	120	See Plan	Clump - Specimen
Evergreen Trees							
TO	Thuja occidentalis	Northern White Cedar	8' Ht	B&B	108	See Plan	Unsheared - Specimen
PV	Pinus virginiana	Virginia Pine	8' Ht	B&B	248	See Plan	Unsheared - Specimen
Deciduous Shrubs							
VD	Viburnum dentatum	Arrowwood Viburnum	4' Ht	#5 cont.	88	See Plan	Full - Specimen
CR	Cornus racemosa	Gray Dogwood	8' Ht	#5 cont.	51	See Plan	Full - Specimen
CS	Cornus sericea	Redosier Dogwood	8' Ht	#5 cont.	44	See Plan	Full - Specimen
IV	Ilex verticillata	Winterberry	30"W	#5 cont.	96	See Plan	Full - Specimen
Semi Evergreen Shrubs							
MP	Myrica pensylvanica	Northern Bayberry	4' Ht	B&B	123	See Plan	Full - Specimen
Perennials							
RF	Rudbeckia fulgida var. sullivantii	Sullivant's Coneflower	24"	#3 cont.	774	See Plan	Full - Well Rooted
Ornamental Grasses							
AG	Andropogon gerardii	Big Bluestem	24"	#5 cont.	87	See Plan	Full - Well Rooted

NOTE: THESE ARE QUANTITIES PROVIDED FOR THE CONTRACTORS CONVENIENCE. THE CONTRACTOR SHALL INDEPENDENTLY CONFIRM ALL QUANTITIES FROM THE LANDSCAPE PLAN.

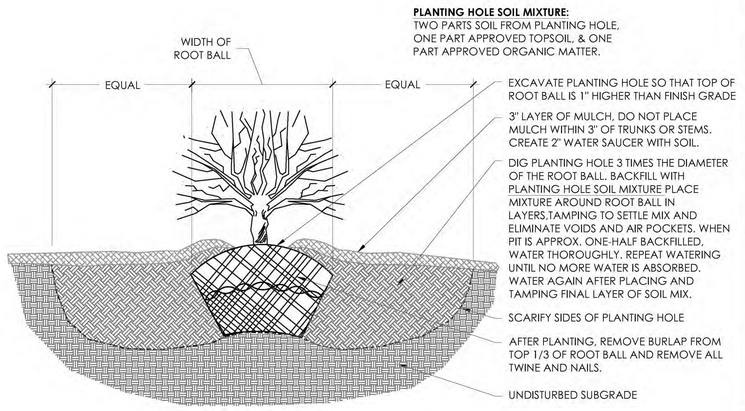


1 PLANTING DETAIL : BALLED AND BURLAPPED TREE
Scale: N.T.S.

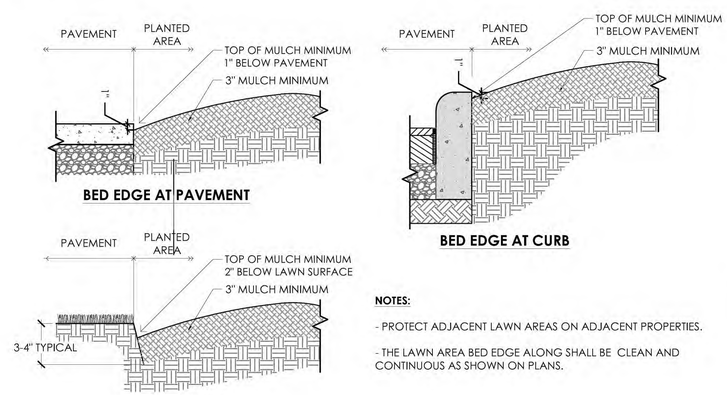


NOTES:
1) PROTECTIVE FENCE TO REMAIN UNTIL CONSTRUCTION IS COMPLETE.
2) NO TREE SHALL BE REMOVED UNLESS SPECIFICALLY TAGGED FOR REMOVAL BY LANDSCAPE ARCHITECT.
3) CONTRACTOR SHALL TAKE CARE TO NOT TO DAMAGE TREES THAT ARE TO REMAIN.
4) ANY EXCAVATING WITHIN DRIPLINE MUST BE APPROVED BY LANDSCAPE ARCHITECT AND MUST BE HAND DUG.
5) CONTRACTOR SHALL NOT CUT ANY ROOTS AND/OR BRANCHES UNLESS APPROVED BY LANDSCAPE ARCHITECT.
6) STOCKPILED MATERIALS OR UNNECESSARY VEHICULAR TRAFFIC SHALL NOT BE ALLOWED OVER ANY TREE ROOT SYSTEM.
7) ALL EXPOSED ROOT STUBS AND ROOT ARE TO BE BACK FILLED WITH APPROVED TOPSOIL.
8) INSPECT FENCE ON WEEKLY BASIS AND REPAIR DAMAGE IMMEDIATELY.

4 PLANTING DETAIL : TREE PROTECTION FENCE
Scale: N.T.S.



2 PLANTING DETAIL : BALLED AND BURLAPPED SHRUB
Scale: N.T.S.

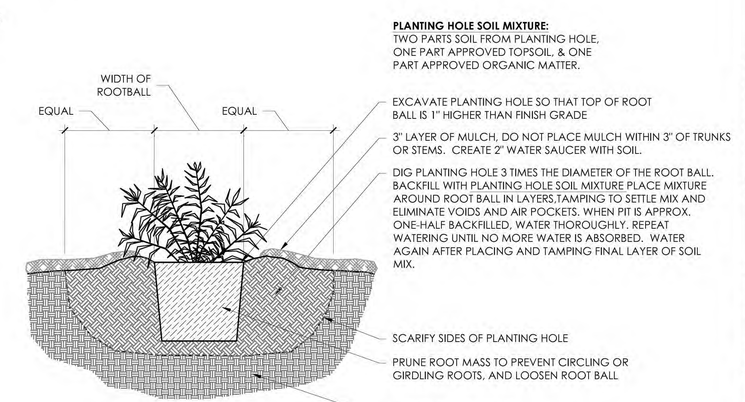


NOTES:

- PROTECT ADJACENT LAWN AREAS ON ADJACENT PROPERTIES.

- THE LAWN AREA BED EDGE ALONG SHALL BE CLEAN AND CONTINUOUS AS SHOWN ON PLANS.

5 PLANTING DETAIL : BED EDGE
Scale: N.T.S.



3 PLANTING DETAIL : CONTAINERIZED PLANTS
Scale: N.T.S.

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NEW MARKET SOLAR - II -
HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

DRAWING SET:

SHEET TITLE:
PLANTING DETAILS SHEET

DRAWN BY:	CHECKED BY:
AS	GM

PROJ. NO.:	DATE:
41503	03-03-21

SHEET NUMBER: L-5

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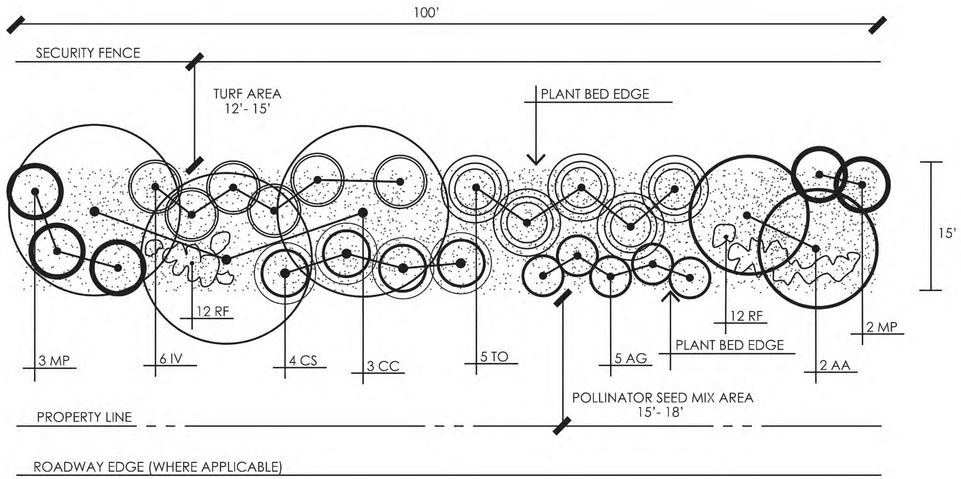
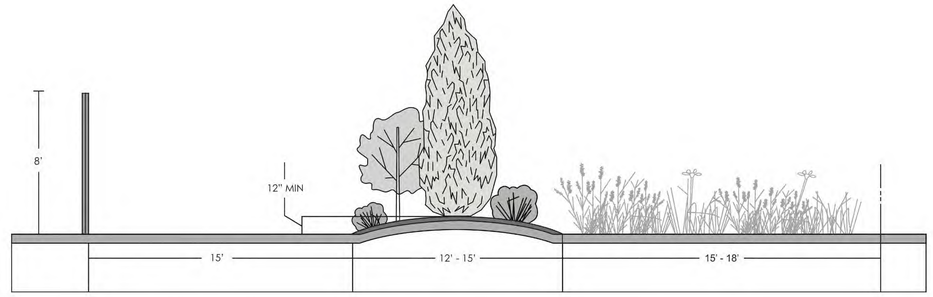


TYPICAL PLANT BUFFER A

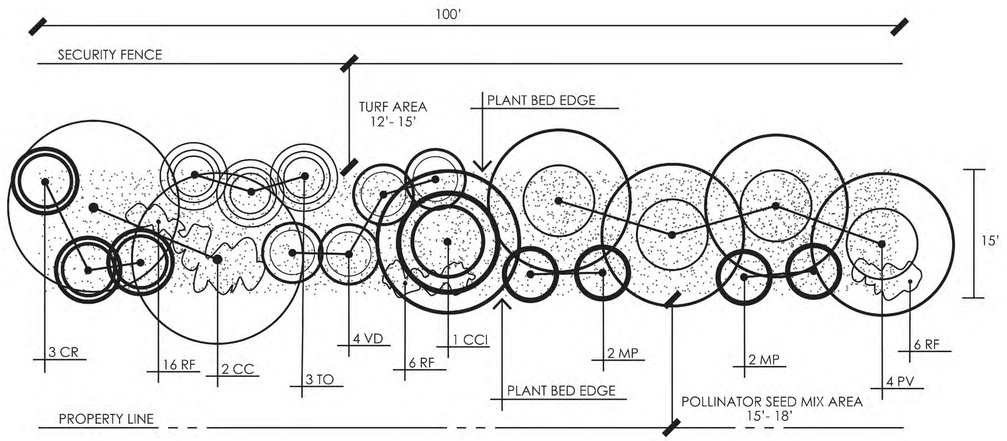
1/4 in = 1ft
0ft 4ft 10ft



TYPICAL BUFFER LANDSCAPE

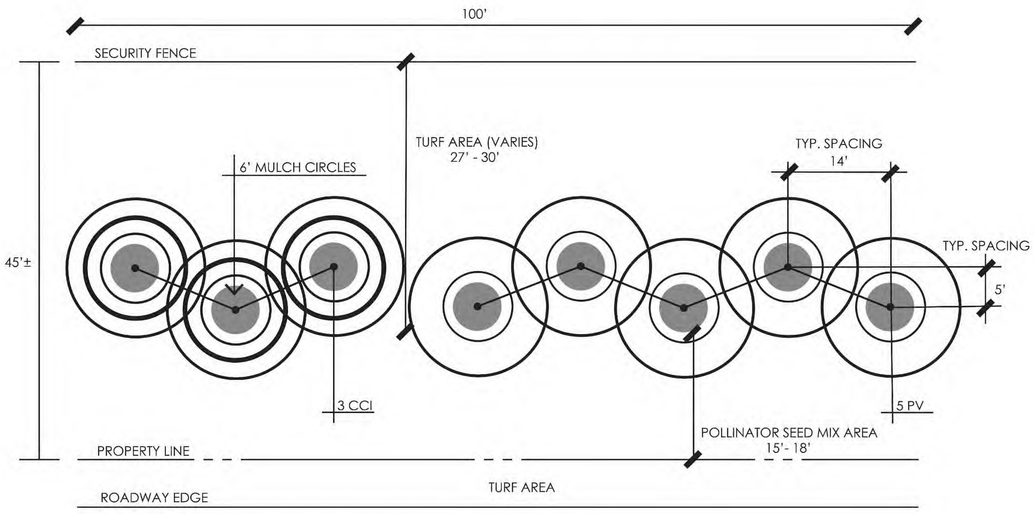
CROSS SECTION

1/2 in = 1ft
0ft 2ft 5ft



TYPICAL PLANT BUFFER B

1/4 in = 1ft
0ft 4ft 10ft



TYPICAL PLANT BUFFER C

1/4 in = 1ft
0ft 4ft 10ft

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NEW MARKET SOLAR - II -

HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

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SHEET TITLE:
TYPICAL BUFFER PLANS

DRAWN BY: AS
CHECKED BY: GM
PROJ. NO.: 41503
DATE: 03-03-21

SHEET NUMBER: L-6

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1.0 GENERAL NOTES

1.1 THIS PLAN IS FOR PLANTING ONLY.

1.2 THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS, AND NOTIFY MISS UTILITY OR EQUIVALENT UTILITY COMPANY. IN ADDITION, THE CONTRACTOR IS TO BE NOTIFIED WHICH UTILITIES, INCLUDING STORM AND SANITARY SEWERS, ARE LOCATED IN THE VICINITY OF THE PROPOSED WORK. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND STAKING THE LOCATION OF ALL EXISTING UTILITIES AND PROTECTING THEM DURING THE WORK AND SHALL BEAR ANY COSTS TO REPAIR UTILITIES DAMAGED AS A CONSEQUENCE OF HIS WORK.

1.3 ALL WORK SHALL MEET OR EXCEED THE REQUIREMENTS OF ALL-APPLICABLE FEDERAL, STATE AND LOCAL LAWS, ORDINANCES AND REQUIREMENTS.

1.4 ALL APPLICABLE ODOT SPECIFICATIONS SHALL BE FOLLOWED FOR THIS WORK. THE CURRENT ODOT SPECIFICATIONS ARE AVAILABLE AT - http://www.dot.state.oh.us/Divisions/Engineering/Roadway/DesignStandards/Pages/default.aspx

1.5 PROVIDE QUANTITY, SIZE, GENUS, SPECIES, AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1, "AMERICAN STANDARD FOR NURSERY STOCK," CURRENT EDITION. THE CURRENT STANDARD IS AVAILABLE AT https://www.americanhort.org/page/standards

1.6 PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.

1.7 TREES AND SHRUBS OF A LARGER SIZE MAY BE USED, IF ACCEPTABLE TO LANDSCAPE ARCHITECT, WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.

1.8 SELECT PLANT MATERIALS FOR UNIFORM HEIGHT AND SPREAD

1.9 LABEL AT LEAST ONE TREE AND ONE SHRUB OF EACH VARIETY AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF BOTANICAL AND COMMON NAME.

1.10 LANDSCAPE ARCHITECT MAY OBSERVE TREES AND SHRUBS EITHER AT THE NURSERY OR AT SITE BEFORE PLANTING FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. LANDSCAPE ARCHITECT RETAINS RIGHT TO OBSERVE TREES AND SHRUBS FURTHER FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEMS, PRESENCE OF INSECTS, INJURIES, AND LATENT DEFECTS AND TO REJECT UNSATISFACTORY, OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. REJECTED TREES & SHRUBS SHALL TAGGED AND IMMEDIATELY REMOVED FROM PROJECT SITE.

1.11 HERBICIDE TREATMENT: APPLY HERBICIDE TO PLANT BEDS ACCORDING TO MANUFACTURER'S RECOMMENDED RATES AND WRITTEN APPLICATION INSTRUCTIONS. APPLY TO DRY, PREPARED SUBGRADE OR SURFACE OF COMPACTED-AGGREGATE BASE BEFORE APPLYING PAVING MATERIALS. THE HERBICIDE MUST BE APPLIED BY A LICENSED COMMERCIAL HERBICIDE APPLICATOR ONLY

2.0 PROTECTION OF EXISTING TREES

2.1 IF EXCAVATION IS REQUIRED WITHIN DRIP LINE OF TREE, HAND CLEAR AND EXCAVATE TO MINIMIZE DAMAGE TO ROOT SYSTEMS. USE NARROW-TINE SPADING FORKS AND COMB SOIL TO EXPOSE CLEANLY CUT ROOTS.

2.2 PRESERVE EXISTING TREE ROOTS IN BACKFILL AREAS WHERE POSSIBLE. IF LARGE, MAIN LATERAL ROOTS ARE ENCOUNTERED, EXPOSE ROOTS BEYOND EXCAVATION LIMITS AS REQUIRED TO BEND AND RELOCATE THEM WITHOUT BREAKING. IF ENCOUNTERED IMMEDIATELY ADJACENT TO LOCATION OF NEW CONSTRUCTION AND RELOCATION IS NOT PRACTICAL, CLEANLY CUT ROOTS APPROXIMATELY 3 INCHES BACK FROM NEW CONSTRUCTION.

2.3 DO NOT ALLOW EXPOSED ROOTS TO DRY BEFORE PLACING PERMANENT BACKFILL. PROVIDE TEMPORARY EARTH COVER, OR PACK WITH PEAT MOSS AND WRAP WITH BURLAP AND WATER AND MAINTAIN IN A MOIST CONDITION. TEMPORARILY SUPPORT AND PROTECT ROOTS FROM DAMAGE UNIT THEY ARE PERMANENTLY RELOCATED AND COVERED WITH SOIL.

3.0 PREPARATION AND PLANTING

3.1 PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, AND LAWNS AND EXISTING EXTERIOR PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.

3.2 IT IS THE CONTRACTOR'S RESPONSIBILITY TO:
- KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN, AND MAINTAIN WORK AREA IN AN ORDERLY CONDITION, FOR DURATION OF PROJECT.

3.3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO:
- PROTECT EXTERIOR PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED EXTERIOR PLANTING.

3.4 IT IS THE CONTRACTOR'S RESPONSIBILITY TO:
- REMOVE SURPLUS SOIL AND WASTE MATERIAL , INCLUDING EXCESS SUBSOIL.

3.5 PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.

3.6 LAY OUT INDIVIDUAL TREE AND SHRUB LOCATIONS AND AREAS FOR MULTIPLE EXTERIOR PLANTINGS. STAKE LOCATIONS, OUTLINE AREAS, ADJUST LOCATIONS WHEN REQUESTED, AND OBTAIN LANDSCAPE ARCHITECT'S ACCEPTANCE OF LAYOUT PRIOR TO PLANTING.

3.7 IT IS THE CONTRACTOR'S OPTION TO STAKE ALL TREES.

3.8 CONTRACTOR TO FOLLOW ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL. CAREFULLY REVIEW ITEM 661 FOR PLANTING TREES, SHRUBS & VINES AND ITEM 662 FOR LANDSCAPE WATERING.

3.9 ALL PLANTING BEDS ARE TO BE PREPARED AS FOLLOWS :
- LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 6". REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
- SPREAD COMPOST AT A MINIMUM DEPTH OF 6" AND TILL WITH LOOSENED SUBGRADE , MIXING THOROUGHLY.
- GRADE PLANTING BEDS TO A SMOOTH, UNIFORM SURFACE PLANE WITH UNCOMPACTED AND UNIFORMLY FINE TEXTURE. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.
- EDGE BEDS 3 - 4" DEEP (SEE DETAIL). NOTIFY LANDSCAPE ARCHITECT IF SUBSOIL CONDITIONS SHOW EVIDENCE OF UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PITS.

3.10 COMPOST SHALL BE WELL-ROTTED MANURE AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH ONE INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS.

3.11 TOPSOIL SHALL BE ASTM D 5268, pH RANGE OF 5.5 TO 7, A MINIMUM OF 40 PERCENT ORGANIC MATERIAL CONTENT; FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.

3.12 AMENDED TOPSOIL IS A MIXTURE OF ONE PART SOIL FROM THE PLANTING HOLE AND ONE PART APPROVED ORGANIC MATTER

3.13 ALL PLANTS SHALL BE FERTILIZED WITH 10:10:10 SLOW- RELEASE FERTILIZER PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.14 REFER TO TYPICAL PLANTING DETAILS FOR PLANT INSTALLATION.

3.15 ALL PLANT MATERIALS, PRUNE TO REMOVE DEAD OR INJURED BRANCHES.

3.16 IT IS THE CONTRACTOR'S RESPONSIBILITY TO: INSPECT MATERIALS (SOILS, PLANTS, TOOLS) FOR PESTS AND INVASIVE SPECIES PRIOR TO WORK. FLAG PROBLEM MATERIAL AND KEEP AWAY FROM CLEARED MATERIAL, WITH APPROPRIATE LINING TO AVOID SPREAD.

4.0 SEEDING

4.1 CONTRACTOR TO FOLLOW ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL, ITEM 659 FOR TURF SEEDING

4.2 CONTRACTOR TO FOLLOW ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL, TABLE 659.09-1, ROADSIDE MIXTURE 2 FOR RESEEDING DISTURBED AREAS:
KENTUCKY BLUEGRASS (POA PRATENSIS) - 1.5 lb/1000 sq. ft.
KENTUCKY 31 FESCUE (FESTUCA ARUNDINACEA var. KY 31) - 2 lb/1000 sq. ft.
PERENNIAL RYEGRASS (LOLIUM PERENNE) - 1.5 lb/1000 sq. ft.

4.3 SEED ALL DISTURBED AREAS. THE FINAL GRADE AND TOPSOIL WITHIN +/- .10 FEET WILL BE IN PLACE FOR SEEDING CONTRACTOR.

4.4 APPLY A HIGH PHOSPHORUS FERTILIZER AT THE RATE OF 2-3 LB PER 1000 SF. TILL AREA TO BE SEEDED TO A DEPTH OF 4". RAKE TILLED AREA TO REMOVE DEBRIS 1" OR LARGER IN SIZE THAT HAS BEEN BROUGHT TO THE SURFACE DURING TILLING.

4.5 RAKE SEED LIGHTLY INTO TOP OF TOPSOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

4.6 PROTECT SEEDED AREAS WITH SLOPES EXCEEDING 1:6 WITH TYPE 'I' TEMPORARY EROSION-CONTROL MAT ODOT ITEM 712.11-I.

5.0 MULCH

5.1 MULCH SHALL BE FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.

5.2 CONTRACTOR SHALL USE EVANS DARK SUPREME MULCH (TWICE SHREDDED AND PROCESSED HARDWOOD MULCH, VERY DARK BROWN COLOR) OR APPROVED EQUAL FOR MULCHING.

5.3 ALL LANDSCAPE AREAS WITH TREES & SHRUBS SHALL HAVE A 3" THICK BED OF MULCH AND ALL LANDSCAPE BEDS WITH GRASSES & PERENNIALS SHALL HAVE 1 1/2" THICK BED OF MULCH APPLIED. APPLY PRE-EMERGENT HERBICIDE BEFORE MULCHING PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

6.0 WARRANTY: 1 YEAR PERIOD

6.1 CONTRACTOR SHALL PROVIDE OWNER WITH A ONE YEAR WARRANTY FOR LABOR AND MATERIALS.

6.2 CONTRACTOR SHALL WARRANT EXTERIOR PLANTS AGAINST DEFECTS, INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLECT OR INSTALLATION ABUSE BY OWNER, OR ACT OF GOD.

6.3 SERVICES PROVIDED BY WARRANTY SHALL INCLUDE :
- MAINTAINING UPRIGHT POSITION OF EXTERIOR PLANTINGS DURING WARRANTY PERIOD.
- IMMEDIATE REMOVAL OF DEAD EXTERIOR PLANTS AND IMMEDIATE REPLACEMENT, UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON.
- REPLACEMENT OF PLANTS THAT ARE INSTALLED DEAD OR IN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD.

6.4 WARRANTY SHALL BE LIMITED TO ONE REPLACEMENT OF EACH EXTERIOR PLANT, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE OF CONTRACTOR TO COMPLY WITH REQUIREMENTS DURING LANDSCAPE MAINTENANCE PERIOD.

6.5 THE LANDSCAPE CONTRACTOR SHALL PROVIDE FULL MAINTENANCE OF NEW PLANTS, TURF AREAS, BEDS AND EXISTING PLANTS WITHIN NEW PLANT BEDS BEGINNING WITH INITIATION OF WORK ON-SITE FOLLOWING ISSUANCE OF A NOTICE TO PROCEED, AND CONTINUING FOR THE FULL MAINTENANCE PERIOD - A MINIMUM OF 60 DAYS FOLLOWING PRELIMINARY ACCEPTANCE OF THE WORK.

6.6 A PRELIMINARY ACCEPTANCE INSPECTION WILL BE PERFORMED AT THE CONCLUSION OF INSTALLATION WORK BY THE LANDSCAPE ARCHITECT. THIS MAINTENANCE WORK SHALL INCLUDE PERIODIC WATERING, WEEDING, HERBICIDE APPLICATION, PRUNING, AND INSECT/DISEASE CONTROL. SHOULD PLANTS DIE DURING THIS PERIOD THEY SHALL BE REPLACED DURING THE DORMANT SEASON OF EITHER LATE FALL OR EARLY SPRING WITH IDENTICAL SPECIFIED PLANT MATERIAL AT NO ADDITIONAL COST TO THE OWNER .

7.0 LANDSCAPE MAINTENANCE: 1 YEAR PERIOD 2 YEAR PERIOD (OPTIONAL)

7.1 THE LANDSCAPE CONTRACTOR SHALL PROVIDE FULL MAINTENANCE OF NEW PLANTS, TURF AREAS, BEDS AND EXISTING PLANTS WITHIN NEW PLANT BEDS BEGINNING WITH INITIATION OF WORK ON-SITE FOLLOWING ISSUANCE OF A NOTICE TO PROCEED, AND CONTINUING UNTIL 1 CALENDAR YEAR FOLLOWING PRELIMINARY ACCEPTANCE OF THE WORK.

7.2 A PRELIMINARY ACCEPTANCE INSPECTION WILL BE PERFORMED AT THE CONCLUSION OF INSTALLATION WORK BY THE LANDSCAPE ARCHITECT. THIS MAINTENANCE WORK SHALL INCLUDE WATERING, WEEDING, HERBICIDE APPLICATION, PRUNING, AND INSECT/DISEASE CONTROL. SHOULD PLANTS DIE DURING THIS PERIOD THEY SHALL BE REPLACED DURING THE DORMANT SEASON OF EITHER LATE FALL OR EARLY SPRING WITH IDENTICAL SPECIFIED PLANT MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

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NEW MARKET SOLAR - II -
HIGHLAND COUNTY, OHIO

CLIENT:

ISSUE/REVISIONS:

DRAWING SET:

SHEET TITLE:
LANDSCAPE NOTES SHEET

DRAWN BY: AS
CHECKED BY: GM
PROJ. NO.: 41503
DATE: 03-03-21
SHEET NUMBER: L-7

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DASHIELL CORP.

A QUANTA SERVICES COMPANY

Outdoor Illumination Study

New Market Solar
345-34.5kV Substation
Dashiell Project No. 703777A

Rev. B – Revised Design Input – 03/11/21
Rev. A – Issued for Review – 02/22/21

DASHIELL ENGINEERS CONSTRUCTORS www.dashiellcorp.com

New Market Solar
345-34.5kV Substation
Outdoor Illumination Study

DRAWN J. Herget CHK'D J. Herget APP'D. A. Taylor DATE 02/22/21	DWG. NO. 703777A-DE4-06030 SH. 1 OF 5	REV. B

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New Market Solar
345-34.5kV Substation
Outdoor Illumination Study

DRAWN J. Herget CHK'D J. Herget APP'D. A. Taylor DATE 02/22/2	DWG. NO. 703777A-DE4-06030 SH. 2 OF 5	REV. B

1. Scope

The purpose of this calculation is to determine the required yard lighting at New Market Solar 345/34.5kV collector substation.

2. Design Methodology

Section 111 of the National Electric Safety Code outlines the required illumination of a substation in "Table 111-1-Illumination levels" as seen in Figure 1. While NESC states outdoor illumination is not required at unattended stations, we will use it as a reference for the purpose of this study.

Table 111-1—Illumination levels

Location	lux	footcandles
Generating station (interior)		
Highly critical areas occupied most of the time [1]	270	25
Areas occupied most of the time [2]	160	15
Critical areas occupied infrequently [3]	110	10
Areas occupied infrequently [4]	55	5
Generating station (exterior)		
Building pedestrian main entrance	110	10
Critical areas [5]	55	5
Areas occupied occasionally by pedestrians [6]	22	2
Areas occupied occasionally by vehicles [7]	11	1
Areas occupied infrequently [8]	5.5	0.5
Remote areas [9]	2.2	0.2
Substation		
Control building interior	55	5
General exterior horizontal and equipment vertical	22	2
Remote areas [9]	2.2	0.2

Figure 1: NESC Table 111-1

3. Design Input

3.1. Lighting Software – Visual 2017.

3.2. Lights

3.2.1. Floodlights – Plusrite naturaLED Slim Area Light, 360Watt LED.

3.2.2. Wall Packs – Lumark Axcent AXCL, 102W LED

3.3. Mounting height

3.3.1. 35'-0" on static masts

3.3.2. 8'-0" on building exterior walls.

3.4. Lighting Controls

3.4.1. Floodlights are controlled via a lighting contactor installed in the substation control enclosure. The contactor is able to be switched into three (3) positions: Off, Manual, and Auto. In the Off position the lighting circuit for the substation Floodlights is disabled. In the Manual position, a light switch mounted inside the control enclosure and adjacent to the exterior doors, can be used to enable or disable the Floodlights as needed. When the lighting contactor is switched to the Auto position, the operation of the Floodlights will be controlled by a photosensor installed on the roof of the substation control enclosure.

3.4.2. Wall Packs are mounted on the exterior wall of the control enclosure, adjacent to each door, in order to illuminate each point of entry/exit. The Wall Packs are controlled via a small button photosensor installed on the housing of the light fixture. There is a light switch mounted inside the control enclosure next to each door that provides the ability to override the photosensor to enable or disable the Wall Pack light associated with that point of entry as needed.

4. Analysis

Horizontal illumination in foot-candles at ground level is shown in lighting plan embedded below.

703777A-DE0-17033
.pdf

5. Reference

5.1. The technical data sheets for each light fixture are embedded below for reference:

LED-FXSAL36050KDB3S.pdf

LA-AXCL10A-PC1.pdf

6. Conclusion

Horizontal Illuminance (foot-candle)

Average	3.5
Maximum	9.7
Minimum	0
Maximum/Minimum	NA
Average/Minimum	NA

March 19, 2021

Hecate Energy Highland 4 LLC
and Hecate Energy Highland 2, LLC
621 Randolph Street, Suite 200
Chicago, Illinois 60661

Attn: Patti Shorr, VP Project Development

Re: Noise Modeling Updates
New Market Solar II
Clay and Whiteoak Townships
Highland County, Ohio
Terracon Project No. 49187638A

Dear Ms. Shorr:

Skelly and Loy, A Terracon Company (Terracon) is pleased to summarize the results of the noise modeling in accordance with the Ohio Power Siting Board (OPSB) data request for refined noise modeling. After reviewing the operation activities associated with the proposed solar farm, Terracon expects that the offsite sound influence from the operation of the proposed solar farm will be minimal, and not exceed the established OPSB thresholds of 5 decibels (dBA) above L90 ambient background levels at any off-site sensitive receptors.

A. PROJECT INFORMATION

The New Market Solar II project is in Highland County, Ohio, approximately 25 miles east of Cincinnati. The solar farm is a 35 megawatt alternating current ("MWAC") facility located on approximately 292 acres. The solar farm will be built on several contiguous areas south of Edwards Road in Clay Township, Highland County, OH.

The project will generate electricity using PV panels. Photons in sunlight will strike the semiconducting material in the solar panels, which will excite electrons and generate direct electric current ("DC"). DC will be converted to alternating electric current ("AC") and the voltage will be increased. The electricity will be gathered through a network of cables at a Project Substation. The Clay Substation then will increase the voltage again and deliver the power to the 345 kV Stuart-Clinton transmission system.

B. SOLAR FARM OPERATIONAL NOISE

The operation of a solar farm primarily generates noise from two main sources; invertors and transformers. The project will have inverter stations with medium voltage (MV) transformers, as well as a collector substation containing 2 transformers for the project.

The project is anticipated to contain 13 inverter stations consisting of 2 SUNGROW SG250HX inverters, in addition to a collector substation. The solar farm will use a motorized tracking system in order to keep the panels facing the sun and optimize output during different times of the day and year. The motors used to move the panels are small, inaudible at close range and are not considered a significant noise source. The MV transformers are also an insignificant source as the inverter sound levels dominate the inverter station. Sound emission data for the inverters (provided by SUNGROW), and collector substation containing 2 transformers (One (1) 79/96/120MVA 125-34.5kV transformer/One (1) 68/86/112MVA 345-125Kv transformer) were converted to the sound power for input into the software package (see Attachments).

The future acoustical environment for the proposed sources was simulated using the SoundPLAN v.4.1 software. SoundPLAN implements ISO-9613-2 1996 (Attenuation of sound during propagation outdoors – Part 2: General method of calculation), which is a international standard method for calculating sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. A three-dimensional topographical model was created to assess the sound propagation of the proposed facility. A digital terrain model was created using existing ground elevations and contours obtained from topographic mapping derived from USGS mapping at 1-meter intervals. Ground zones were established for soft and hard terrain, as well as tree zones.

SoundPLAN is capable of either predicting A-weighted sound levels at discrete receptors (single locations) or calculating sound contours given the three-dimensional terrain. Sound level projections were calculated for all sensitive receptor locations (168 receptors) within 1-mile radius of the project. In addition, sound contour modeling was used for the proposed site to graphically display the future acoustical environment and illustrate the influence of the facility on adjoining properties.

The assumed ambient background noise level based on monitoring performed for previous submittals is 43.8 dBA. OPSB has dictated an impact threshold of 5 dBA increase over ambient sound levels at the sensitive receptors, therefore a 49 dBA threshold was used as (44 dBA ambient + 5 dBA = 49 dBA).

C. SOUND MODELING RESULTS

The sensitive sound modeling locations, source locations and calculation area are located on Figure 1. The sound level projections for each of the sensitive receptors outlined on Figure 1 are found in Table 1. The visual results of the SoundPLAN sound dispersion model are depicted on Figure 2. Sound level contributions associated with the project at the sensitive receptor locations ranged from 0 to 42.3 dBA, significantly below the established 49 dBA threshold.

The inverter and substation array sound dispersion are contained within the property lines of the project. Excess of ambient sound levels are not anticipated beyond the project boundary. Based on the results of the SoundPLAN analysis, the solar project is not anticipated to have a significant impact on surrounding community noise levels or

sensitive receptors, and will not exceed the established OPSB thresholds of 5 decibels (dBA) above L90 ambient background levels at any off-site sensitive receptors.

Sincerely,
Terracon Consultants, Inc.

Bill Kaufell
Skelly and Loy, Inc., A Terracon Company
Director of Environmental Acoustics

Emily Kosmalski
Terracon Consultants, Inc.
Environmental Planner

Enclosures: Figure 1: Sensitive Noise Receptor Locations
Figure 2: Sound Contour Modeling
Table 1 : Sensitive Receptor Results
Attachment 1: Substation and Inverter Sound Data

References

OPSB Case No. 20-1288-EL-BGN

Exhibit E : Preconstruction Noise Study and Noise Modeling of Operations, New Market Solar II, Terracon, August 28, 2020

Updated Noise Modeling of Operations Based on Revised Equipment Data, New Market Solar I and New Market Solar II, Terracon, November 9, 2020

ENCLOSURES

Figure 1

Figure 2

Table 1

FIGURE 1

New Market Solar II

Highland County, OH

Sensitive Noise Receptor Locations

Signs and symbols

- Project Property Lines
- Sensitive Receptors
- Point Sources

1 : 25885

0 125250 500 750 1000 m

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FIGURE 2

New Market Solar II

Highland County, OH

Sound Contour Modeling

Signs and symbols

Project Property Lines

Levels in dB(A)

<= 40
40 - 42
42 - 44
44 - 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
58 - 60
60 - 62
62 - 64
> 64

1 : 15000

0 100 200 400 600 800 m

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Table 1 Sensitive Receptor Results					
Receptor ID	Coordinates			Sound Level	Impact Threshold[1]
	X	Y	Elevation		
	Ohio State Plane South (Meters)			dB(A)	dB(A)
1	488583.5	121407.4	304.5	18.5	49
2	489761.4	119342.2	303.5	23.7	49
3	488594.3	121565.8	305.1	18.1	49
4	489511.9	119145.7	302.5	21.6	49
5	492013.5	120660.7	305.3	29.9	49
6	490742.8	118815.3	305.3	23	49
7	491483.1	120725.3	308.5	36.3	49
8	491659.9	118428.3	309.5	19.9	49
9	491336.2	120735.2	308.8	37.4	49
10	490856.0	120858.5	310.2	39.6	49
11	488630.3	121728.9	305.5	17.7	49
12	488617.7	121813.2	305.5	17.3	49
13	488825.4	121898.7	307.4	17.9	49
14	488611.7	121911.2	305.9	17	49
15	488644.9	121967.6	306.5	16.9	49
16	488824.9	122083.0	307.5	17.2	49
17	488525.0	122383.5	309.3	15	49
18	487823.9	122170.5	306.1	13.4	49
19	487957.0	122292.1	306.5	13.5	49
20	487215.6	122393.2	304.5	10.8	49
21	487076.2	122355.7	303.5	10.3	49
22	488158.7	122519.5	307.5	13.4	49
23	487563.6	122994.8	306.2	10.2	49
24	487757.5	123013.3	306.5	10.7	49
25	488423.3	122528.7	309.0	14.2	49
26	488863.8	122461.5	309.1	15.9	49
27	491518.0	118555.6	305.5	20.9	49
28	487159.5	122857.9	303.5	9.1	49
29	491186.7	118654.1	306.5	21.9	49
30	487158.8	122967.2	303.5	8.8	49
31	489614.4	118878.4	302.0	20.6	49
32	486794.1	122986.1	302.3	6.6	49
33	489319.2	119042.5	302.1	20.5	49
34	486958.9	123126.7	302.5	7	49
35	487192.2	123072.5	301.5	8.6	49
36	486862.8	123855.6	303.5	1.7	49
37	489115.6	121500.9	307.5	20.7	49
38	489266.5	121457.1	308.2	21.7	49
39	489289.0	121375.4	307.7	22.1	49
40	489386.5	121356.0	308.5	22.8	49
41	492468.0	121140.6	307.5	23.4	49
42	489593.8	121328.2	308.3	24.3	49

Table 1 Sensitive Receptor Results					
Receptor ID	Coordinates			Sound Level	Impact Threshold[1]
	X	Y	Elevation		
	Ohio State Plane South (Meters)			dB(A)	dB(A)
43	492283.0	120522.6	307.5	27.5	49
44	489662.7	121317.6	308.5	24.9	49
45	493542.6	120597.8	309.5	17.6	49
46	489952.4	121146.8	309.5	28.4	49
47	489902.8	121249.8	309.5	27.2	49
48	493453.0	120516.8	308.5	18.2	49
49	493473.0	120434.2	308.4	18.1	49
50	488934.6	122875.8	312.6	14.5	49
51	489253.1	122991.1	313.5	14.9	49
52	493255.5	120553.2	304.5	19.3	49
53	488689.0	123497.0	311.5	11.6	49
54	493311.0	120472.3	305.5	19	49
55	493292.0	120423.1	306.1	19.2	49
56	488150.4	123341.4	308.5	10.8	49
57	493233.3	120396.1	307.3	19.6	49
58	487102.6	123087.4	300.8	7.8	49
59	493152.3	119997.6	305.1	20	49
60	487144.9	123119.2	303.0	8.1	49
61	486876.1	123189.0	303.5	6.3	49
62	493069.7	120318.3	305.7	20.7	49
63	492979.3	120448.5	303.0	21.3	49
64	486726.9	123172.1	301.5	5.9	49
65	486880.3	123094.8	299.8	6.5	49
66	493001.5	120400.8	305.5	21.2	49
67	486999.9	123192.2	303.5	7	49
68	493247.5	120311.9	308.5	19.5	49
69	493193.6	120299.2	308.5	19.9	49
70	487067.7	123317.1	304.5	6.8	49
71	487627.0	123069.4	306.5	10.2	49
72	492375.2	119988.3	305.4	26.2	49
73	487015.3	123126.6	302.7	7.2	49
74	492217.5	119844.9	306.5	27.3	49
75	490063.2	119573.8	304.6	26.9	49
76	492250.6	119376.9	299.5	24	49
77	490203.9	119462.6	305.3	26.8	49
78	492496.7	119967.4	303.8	24.9	49
79	492211.8	118676.8	305.9	20	49
80	490222.8	120273.6	307.5	36.9	49
81	488920.5	123284.4	312.5	12.9	49
82	492326.8	118441.9	305.3	18.4	49
83	488505.0	121036.4	304.3	19.6	49
84	491835.2	120627.4	306.5	32.5	49

Table 1 Sensitive Receptor Results					
Receptor ID	Coordinates			Sound Level	Impact Threshold[1]
	X	Y	Elevation		
	Ohio State Plane South (Meters)			dB(A)	dB(A)
85	491758.4	120652.6	307.4	33.3	49
86	491684.6	120676.4	308.5	34.1	49
87	493320.6	121348.6	304.0	17.6	49
88	491428.8	120724.7	308.5	36.9	49
89	492225.2	119600.7	304.5	25.7	49
90	490699.1	120912.4	310.5	38.8	49
91	489068.4	121632.5	306.9	19.9	49
92	492178.6	121585.5	308.5	22.9	49
93	492238.1	121567.4	307.3	22.7	49
94	492395.5	121180.6	307.4	23.7	49
95	492072.4	120852.5	307.5	28.1	49
96	491732.7	121120.8	307.4	28.8	49
97	492177.2	121379.6	308.8	24.1	49
98	487505.1	124643.0	306.5	0	49
99	488235.1	124652.7	309.5	4.6	49
100	488076.4	124699.0	310.5	3.6	49
101	487982.8	124628.3	308.6	3.6	49
102	488357.2	125012.8	311.0	2.1	49
103	488584.4	124904.5	310.5	3.6	49
104	488648.6	124664.4	310.5	6.6	49
105	488967.4	124354.2	314.5	9.2	49
106	489025.6	124211.3	314.8	9.7	49
107	489085.8	124253.7	314.9	9.7	49
108	489103.0	124182.1	315.5	9.9	49
109	489179.4	124260.3	315.5	9.8	49
110	489144.0	124278.8	315.2	9.7	49
111	488798.7	123967.2	314.9	10.2	49
112	489169.3	124167.7	315.5	10.1	49
113	489457.8	123801.6	315.5	12	49
114	489737.6	124857.9	318.5	8.1	49
115	489603.3	124673.2	317.5	8.8	49
116	489347.1	124390.1	315.5	9.6	49
117	489320.6	124385.9	315.5	9.6	49
118	489314.3	124313.9	315.5	9.8	49
119	489404.2	124454.7	315.6	9.4	49
120	490674.6	123878.3	318.5	12.8	49
121	489769.8	125131.8	318.5	6.6	49
122	490271.4	125335.0	322.5	4.9	49
123	489885.1	125011.2	318.4	7.1	49
124	491427.1	125075.7	321.5	8	49
125	491563.6	124555.0	320.5	9.8	49

Table 1 Sensitive Receptor Results					
Receptor ID	Coordinates			Sound Level	Impact Threshold[1]
	X	Y	Elevation		
	Ohio State Plane South (Meters)			dB(A)	dB(A)
126	491450.0	123944.8	316.5	12.3	49
127	491118.1	124434.2	319.7	10.5	49
128	491716.8	124063.9	317.5	11.6	49
129	492042.5	123871.6	319.5	12.1	49
130	492118.8	123686.6	319.5	12.7	49
131	492164.3	123417.7	317.6	13.8	49
132	492137.9	123228.3	316.4	14.7	49
133	492104.0	122884.3	314.5	16.3	49
134	492006.4	122547.3	310.5	18.2	49
135	490721.8	123576.3	317.5	14.2	49
136	492465.6	121141.5	307.5	23.4	49
137	490236.8	123259.8	316.5	15.4	49
138	488276.7	120513.7	303.3	22.8	49
139	488153.4	120372.0	303.5	25	49
140	488047.5	120233.7	302.5	27.8	49
141	488157.7	120264.3	302.5	26.7	49
142	488166.5	120210.1	301.9	27.6	49
143	487995.8	120034.1	302.6	33.8	49
144	488056.8	119836.1	301.5	42.3	49
145	488013.4	120141.1	303.0	30.2	49
146	487807.4	119596.2	301.1	33.7	49
147	487959.2	119571.8	300.6	35.1	49
148	487152.3	119764.9	300.5	21.5	49
149	487340.0	119418.2	300.1	22.8	49
150	487764.8	119347.9	301.5	27.1	49
151	487681.4	119314.0	301.5	25.7	49
152	487603.1	119238.9	301.5	23.9	49
153	487655.0	119255.0	301.5	24.6	49
154	487443.6	119165.4	300.5	21.6	49
155	487352.2	119212.0	299.3	21.2	49
156	487361.2	119102.7	299.5	20.3	49
157	487275.2	119029.3	299.5	19	49
158	487201.7	118984.5	299.5	18.2	49
159	486683.9	119181.6	298.8	15.2	49
160	486452.4	119241.0	298.5	13.5	49
161	487145.1	118803.0	299.5	16.5	49
162	487402.4	118625.1	299.3	16.6	49
163	487503.7	118715.4	299.5	17.7	49
164	487687.1	118786.6	300.1	19.1	49
165	488032.2	118429.6	299.5	16.7	49
166	488155.2	118323.1	299.7	16.1	49

Table 1 Sensitive Receptor Results					
Receptor ID	Coordinates			Sound Level	Impact Threshold[1]
	X	Y	Elevation		
	Ohio State Plane South (Meters)			dB(A)	dB(A)
167	488261.8	118495.2	301.0	17.3	49
168	489122.6	118962.6	302.5	19.8	49
Notes: [1] Impact threshold is 5 dBA above ambient sound level (43.8 dBA)					

ATTACHMENT 1

New Market - 65MW/35MW Substation
One (1) 79/96/120MVA 125-34.5kV transformer
One (1) 68/86/112MVA 345-125kV transformer

	New Market 1 - 65MW	New Market 2 - 35MW
Sub Transformers	79/96/120MVA, 125-35kV	68/86/112MVA
Sub Transformers (SPL in dB)	79/81/82 db	81/82/84 db
Sub Transformers distance (m)	1	1
SPL to PWL Adjustment (dB)	7	7
Sound Power Level (PWL in dB)	89	91

TMEIC

TMEIC Corporation
Office: 1325 Electric Rd, Roanoke, VA 24018 USA
Mailing Address: 2060 Cook Drive, Salem, VA 24153

3.1. C. MV 3-Phase Transformer for 5 x 840kW/840kVA Inverter Lineup

Item	Specifications
kVA	3360kVA/4200kVA
High Voltage	34500 Grounded Wye Volts, 150 kV BIL
kV Class	35 kV
High Voltage Configuration	Dead front, loop feed
High Voltage Bushings	600 amp Cooper dead break one-piece bushings (Qty: 6)
Neutral Bushings	Live front, 2-hole spade bushing
Low Voltage	630 Ungrounded Wye Volts, 30 kV BIL
kV Class (LV)	1.2 kV
Low Voltage Bushings	10-hole spade bushings (Qty: 6)
Bushing Supports	Standard LV bushing support assembly
Insulating fluid	FR3 or Equivalent
Cooling Class	KNAF
Temperature Rise	65 degree rise at 30C ambient, 40C maximum ambient temperature
Frequency	60 Hz
Duty Cycle	Designed for step-up operation
Special Application	Two-Winding
Elevation	Designed for operation at 1000 m (3300 ft.) above sea level
Sound Level	NEMA TR1 Standard
Electrostatic Shield	Electrostatic shield between primary & secondary windings. No shield bushing is included.
Load-break Switching	15-38 kV, ON/OFF Transformer Switch with viewing window (300 Amps)
Overcurrent Protection	Expulsion fuses & partial range current limiting fuses (coordinated per mfg. recommendation)
Taps	2 - 2.5% taps above and 2 - 2.5% taps below nominal
Cabinet hardware	Penta-head cabinet door bolts
Coatings	ANSI 70 Gray with touch-up paint (Qty: 1)
Gauges & Fittings	Liquid level gauge with Alarm Contact, Thermometer, dial-type with Alarm Contact, Pressure/vacuum gauge with Alarm Contact, Schrader valve, Pressure relief device, Drain valve with sampler (1") located in LV cabinet, oil fill plug
Tank accessories	IEEE standard two-hole ground pads (Qty: 3-4), Nitrogen Blanket
Certifications	UL Listed (UL logo on nameplate)
Notifications	Shock and Arc Flash Warning Decal
MVT Switch Viewing Window	Yes
IR Window	On HV cabinet door, centered over bushings

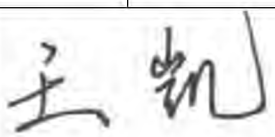
FRONT of Sungrow250Hx		
Frequency(Hz)	**Sound Pressure Level (1m) in dB**	**Sound Power Level in dB**
16	72.8	89.2
31.5	71.5	87.9
63	68.3	84.7
125	67.6	84
250	73.5	89.9
500	72.1	88.5
1k	70.8	87.2
2k	65.8	82.2
4k	60.6	77
8k	53.9	70.3
16k	57.4	73.8

Sungrow250Hx	
Dimensions (L x H x W) (m)	1.05 x .66 x .36
Measurement Distance (m)	1
Area at measurement distance from unit (m^2)	43.2
SPL to PWL Adjustment	16.4

Sungrow Power Supply Co., Ltd.
Add: No. 1699 Xiyou Road, Hefei, China
Tel: +86 551 6532 7834
Email: info@sungrow.cn
Website: www.sungrowpower.com

Noise Test Report

TYPE TEST SHEET

This Type Test sheet shall be used to record the results of the type testing of Generating Unit				
Type Tested reference number			SG250HX	
Generating Unit technology			Grid-connected PV Inverter	
System supplier name			Sungrow Power Supply Co., Ltd.	
Address			No.1699 Xiyou Rd., New & High Technology Industrial Development Zone, Hefei, P.R. China	
Tel	+86 551 65327834		Fax	+86 551 6532 7800
E:mail	info@sungrow.cn		Web site	www.sungrowpower.com
Maximum export capacity, use separate sheet if more than one connection option.	N/A		kW single phase, single, split or three phase system	
	225		kW three phase	
	N/A		kW two phases in three phase system	
	N/A		kW two phases split phase system	
Compiled by			On behalf of	Sungrow Power Supply Co., Ltd.
			Test Date	2020-06-08
Note that testing can be done by the manufacturer of an individual component, by an external test house, or by the supplier of the complete system, or any combination of them as appropriate. Where parts of the testing are carried out by persons or organisations other than the supplier then the supplier shall keep copies of all test records and results supplied to them to verify that the testing has been carried out by people with sufficient technical competency to carry out the tests.				

Sungrow Power Supply Co., Ltd.
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Website: www.sungrowpower.com

The aim of this test is to determine the noise level when the PV Grid inverter in rated working condition

Used settings of the measurement device for Noise measurement

Measurement device	Date of measurement
AWA6228	2020-03-05

The condition s during testing are specified below:

PGU operation mode	Rated Working Condition
Voltage range	860-1300V
Grid frequency range	50Hz/ 45-55Hz
Distance	1m
Date	2020-06-08

The system noise level please check the table below.

Orientation	Noise (dB)
Front	74.4
Behind	73.9
Sidepiece	72.6
Average Noise	73.6

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Add: No. 1699 Xiyou Road, Hefei, China
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Website: www.sungrowpower.com

Front Test :

Test Record			
Frequency(Hz)	Noise(dB)	Frequency(Hz)	Noise(dB)
16	72.8	1k	70.8
31.5	71.5	2k	65.8
63	68.3	4k	60.6
125	67.6	8k	53.9
250	73.5	16k	57.4
500	72.1	**W_A**	**74.4**

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Behind:

Test Record			
Frequency(Hz)	Noise(dB)	Frequency(Hz)	Noise(dB)
16	67.4	1k	68.6
31.5	72.3	2k	64.7
63	69.0	4k	58.6
125	68.7	8k	50.2
250	75.1	16k	41.4
500	72.5	**W_A**	**73.9**

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Website: www.sungrowpower.com

Sidepiece:

Test Record			
Frequency(Hz)	Noise(dB)	Frequency(Hz)	Noise(dB)
16	65.3	1k	67.9
31.5	71.7	2k	64.4
63	67.7	4k	57.8
125	66.3	8k	50.0
250	73.6	16k	39.1
500	69.7	**W_A**	**72.6**

Sungrow Power Supply Co., Ltd.
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Website: www.sungrowpower.com

Additional comments
Type test only for reference.

MOTT MACDONALD

Project:	*New Market Solar II*	Engineer:	*J.Berkow*
Client:	*Recate Energy*	Issue Date:	*5/4/20*
Location:	*Highland County, OH*	Revis on:	*1*

OPINION OF PROBABLE COST - PV PLANT DECOMISSIONING - SAT - 100 Mwac

This opinion of probable costs is based on the engineer's experience in the design and construction of energy facilities and are subject to final engineering. This opinion is also based on our experience supervising the construction of PV plants and supervising the demolition of other non-PV facilities. The engineer accepts no liability for errors, omissions, or the accuracy and adequacy of this opinion. It is a violation of state law for any person, unless they are acting under direction of a licensed professional engineer to alter this document in any way. The engineer is unaware of a significant body of decommissioning PV plants with which to benchmark its opinion of cost. With the exception of the PV modules and inter-module wiring, none of the activities undertaken to disassemble a PV plant are unique to PV plants. Disassembly costs can be estimated similar to other types of facilities. While 3rd party software such as RS Means do contain data on PV plant disassembly, we have found that the data is not applicable to large ground-mounted systems.

This opinion assumes a third-party contractor, experienced in the construction and decommissioning of PV facilities will lead the effort. The reported costs include labor, materials, taxes, insurance, transport costs, equipment rental, contractor's overhead, and contractor's profit. Labor costs have been estimated using regional labor rates and labor efficiencies from the Bureau of Labor Statistics. This opinion assumes open-shop labor rates.

This opinion of cost has been split between plant disassembly, site restoration, and salvage which reflects the overall decommissioning process. The PV plant will first be disassembled, with all above and below grade components removed to a depth of 3 feet. This includes all buried cables, conduits, and foundations. Costs for disassembly are overall less than those for original assembly of the facility. While PV modules will need to be removed by hand to retain their salvage value, the racks, buried cables, and concrete can be removed by machine to increase efficiency. It is assumed that concrete, gravel, and fiber optic cable do not have salvage value and will be disposed off site. Other materials are assumed to have salvage value and can be sold at market prices.

It is expected that the entire site will be re-seeded with native grasses and vegetation. Planting of trees, shrubs, and other woody vegetation (re-forestation) or other beautification is not included in the costs. It is assumed that mulching and stabilization of seeded areas will only be required where gravel roads or concrete foundations were removed. As all cables will be direct buried, excavation to remove the cables will not be required, and the disturbance to those areas will be minimal. The remainder of site will already be vegetated and disassembly activities will not significantly disturb the vegetation. Seeding in those areas is included as a precautionary measure.

It is assumed that re-grading of the site to remove diversion dikes and retention ponds is not required. The earth-moving required to remove these features would likely trigger a NPDES (or state/local equivalent) permit, which would in turn require those same features to be installed to control stormwater on the site. In addition, it is assumed no new erosion and sediment control measure will be required for disassembly. These would have been put in place during the original construction, and would be required to remain in place and properly maintained for the project life.

Salvage values, if included, have been estimated using publicly available data from http://www.scrapmonster.com. Inverters were priced at the rate for Complete Computers, which is lower than what could be attained if they were disassembled on site. Transformers were priced at 80% of the market rate for Sealed Unit Transformers. PV modules may have residual value as functioning units, but were instead assumed to be priced a Low Grade Boards.

Inflation, if included in this estimate has been projected based on the Producer Price Indices for Final Demand Construction. PPI is a more appropriate measure than CPI as it is targeted to the specific commodity. Detailed assumptions and the total opinion of cost for decommissioning is provided on the next sheets. Inflation has not been assumed for salvage values.

MOTT MACDONALD

Project:	*New Market Solar II*	Engineer:	*J.Berkow*
Client:	*Hecate Energy*	Issue Date:	*3/4/20*
Location:	*Highland County, OH*	Revision:	*1*

PV PLANT ANTICIPATED DISASSEMBLY METHODS	
ITEM	DISASSEMBLY METHOD
PV Modules	Hand Removal. Place modules face down on pallets, tape wire ends, tied down and transport via skid-steer to staging location. Assumed 5% breakage, salvage value for crystalline, no salvage for thin-film. 1200 modules/day, 6-person crews.
Inverters	Removal by crane and transport via flat-bed to staging location. Assume no disassembly. Assumed salvage value.
Transformers	Removal by crane and transport via flat-bed to staging location. Assume no disassembly. Oil removal performed by scrap facility. Assumed salvage value.
Racking Frame	Stabilize w/ machine. Cut legs and lower to ground level. Cut cross beams to appropriate size and transport via dump truck to staging location. Assumed salvage value.
Racking Posts	Remove via post-puller and transport via dump truck to staging location. Assumed salvage value.
Racking Wiring	Disconnect PV connectors, cut cable ties, and remove wires from cable tray. Transport via dump truck to staging area. Assumed salvage value.
Underground Cable	Excavate to cable depth at one end of trench. Use tractor or backhoe pull out all cables in common trench. Cables are direct buried so complete excavation of trenches is not required. Transport via dump truck to staging area. Assumed salvage value.
Fence	Machine roll fence fabric. Remove posts via post-puller and transport via dump truck to staging location. Assumed salvage value
Concrete	Remove with excavator and jack hammer. Backfill and compact as needed. Transport via dump truck to staging area. Assumed offsite disposal.
Gravel	Remove with skid steer with sweeper. Transport via dump truck to staging area. Assumed offsite disposal.
Offsite Disposal	Assumed disposal at $95/ton or $45/CY including tipping fee.
Re-Seeding	Re-seed using an ATV-pulled drill seeder, at 5lbs bulk seed per acre of native grasses. Stabilize and mulch on areas where concrete or gravel was removed only.
Re-Grading	No bulk re-grading is included as this would alter site hydrology.
Erosion & Sediment Control	Install silt fence around project perimeter. Install tracking control at site entrance and replace once during disassembly. Remove at end of disassembly. We anticipate net soil disturbance is < 1 acre.
Energy Storage System	Assumes a containerized solution w/ up to 5MWh per container. Container has assumed salvage value. Batteries and racks have offsite disposal. Other components addressed as above.

MOTT MACDONALD

Project:	*New Market Solar II*	Engineer:	*J.Berkow*
Client:	*Hecate Energy*	Issue Date:	*3/9/20*
Location:	*Highland County, OH*	Revision:	*1*

GENERATION SUBSTATION ANTICIPATED DISASSEMBLY METHODS	
ITEM	DISASSEMBLY METHOD
Steel Structures	Disassembled, lowered by crane, and transported via flat-bed to staging location. Assumed salvage value.
Circuit Breakers	Removed from pads and transported via flat-bed to staging location. Assumed no salvage value, and no difference in recycling vs. disposal cost.
Power & Instrument Transformers	Removal by crane and transport via flat-bed to staging location. Assume no disassembly or oil removal of small units, oil drained from main power transformer prior to transport. Assumed salvage value.
Disconnect Switches	Removal by crane, disassemble, and transport via flat-bed to staging location. Assumed salvage value for metal components. Insulators assumed no value.
Insulators and Arresters	Removal from supports. Assumed no salvage value.
Primary Conductor	Cut cable and bus pipe at ends and transport to staging location. Assumed salvage value
Underground Cable	Excavate to cable depth at one end of trench. Use tractor or backhoe remove all cables and conduits in common trench. Transport via dump truck to staging area. Assumed salvage value.
Pre-Fab Steel Buildings	Rough disassembly on site. Assumed salvage value
Control Panels	Removal of electronic components. Rough disassembly. Assumed salvage value for electronic and metal components.
Fence	Machine roll fence fabric. Remove posts via post-puller and transport via dump truck to staging location. Assumed salvage value.
Concrete	Remove with excavator and jack hammer. Transport via dump truck to staging area. Assumed offsite disposal.
Gravel	Remove with skid steer with sweeper. Transport via dump truck to staging area. Assumed offsite disposal.
Offsite Disposal	Assumed disposal at $95/ton or $45/CY including tipping fee.
Re-Seeding & Re-Grading	Re-seed using an ATV-pulled drill seeder, at 3.2lbs per acre of native grasses. Use rough grading machine to lower substation pad to native elevation.

MOTT MACDONALD

Project:	New Market Solar II	Engineer:	J.Berkow
Client:	Hecate Energy	Issue Date:	3/4/20
Location:	Highland County, OH	Revision:	1

OPINION OF PROBABLE COST - PV PLANT DECOMISSIONING - 35 MW - ANNUAL INFLATION=1.36% - END OF LIFE: YEAR 35

DISASSEMBLY & DISPOSAL

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
1.0	PV Modules (455 W)	95,699	$ 2.03	$ 194,187.77
2.0	PV Inverter(s) (2.56 MVA)	13	$ 1,070	$ 13,910.00
3.0	PV Transformer(s) (2.56 MVA)	13	$ 535	$ 6,955.00
4.0	ESS Inverter(s) (2MVA)	0	-	-
5.0	ESS Container(s)	0	-	-
6.0	ESS Transformer(s) (2MVA)	0	-	-
7.0	Racking Frame (Single Axis)	1,226	$ 145	$ 177,770.00
8.0	Racking Posts	13,490	$ 16	$ 215,840.00
9.0	Tracker Motors	1,226	$ 22	$ 26,972.00
10.0	Racking Wiring	1,343,906 LF	$ 0.09	$ 120,951.54
11.0	Underground Cable (LV, MV, Comm)	64,473 LF	$ 1.75	$ 112,827.75
12.0	PV Plant Fence	20,188 LF	$ 2.75	$ 55,517.00
13.0	Interconnection Facilities (Pro-Rata Split w/ NMSI)	1 LS	$ 56,879.04	$ 56,879.04
14.0	Concrete	41 CY	$ 84	$ 3,444.00
15.0	Gravel	2,657 CY	$ 31	$ 82,367.00
16.0	Offsite Disposal by Volume	2,699 CY	$ 45	$ 121,455.00
17.0	Offsite Disposal by Weight	0.00 TON	$ 95	$ -
18.0	General Conditions	35 MW	$ 1,189	$ 41,580.00
			SUBTOTAL	$ 1,230,656.10

SITE RESTORATION

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
19.0	Re-Seeding	198 ACRES	$ 138	$ 26,634.00
20.0	Re-Grading	0 CY	$ 21	$ -
21.0	Erosion and Sediment Control	1 LS	$ 59,547	$ 59,547.00
			SUBTOTAL	$ 86,181.00

SALVAGE

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
22.0	PV Modules (455 W)	90,876	$ 14	$ 1,272,264.00
23.0	PV Inverter(s) (2.56 MVA)	13	$ 2,998	$ 38,974.00
24.0	PV Transformer(s) (2.56 MVA)	13	$ 2,576	$ 33,488.00
25.0	ESS Inverter(s) (2MVA)	0	$ 2,998	$ -
26.0	ESS Container(s)	0 LBS	$ 0.12	$ -
27.0	ESS Transformer(s) (2MVA)	0	$ 2,576	$ -
28.0	Racking Frame (Single Axis)	3,424,200 LBS	$ 0.12	$ 410,904.00
29.0	Racking Posts	2,225,916 LBS	$ 0.12	$ 267,109.92
30.0	Tracker Motors	66,225 LBS	$ 0.26	$ 17,218.50
31.0	Interconnection Steel Structures	11,092 LBS	$ 0.12	$ 1,331.04
32.0	Interconnection Power & Instrument Transformers	50,449 LBS	$ 0.12	$ 6,053.88
33.0	Interconnection Disconnect Switches (1 & 3-Phase)	1,426 LBS	$ 0.40	$ 570.40
34.0	Interconnection Primary Conductor	1,177 LBS	$ 0.40	$ 470.80
35.0	Interconnection Pre-Fab Steel Buildings	12,075 LBS	$ 0.12	$ 1,449.00
36.0	Control Panels	280 LBS	$ 0.12	$ 33.60
37.0	Electronic Controls	89 LBS	$ 0.25	$ 22.25
38.0	LV Wiring (PV Plant & Interconnection)	79,220 LBS	$ 1.61	$ 127,544.20
39.0	MV Wiring	106,779 LBS	$ 1.03	$ 109,982.37
40.0	Chain Link Fence (PV Plant & Interconnection)	308,353 LBS	$ 0.12	$ 37,002.60
			SUBTOTAL	$ 2,324,418.56

TOTAL DISASSEMBLY, DISPOSAL, & SITE RESTORATION COST	$	*1,316,837.10*
TOTAL SALVAGE VALUE	$	*2,324,418.56*
NET DECOMISSIONING COST	$	*(1,007,581.46)*

Matt MacDonald

3/4/2020

Date

Sulait Akela, PE
Principal Engineer
(512) 777-3078

Hecate Energy Highland 2, LLC

New Market Solar II Farm

Case No. 20-1288-EL-BGN

Site Restoration and Decommissioning

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SITE RESTORATION AND DECOMMISSIONING

Overview

New Market Solar II (the Project), will be located in Highland County, Ohio and is a 35 megawatt alternating current ("MWAC") facility that will occupy approximately 222 acres ("New Market Solar I Proposed Project Footprint")

1. Application Requirements

Applicant proposes this decommissioning plan which outlines the responsible parties, schedules, and projected costs for decommissioning the Projects and restoring the Project area to substantially its pre-construction condition (the Plan). The Plan will;

a.) provide for the safe removal and sale, re-deployment, recycling or proper disposal of all components of the Projects, including components containing rare or valuable materials.

b.) prioritize reuse and recycling over land disposal as waste.

c.) require that the contractor leading the decommissioning effort work closely with manufacturers, local subcontractors, and waste management firms to segregate - based on the prevailing standards and practices at the time - materials that can be reused and recycled from those that must be land-disposed as waste.

d.) require that the Project area be restored to use for cultivation, unless circumstances prevailing shortly in advance of the start of decommissioning indicate that another use is more appropriate or explicitly desired by the landowner. Restoration will include a return to the same or functionally similar pre- construction drainage patterns, including farm drainage tiles, decompaction of soil, and seeding with an appropriate, low-growing vegetative cover, to stabilize soil, enhance soil structure, and increase soil fertility.

e.) repair any damage to drain tile systems. Applicant will provide for financial security to ensure that funds are available for the removal of the Projects and restoration of the Project area.

Prior to the pre-construction meeting, the Applicant will provide to the OPSB, a stamped Plan which is stamped an independent and registered professional engineer who is licensed to practice in Ohio. The Plan, consist of

a.) an estimate of the total cost of implementing the Plan, without regard to the salvage value of the components of the Projects, plus a 10% amount to cover contingencies; less

b.) an estimate of the salvage value of the components of the Projects, less a 10% amount to cover contingencies ("Net Decommissioning Cost"). The Professional Engineer (or an equally qualified one) will re-calculate the Net Decommissioning Costs approximately every five (5) years over the operating life of the projects. If and when the Net Decommissioning Cost is a positive number, Applicant will post and maintain a surety bond or similar financial assurance instrument in the amount of the Net Decommissioning Cost that may be drawn upon to implement the Plan. If and when a subsequent estimate of the Net Decommissioning Cost increases the New Decommissioning Cost, the financial assurance instrument will be increased to the higher amount.

Except as it may be drawn upon to implement the Plan, the amount of the financial assurance will not be decreased.

2. Safety and the Removal of Hazardous Conditions during Decommissioning

The Project is anticipated to have an operational lifespan of 35 years. At the end of the project lifespan, the Project components are expected to be decommissioned as described in Section 3.0. If Project economics and need remain viable at that time, the facilities could be "repowered" with new technology and continue operating for an extended period. This process may include the replacement and/or upgrading of Project components. However, specific details are unknown at this time, as technological improvements over the next 35 years are currently unknown. It is important to note that the landowner will be likely the certificate holder or an affiliate. The Project will be purchasing the land from the current landowners.

Although the future land use of the Project Location cannot be known, it is most probable that after decommissioning, the Project Locations will be returned to their former agricultural land use. Therefore, this report has conservatively assumed that the future site uses will be agricultural. It should be noted that there is potential for the planned post-Project land use to change before actual decommissioning. The information in this report will be updated, if required, in advance of decommissioning to represent the applicable conditions and regulatory requirements in effect at that time.

Prior to the start of the decommissioning of the Project, the scope of work for the contractor performing the decommissioning will ensure that the entire plant will be completely de-energized before the commencement of decommissioning and that the solar panels will have their leads taped upon being cut.

3. Decommissioning

At the end of the Projects useful life, the Project components are expected to be decommissioned as described below. The decommissioning and restoration work will generally involve the following:

- Planning, permitting, and consultation;
- Disassemble and recycle PV panels;
- Remove and recycle inverter stations, combiner boxes, and switchboards;
- Remove transformers and transport to a licensed facility for draining, disassembly, and recycling;
- Remove circuit breakers and transport to a licensed facility for degassing, disassembly, and recycling;
- Disassemble and recycle tracker steel components;
- Disassemble and recycle substation steel and components;
- Remove and recycle tracker I-beam posts;
- Remove, crush and recycle concrete foundations (substation components and inverter skids);
- Remove and recycle selected stone roads;
- Remove and recycle perimeter fencing;
- Collect and dispose of non-recyclable materials (loose debris, road filter fabric, select substation components, above ground PVC conduits);
- Regrading and decompaction as needed; and
- Clean up and inspection.

The contractor will be required to properly track and manifest all material leaving the site and properly dispose to licensed recycling and disposal programs.

Decommissioning and removal of Facility components from the Facility Area is anticipated to occur within one year following discontinuation of operations on the Facility Area. The decommissioning is anticipated to be completed over a 6-to-9-month period, most likely during a summer season that provides drier conditions.

3.1 Responsible Parties

The Certificate Holder once approved, will ensure that the decommissioning activities lead by the contractor are fulfilled and in compliance with the conditions set forth in this document and any Agreement, law or regulation mentioned herein.

The general contractor will lead the decommissioning efforts by working closely with manufacturers, local subcontractors, and waste management firms to segregate – based on the prevailing standards and practices at the time – materials can be reused and recycled from those that must be land-disposed as waste. The general contractor will be responsible for preparing the construction (decommissioning) management plans, Rehabilitation Plan, obtaining construction permits/approvals, and executing the decommissioning plan and associated decommissioning works.

3.2 Decommissioning During Construction (Abandonment of Projects)

In the unlikely event that construction cannot be completed and decommissioning of the Projects are initiated during the construction phase, restoration of lands to pre-construction conditions will follow the same procedure as for the decommissioning at the end of Project life, as described in the sections below.

In the event that the sites have been cleared and/or excavated in preparation for installation of Project infrastructure, appropriate environmental protection measures would be implemented to prevent topsoil erosion. The extent of environmental protection measures required would be dependent on the progress made at the time of Projects abandonment and would be determined through site inspections by qualified specialists. Possible measures would include, as appropriate, erosion and sediment control fencing, filling excavated areas, replacement of topsoil, and/or revegetation.

3.3 Decommissioning After Ceasing Operation

It is anticipated that the Projects would have an operational lifespan of 35 years. The Project life could be further extended with proper maintenance, component replacement and repowering.

3.3.1 General Environmental Protection During Decommissioning

During all decommissioning and restoration activities, general environmental protection and mitigation measures would be implemented. Many activities during decommissioning would be comparable to the construction phase. As such, general mitigation measures and management practices that would be used, as appropriate, including erosion and sediment control, Storm Water Pollution Prevention Plan (SWPPP), air quality and noise mitigation, and contingency plans for unexpected finds and spills, are provided in the construction management plans.

All decommissioning and restoration activities will be performed as per the requirements of relevant governing agencies and will be in accordance with all relevant statutes in effect at the time of decommissioning.

3.3.2 Pre-Dismantling Activities

At the end of the Projects useful life, they will first be de-energized and isolated from all external electrical lines. Prior to any dismantling or removal of equipment, staging areas would be delineated at appropriate locations within the Project Locations, including near the project substation and inverter locations.

Temporary erosion and sedimentation control measures and SWPPP controls will be implemented during the decommissioning phase of the Projects. These measures will be enacted with consideration of industry-standard practices.

Review the surrounding area for local disposal company as described below.

- Steel https://www.877ironmike.com/metal-prices
- Clean aluminum https://www.877ironmike.com/metal-prices
- Dirty aluminum https://www.877ironmike.com/metal-prices
- Copper https://www.877ironmike.com/metal-prices
- Glass https://www.recyclingtoday.com/article/rt1114-recycled-glass-commodity/
- Electronic disposal waste http://greencitizen.com/the-real-cost-of-electronics-recycling/

3.2.3 Equipment Dismantling and Removal

The following sections describe the process that will be undertaken to remove the various components associated with the Projects.

3.3.4 Solar Panels

Each solar panel will be mounted on a galvanized steel and aluminum rack system that is positioned approximately 1 to 4 ft above finished grade with a +/- 60-degree range of motion (single-axis tracking).

During decommissioning, each panel will be disconnected from the electrical system and unfastened from the mounting rack. After removal of the panel from the rack, it will be placed in a vehicle or container for transportation off-site for recycling or disposal.

The tracker that supports the solar panels will be disassembled and removed from the site. The metal racking components may be reused or recycled for future use.

All surface components and subsurface components, including those related to foundations will be removed off-site and properly recycled.

3.3.5 Electrical Equipment and Collector System

Inverters and inverter step-up transformer skids, including associated piling, will be removed and will be shipped off-site for eventual recycled or disposal. The piles and associated foundations will be removed from the site and disposed or recycled.

Underground collector cables will be removed, and all work to decommission underground connection lines would be conducted within the boundaries of the Projects and municipal road easements.

3.3.6 Project Substation

All the above-ground structures and electrical equipment, including circuit breakers, main transformer, chain link fencing, control building and grounding grid would be removed, and any concrete foundations would be removed. All granular and geotextile materials would be removed from the Project Locations by a dump truck or placed in a designated on-site area for use by the landowner. All electrical system components will be taken off-site for reuse or disposal.

3.3.6 Access Roads

All-access roads (constructed of aggregate material or covered in grass – not paved) will be removed; this includes any geotextile material beneath the roads and granular material. All granular and geotextile materials would be removed from the site by a dump truck.

Where any access roads will be removed within areas that were previously used for agricultural purposes, topsoil will be redistributed to provide similar ground cover as was present within the areas prior to site disturbance.

3.3.7 Storage Infrastructure and Perimeter Fence

Storage and operation infrastructure and any associated temporary decommissioning improvements (e.g., temporary construction trailer) used during the decommissioning phase will be removed from the site by truck. Any foundations associated with these facilities would be removed.

Perimeter fencing would be removed and recycled or re-used. Where the landowner prefers to retain the fencing, these portions of the fence would be left in place.

3.4 Site Rehabilitation and Restoration

At the time of decommissioning a Rehabilitation Plan will be developed to restore agricultural lands and wildlife habitat in areas affected by the Projects to the same or functionally similar pre- construction state, unless circumstances prevailing shortly in advance of the start of decommissioning indicate that another use is more appropriately or explicitly desired by the landowner. It is important to note here that the landowner and the certificate holder will be one and the same, meaning the underlying property will be owned by either the Project or a Project affiliate, so unlike many Projects, the land will not be being returned to the landowner.

The Rehabilitation Plan will include, but not be limited to the following:

- Agricultural areas, which comprise the pre-developed Project Locations, will be restored by redistributing topsoil to provide substantially similar ground cover as was present within the areas prior to site disturbance to accommodate the return of active agricultural operation of the site. The agricultural areas will be revegetated using the same types of grasses or crops found on adjacent tracks if the landowner reasonably requests such reseeding.
- Natural areas will be revegetated using native plant material and seeds appropriate for the Project Locations or allowed to revegetate naturally. In the event the land is intended to be placed into agricultural production, the re-seeding of the land will be done using the same types of grasses or crops found on adjacent tracks if the landowner reasonably requests such reseeding.
- Access roads and other areas which may have become compacted during operation or decommissioning will be de-compacted to pre-existing conditions.
-

Where Project infrastructure has been removed, disturbed areas will be seeded with quick-growing native species to prevent topsoil erosion, unless seeding is immediately applied by the landowner. The seed mixture will be determined at that time in consultation with the Highland County Officials and the OPSB. Erosion and sediment control measures and SWPPP protection will be installed at ditches and will be left in place until the ground cover is fully established.

3.4.1 Watercourses

Any proposed decommissioning works within or near watercourses will be discussed with the U.S. Army Corp. of Engineers, County, Ohio Department of Natural Resources, Ohio Environmental Protection Agency and OPSB, to determine any applicable guidelines, permitting, site-specific mitigation and/or remediation plans, if any. Similar mitigation and monitoring measures implemented during construction will be used during the decommissioning of the Projects. These mitigation measures are described in the Construction Management Plans, and site-specific requirements determined during the detailed design and permitting process. Measures are anticipated to include standard construction practices at the time of decommissioning, including erosion and sediment control during removal of the structures.

3.4.2 Agricultural Lands

Agricultural lands that have become compacted due to facility operation or decommissioning activities, such as access roads, would be de-compacted using chisel ploughing and/or subsoiling, as determined by an environmental advisor. Topsoil would be re-graded or added to a similar depth as the condition it was before construction. All areas would be graded to pre-construction conditions and restored appropriately, if required by the Project landowner.

3.4.3 Spills

Although strict spill prevention and spill response procedures will be in place during operation, there is the potential for small spills to occur during routine operation, maintenance, and decommissioning. It is not expected that the decommissioning of the Projects will entail the need to conduct any soil or groundwater remediation. The operation of the Projects will not produce any hazardous waste or wastewater. Provided the Projects are operated and maintained in accordance with industry best practices there should be no significant environmental liabilities associated with cleanup or remediation.

3.5 Managing Excess Materials and Waste

Before decommissioning the Projects, a complete waste audit and waste reduction work plan will be completed in accordance with any applicable guidance or requirements of the OPSB or relevant regulations in effect at the time of decommissioning.

Typical waste materials and modes of disposal, recycling or reuse are presented in Table 1.

Major pieces of equipment may be recyclable or reusable. The galvanized-steel and aluminum racks may be sold for scrap or recycled. Electrical equipment could either be salvaged for reuse or recycled. Components such as the cabling would have a high resale value due to copper and aluminum content. Concrete from footings could be crushed and recycled as granular fill material. Spent oils, if any, could be recovered for recycling through existing oil reprocessing companies.

As much of the facility would consist of reusable or recyclable materials, there would be a minimal residual waste for disposal as a result of decommissioning the facility. Small amounts of registerable waste materials would be managed in accordance with OPSB requirements or subsequent applicable legislation. Residual non-hazardous wastes would be disposed of at a licensed landfill in operation at the time of decommissioning.

4. Salvage and Recycling

Most of the Facility systems and components are recyclable. Publicly available data shows a market price for scrap materials, indicating these can be profitably recycled by the Applicants or the decommissioning contractor. The major components and their expected scrap codes are outlined in Table 1.

Table 1. Major Components and Scrap Codes

Facility Component	Scrap Code
Inverter	Computer / Server (Complete)
Transformer	Sealed Unit
Racking Frame (Single Axis)	Structural Steel
Racking Posts	Structural Steel
Tracker Motors	Scrap Electric Motors
LV Wiring - #10	#1 Insulated Copper Wire 85 percent (%) Recovery
LV Wiring - 2/0	#1 Insulated Copper Wire 85% Recovery
LV Wiring - #2 Bare	#1 Insulated Copper Wire 85% Recovery
LV Wiring - 500MCM	#1 Insulated Copper Wire 85% Recovery
MV Wiring - 2/0 Bare	#2 Insulated Copper Wire 50% Recovery
MV Wiring - 500MCM	#2 Insulated Copper Wire 50% Recovery
Chain Link Fence Fabric	Structural Steel
Chain Link Fence Top Post	Structural Steel
Chain Link Fence Line Post	Structural Steel
Chain Link Fence Corner Post	Structural Steel
Main Power Transformer	Sealed UnitStructural Steel*
Disconnect Switches	Aluminum Extrusions 6061
Primary Conductor	Aluminum Extrusions 6061
Electronic Controls	Low Grade Board
Control Panels	Structural Steel
Building	Structural Steel

The photovoltaic (PV) solar modules also are of recyclable material (silicon, metal). PV manufacturers are establishing programs to receive recycled PV modules.

The following general statements can be made about the present state of the salvage market with regards to crystalline silicon PV modules:

- The United States has a robust market for the salvage, recycling, and re-sale of industrial materials including the aluminum frame, glass fronts, and silicon which comprise the majority of a PV module.
- A number of websites post publicly available data on the scrap values of industrial materials in different regions of the United States. Example websites for pricing include: scrapmonster.com, rockawayrecycling.com, and recycleinme.com.

- Decommissioned PV modules from the Facility can be resold as industrial materials in the national salvage market. Possible salvage operations include: Cleanlites, ECS, Metal & Catalyst Resources, and Morgen Industries.
- PV modules also may be resold as functional modules for power production. PV Modules will continue to operate after years of use, though producing less power than their initial ratings. The industry has observed a degradation rate of 0.2–1% per year, with 0.7% used as an industry-wide assumption in the United States. Based on a 0.7% degradation rate, a 400-watt (W) PV module would be rated at 335-W after 25 years of operation. The module would need to be tested prior to re-sale to verify the new ratings.
- PV power plants may be re-powered at "end-of-life" with new inverter systems or may be decommissioned with PV modules re-sold for use at another plant.

PV modules are expected to be priced at $0.05–$0.1 per watt at the time of Facility decommissioning, significantly less than the price for new modules projected by the National Renewable Energy Laboratory.

5. Emergency Response and Communications Plan

The following programs, plans, and procedures will be carried forward during the decommissioning of the Projects.

5.1 Environmental Procedures

Spills and releases: identify the procedures for the prevention, response, and notification of spills. In addition, establish the general procedures for spill clean-up, personnel training, and material handling and storage to prevent spills.

Non-hazardous waste management: establish alternative procedures for the management and disposal of used lubricants, used drums, and general waste.

5.2 Occupational Health and Safety Procedures

The general contractor retained to undertake decommissioning will be responsible for employee health and safety and will implement the following safety procedures and protocols, as appropriate, to maintain employee safety throughout decommissioning activities:

- Personal protective equipment (PPE), including non-slip footwear, eye protection, clothing, and hardhats, will be worn by personnel when on duty.
- Elevated platforms, walkways, and ladders will be equipped with handrails, toeboards, and non-slip surfaces.
- Electrical equipment will be insulated and grounded in compliance with the appropriate electrical code.

As appropriate, the general contractor retained to undertake decommissioning will develop or have an existing training program that can be implemented to appropriately train personnel on decommissioning programs, environmental, health, and safety procedures, and the Emergency Response Plan.

5.3 Health and Safety Plan

The general contractor will prepare a Health and Safety Plan considering both public and occupational health and safety issues. This may include protecting the public from equipment and construction areas by posting warning signs, use of PPE, accident reporting, equipment operation

5.4 Emergency Response and Communications Plan

The Emergency Response and Communications Plan will be developed and utilized during the decommissioning of the Projects, along with the Complaint Response Protocol. This includes informing the public about activities occurring at the Project sites (including emergencies), means for contacting the Owner or the general contractor responsible for decommissioning, recording follow up on complaints expressed during the decommissioning phase, and reporting spills to the Owner and OEPA, as required.

6. Decommissioning Notification

Advance notification of decommissioning will be provided to the stakeholders and other interested agencies prior to decommissioning works commencing. Notification may be in the form of letters, newspaper notices, and updates on the Projects or Certificate holder website or direct communications.

7. Schedule Decommission

The decommissioning and restoration of the projects, following the project termination, is expected to be from six (6) to nine (9) months. A phasing plan (order of construction activities) will be developed and will include phasing, material staging locations, truck routes, and information regarding recycling and disposal activities. Before any construction activities can begin a pre-construction, management plan must be developed and submitted thirty to sixty day(s) before decommissioning for County approval.

8. Project Decommissioning and Site Restoration Cost Estimate

Certificate holder will provide for financial security to ensure that funds are available for the removal of the Project and restoration of the Project Area.

If and when the Net Decommissioning Cost becomes a positive number, Certificate holder will post and maintain a surety bond or similar other financial assurance instrument, such as a Letter of Credit with accompanying draw down instructions, in the amount of the Net Decommissioning Cost that may be drawn upon to implement the Decommissioning Plan. If and when a subsequent estimate of the Net Decommissioning Cost increases the New Decommissioning Cost, the financial assurance instrument or letter of credit will be increased to the higher amount. Except as it may be drawn upon to implement the Decommissioning Plan, the amount of the financial assurance instrument will not be decreased. Exhibit A demonstrates an estimate of the total decommissioning and site restoration costs to be confirmed by the independent engineer

Appendix A: Site Restoration and Decommissioning Cost Estimate

New Market Solar II OPINION OF PROBABLE COST - PV PLANT DECOMISSIONING - 35 MW		
ANNUAL INFLATION=1.36% - END OF LIFE: YEAR 35		
DISASSEMBLY & DISPOSAL		
ITEM	DESCRIPTION	TOTAL
1.0	PV Modules (400 W)	$ 243,252.45
2.0	PV Inverter(s) (2.5 MVA)	$ 16,103.50
3.0	PV Transformer(s) (2.5 MVA)	$ 8,031.75
4.0	ESS Inverter(s) (2MVA)	$ -
5.0	ESS Container(s)	$ -
6.0	ESS Transformer(s) (2MVA)	$ -
7.0	Racking Frame (Single Axis)	$ 241,150.35
8.0	Racking Posts	$ 307,725.60
9.0	Tracker Motors	$ 32,547.90
10.0	Racking Wiring	$ 55,206.30
11.0	Underground Cable (LV, MV, Comm)	$ 131,997.55
12.0	PV Plant Fence	$ 23,065.35
13.0	Interconnection Facilities	$ 56,879.04
14.0	Concrete	$ 3,822.00
15.0	Gravel	$ 61,975.20
16.0	Offsite Disposal by Volume	$ 92,043.00
17.0	Offsite Disposal by Weight	$ -
18.0	General Conditions	$ 127,225.00
SUBTOTAL		$ 1,401,045.01
SITE RESTORATION		
ITEM	DESCRIPTION	TOTAL
19.0	Re-Seeding	$ 39,799.20
20.0	Re-Grading	$ -
21.0	Erosion and Sediment Control	$ 25,132.10
SUBTOTAL		$ 64,931.30
SALVAGE		
ITEM	DESCRIPTION	TOTAL
22.0	PV Modules (400 W)	$ 1,593,725.00
23.0	PV Inverter(s) (2.5 MVA)	$ 45,119.90
24.0	PV Transformer(s) (2.5 MVA)	$ 38,768.80
25.0	ESS Inverter(s) (2MVA)	$ -
26.0	ESS Container(s)	$ -
27.0	ESS Transformer(s) (2MVA)	$ -
28.0	Racking Frame (Single Axis)	$ 514,753.18
29.0	Racking Posts	$ 380,810.43
30.0	Tracker Motors	$ 20,771.48
31.0	Interconnection Steel Structures	$ 1,331.15
32.0	Interconnection Power & Instrument Transformers	$ 6,053.92
33.0	Interconnection Disconnect Switches (1 & 3-Phase)	$ 570.64
34.0	Interconnection Primary Conductor	$ 471.10
35.0	Interconnection Pre-Fab Steel Buildings	$ 1,449.00
36.0	Control Panels	$ 33.60
37.0	Electronic Controls	$ 22.31
38.0	LV Wiring (PV Plant & Interconnection)	$ 138,828.93
39.0	MV Wiring	$ 144,840.61
40.0	Chain Link Fence (PV Plant & Interconnection)	$ 15,379.52
SUBTOTAL		$ 2,902,929.56
	TOTAL DISASSEMBLY, DISPOSAL & SITE RESTORATION COST	$ *1,465,976.31*
	TOTAL SALVAGE VALUE	$ *2,902,929.56*
	NET DECOMISSIONING COST	$ *(1,436,953.25)*

Inadvertent Return Contingency Plan for Horizontal Directional Drilling (HDD)

Hecate New Market I and II Solar Project

McCARTHY

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1 INTRODUCTION

This Inadvertent Return Contingency Plan (Plan) provides specific procedures and steps to contain the inadvertent releases of drilling mud, commonly called "frac-outs", for water bodies that are crossed using horizontal direction drilling (HDD) techniques. Directional drilling operation have the potential to release drilling fluids into the surface environment through fractures in the bedrock and substrate. Drilling mud is largely composed of bentonite clay and water and is not considered toxic or hazardous. However, bentonite clay does have the potential to impact aquatic communities if released into surface waters. The objectives of this Plan are to:

1. Minimize the potential for frac-outs.
2. Guidance for early detection of frac-outs.
3. Protect nearby sensitive resources.
4. Provide guidance for timely response and containment of drilling mud in the event of an inadvertent return.
5. Advise clean up procedures.
6. Provide information on agency notification.

DRILLING FLUIDS

The HDD process involves the use of a drilling fluid (also referred to as drilling mud) made up primarily of water. Bentonite clay, a naturally occurring, nontoxic, inert substance, is added to the water and is pumped through the center of the drill pipe to the cutters. The HDD operation is a closed system to minimize the discharge of drilling mud, fluids, and cuttings outside of the work area.

2 CONTRACTOR RESPONSIBILITIES

The HDD site supervisor/foreman shall be familiar with all aspects of the HDD activity, the contents of this Plan, and has the responsibility of overseeing and implementing the Plan. The supervisor/foreman shall have a copy of this Plan and ensure that the Plan is available (onsite) and accessible to all personnel. All employees must be trained prior to the commencement of drilling activities on necessary monitoring and response procedures in the event of a frac-out.

TRAINING

Prior to the state of construction and drilling activities, the contractor shall provide training to all crew members on the following:

- The contents of the Inadvertent Return Contingency Plan.
- Inspection procedures for monitoring the worksite for frac-outs.
- The contractor's obligation to halt drilling activities in the event a release is identified.
- The procedures and responsibilities of crew members in the event of a release.
- Protocols for communication with applicable agency and project representatives.

3 Equipment and Spill Prevention

The Contractor will be equipped with materials onsite to locate and contain inadvertent returns. The site supervisor/foreman must oversee and ensure the following:

- Equipment and vehicles must be inspected daily for leaks and maintained regularly to ensure good working order to prevent leaks.
- Spill kits and containment materials are available and on-site at all times.
- Equipment required to contain and clean up a frac out are available. These materials may include:
    - Straw or bales with stakes
    - Silt fence
    - Sandbags
    - Shovels
    - Pumps along with appropriate fuel and containment
    - Rolled impermeable plastic/Geotech sheeting
    - On-call vacuum truck
    - Light tower in the event operations are needed after dark

4 Monitoring

All members of the drilling crew and other personnel onsite will be responsible for monitoring and detecting frac-outs. Frac outs and returns of mud are easily identified visible pooling of drilling mud on the surface. The drill path and surrounding buffer should be continually monitored and visually inspected for the presence of drill mud on the surface. Drilling and mud system personnel will observe the volume of drilling fluid return and must immediately report reductions to the foreman or supervisor. The sudden decease in mud volume returns during drilling operations, or loss in drilling mud pump pressure is an indication that drilling fluids are being inadvertently released.

5 Response, Containment, and Cleanup

Once a frac-out has been identified, the response shall be immediate and in accordance with the procedures identified in this Plan. The following procedures must be implemented:

1. Immediately inform the site supervisor/foreman.
2. Determine the extent and severity of the mud release.
3. Install perimeter containment around the immediate spill with a buffer area.
4. If the mud release is small, containable, and **not impacting an environmentally sensitive area**, drilling activities may continue with constant monitoring of the initial release location, the surrounding area, and the drill mud pressure.
5. If the spill is large, significant, or impacting an environmentally sensitive area, directional drilling activities must be immediately suspended and:
    a. The drill will be temporarily retracted to relieve pressure.

b. Reduce circulation pressure and evaluate the circumstances leading to circulation loss to determine if the fracture can be sealed.
c. Thicken the drilling fluid to attempt to seal off the location of the release as practical.
d. The site supervisor will assess the situation and determine if the drill can continue or if an alternate plan is necessary.
e. Project personnel will be notified.

In cases of inadvertent releases to open water or flooded wetlands, it may be impractical or impossible to contain the release. For releases in shallow water, the HDD contractor will install staked sediment barriers in attempt to contain. Removal by vacuum truck may be attempted if deemed appropriate. The decision to proceed with the drilling operation will be at the discretion of the owner after all practical methods to seal off the location of the discharge have been attempted. The project owner will notify the appropriate authorities for downstream water intakes. Open and flowing waterbodies will be observed for the presence of release plumes. Water sampling equipment may be needed to evaluate turbidity levels.

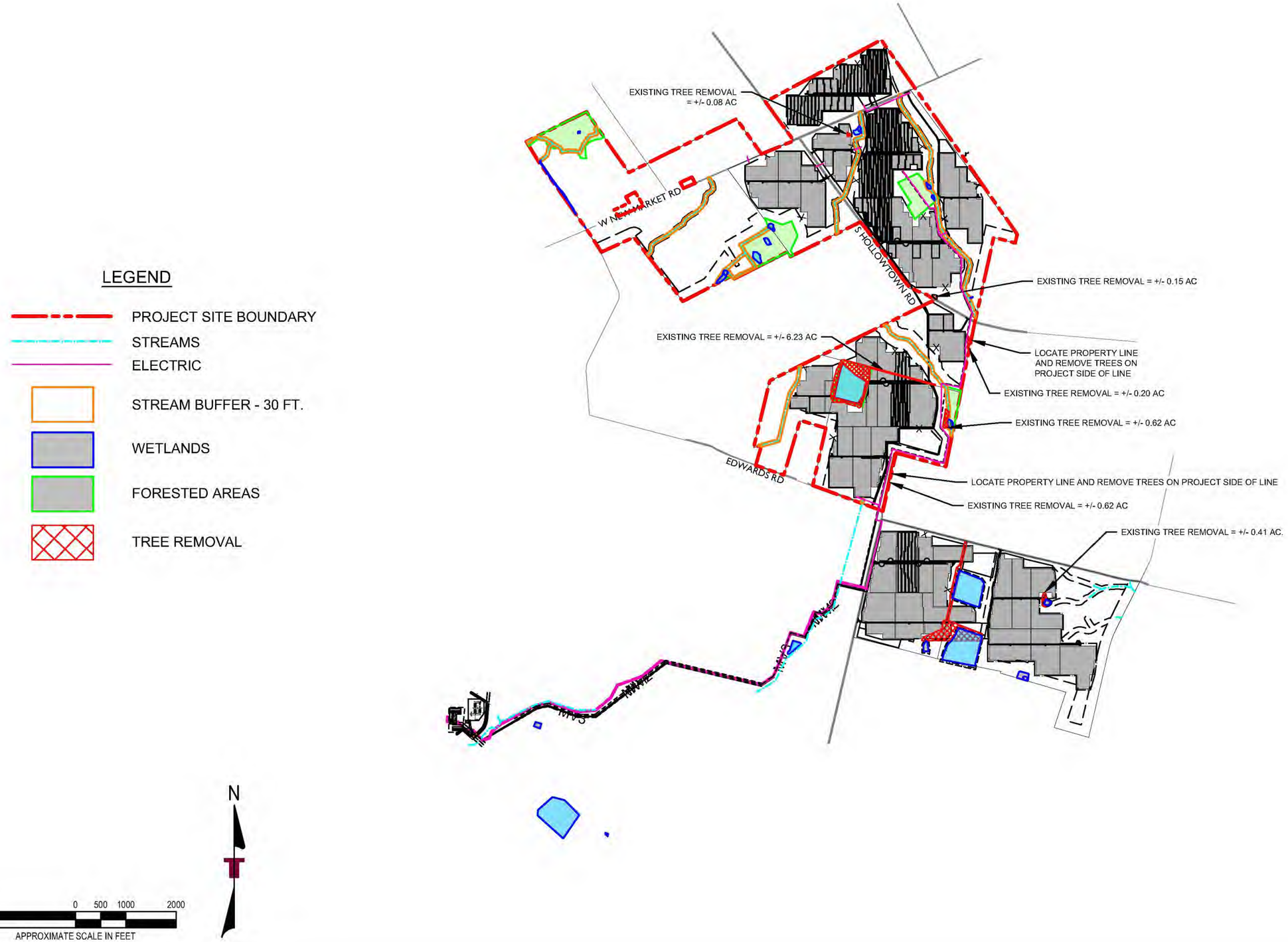
6 Final Cleanup

The final clean-up shall commence after the release is contained. Clean-up shall include:

- Removal of all visible drilling fluid located in accessible areas. Removal methods will vary based on the volume of the release and the site-specific conditions. Removal equipment may include vacuum trucks, loader and track hoe buckets, small pumps, shovels and buckets.
- The recovered drilling fluid/mud will either be recycled or hauled to an approved location for disposal. No recovered drilling fluids will be discharged to streams, storm drains, or any other water source.
- All areas requiring excavation for clean up will be returned to pre-construction contours, using clean fill, as appropriate.
- All contaminated containment measures (silt fence, wattles, straw bales, etc.) will be removed and disposed of after the drilling activities have been completed and the area stabilized.

7 Agency Notification

If an inadvertent release is discovered, steps will be taken to contain the release as described in the Plan. The contractor is responsible for notifying the Owner of inadvertent releases. The Owner is responsible for contacting regulatory agencies. When monitoring indicates that an in-stream release has occurred, the Owner representative will immediately notify the appropriate Federal and State Agencies as soon as possible. The nature of the release will be described, and corrective actions will be detailed. The notified agencies will determine whether the implementation of additional measures is required. Relevant contact information will be gathered prior to commencement of construction operations and maintained on site as part of the project specific notification protocol.



REV.	DATE	BY	DESCRIPTION

ENVIRONMENTALLY SENSITIVE AREAS

Hecate Energy Highland 2, LLC
New Market Solar II
OH 138
Buford, Highland County, Ohio

Terracon
Consulting Engineers and Scientists
611 LUNKEN PARK DRIVE
PH: (513) 321-5816
CINCINNATI, OHIO 45226
FAX: (513) 321-4540

EXHIBIT 1

DESIGNED BY:	MDP
DRAWN BY:	KM
APPVD. BY:	SW
SCALE:	1"=2000'
DATE:	05/13/2021
JOB NO:	N1217124
ACAD NO.	SITE PLAN.DWG
SHEET NO.:	1

Date: 4/13/2021 10:07 AM File Path: C:\USERS\KJMANKIN\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\DRAWINGS\1217124\SITE PLAN.DWG

LEGEND

- PROJECT SITE BOUNDARY
- STREAMS
- ELECTRIC
- STREAM BUFFER - 30 FT.
- WETLANDS
- FORESTED AREAS
- TREE REMOVAL

EXISTING TREE REMOVAL = +/- 0.41 AC.

EXISTING TREE REMOVAL = +/- 0.54 AC.

EDWARDS ROAD

STRINGTOWN RD

LOCATE PROPERTY LINE AND REMOVE TREES ON PROJECT SIDE OF LINE

CLEAR AND GRUB = +/- 9.37 AC.

N

1000 0 250 500 1000

APPROXIMATE SCALE IN FEET

REV	DATE	BY	DESCRIPTION

ENVIRONMENTALLY SENSITIVE AREAS

Hecate Energy Highland 4 LLC
New Market Solar I
OH 138
Buford, Highland County, Ohio

Terracon
Consulting Engineers and Scientists
811 LUNKEN PARK DRIVE
PH. (513) 321-5816
CINCINNATI, OHIO 45226
FAX. (513) 321-4540

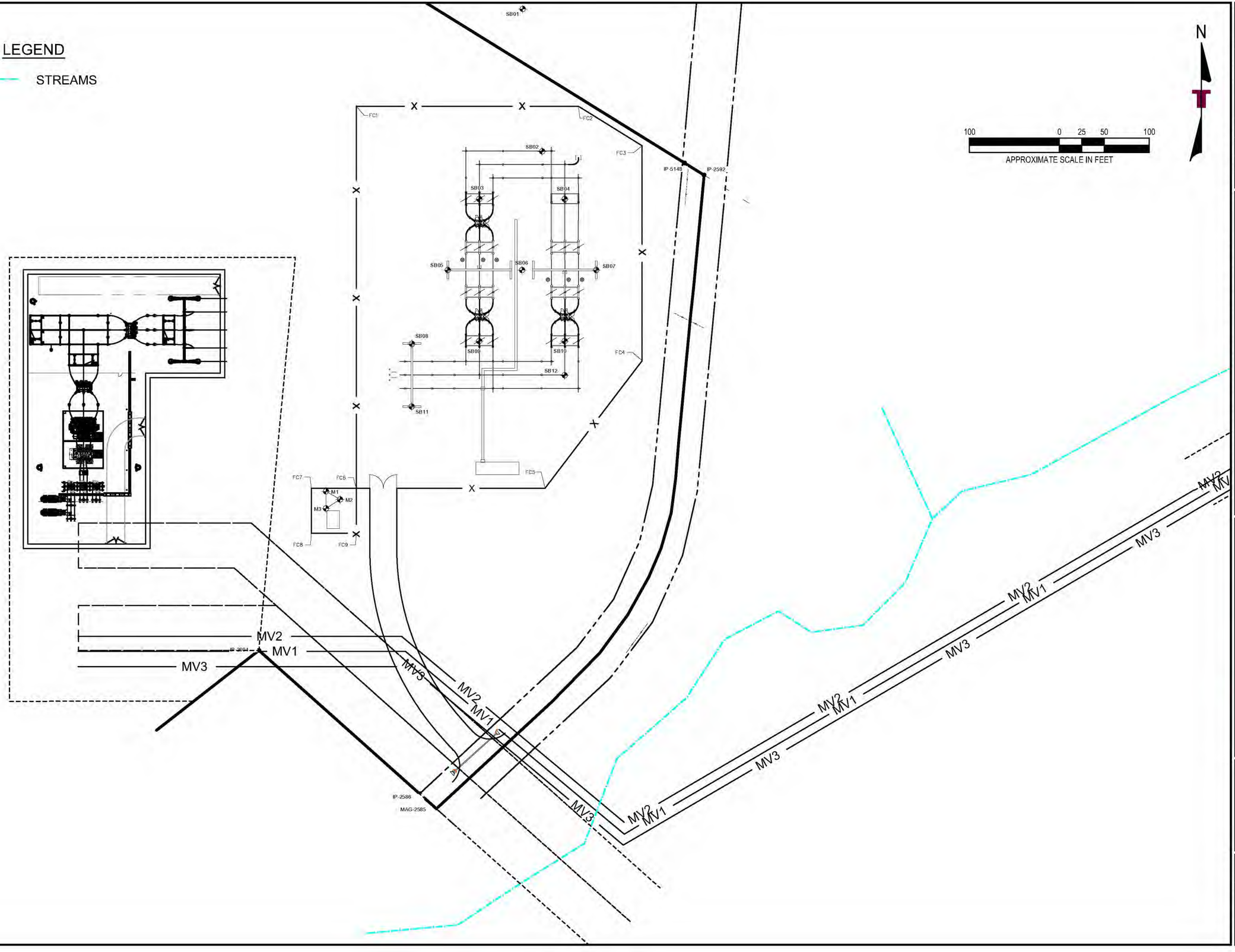
EXHIBIT 1

DESIGNED BY:	MDP
DRAWN BY:	KM
APPVD. BY:	SW
SCALE:	1"=1000'
DATE:	05/13/2021
JOB NO.	N1217122
ACAD NO.	SUBSTAT.DWG
SHEET NO.:	1

Date: 4/13/2021 2:07 PM File Path: C:\USERS\KJMANKIN\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\DRAWINGS\1217122\SUBSTAT.DWG

LEGEND

STREAMS



REV.	DATE	BY	DESCRIPTION

ENVIRONMENTALLY SENSITIVE AREAS

Hecate Energy Highland 4 LLC
New Market Solar I
OH 138
Buford, Highland County, Ohio

Terracon
Consulting Engineers and Scientists
811 LUNKEN PARK DRIVE
PH. (513) 321-5816
CINCINNATI, OHIO 45226
FAX. (513) 321-4540

EXHIBIT 1

DESIGNED BY:	MDP
DRAWN BY:	KM
APPVD. BY:	SW
SCALE:	AS SHOWN
DATE:	03/17/2021
JOB NO.	N1217122
ACAD NO.	SUBSTAT.DWG
SHEET NO.:	1

Date: 4/13/2021 2:07 PM File Path: C:\USERS\KJMANKINO\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\DRAWINGS\1217122\SUBSTAT.DWG

TRANSPORTATION EFFECT AND ROUTE EVALUATION STUDY

FOR

New Market Solar II, 35 MW Site

Whiteoak Township, Highland County, Ohio

Developer:

Hecate Energy Highland 2, LLC

Published: August 2020
Revised March 2021

Prepared By:

FISHER ASSOCIATES

TABLE OF CONTENTS

I. Project Overview

Fisher Associates, P.E., L.S., L.A., D.P.C (FA) has been contracted by Hecate Energy Highland 2, LLC (Hecate Energy) to update its Road Study for the proposed New Market Solar II, a 35 MW solar-powered electric generating facility to be located in Whiteoak Township, Highland County, Ohio (New Market Solar II or Project). The original Road Study was prepared in conjunction with Hecate Energy's application to the Ohio Power Siting Board (OPSB) for a certificate of environmental compatibility and public need for construction of this solar-powered electric generating facility, which certificate is currently pending. This updated Road Study is intended to demonstrate continued satisfaction of the relevant portions of the Ohio Power Siting Board (OPSB) requirements specified in the Ohio Administrative Code, Sections 4906-4-06(F)(3) and 4906-4-06(F)(4).

Section 4906-4-06(F)(3) states: *"The applicant shall evaluate and describe the anticipated impact to roads and bridges associated with construction vehicles and equipment delivery. Describe measures that will be taken to improve inadequate roads and repair roads and bridges to at least the condition present prior to the project."*

Section 4906-4-06(F)(4) states: *"The applicant shall list all transportation permits required for construction and operation of the project, and describe any necessary coordination with appropriate authorities for temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility."*

New Market Solar II is depicted on the location map in Appendix A, Exhibit 1. The proposed Project layout, including the distribution line, is shown on the exhibits provided in Appendix A.

A. Transportation Access Points

All construction equipment, aggregate, asphalt, supplies, and general construction traffic should approach the Project area from the north off State Route 138. Unless authorized by the developer, this traffic will use the existing state routes until it reaches the Project's designated county public roads. The sections of county roads to be utilized by the Project (Designated Roads) are set forth below, along with identification of the road and the footage expected to be utilized:

Roadway Name	County	Total Road Length (ft)
County Highway 5	New Market Road	10,870'
County Highway 24	Hollowtown Road	4,110'
County Highway 2	Gath Road	10,870'
County Highway 56	Edwards Road	6,240'
County Highway 60	Stringtown Road	1,480'

Based on the proposed Project, it is estimated that there will be a minimum of one (1) access point to the solar panels. The Project will utilize a single access off Stringtown Road (CH 60). The Project is otherwise landlocked from adjacent public roadways.

II. Pre-Construction Roadway Characteristics

A. Traffic Volumes and Accident Data

Existing data on vehicle traffic volumes and accidents within the study area was obtained from the ODOT Transportation Information Mapping System (TIMS) and can be found in Appendix C. The Annual Average Daily Traffic (AADT) is listed for the State and County roads, but the local town roads had limited traffic volume data. Detailed capacity analysis was not completed for this Road Study, however, field observation of the transportation network did not reveal any locations where traffic flow and/or capacity appeared to create undue delay for the traveling public.

The table below summarizes the traffic conditions on the Designated Roads.

Roadway Name		Total Road Widths	AADT
County Highway 5	New Market Road	18' - 21'	558
County Highway 24	Hollowtown Road	16' – 17'	NA
County Highway 2	Gath Road	19' – 20'	220
County Highway 56	Edwards Road	18' – 20'	NA
County Highway 60	Stringtown Road	19'	NA

* AADT – Average Annual Daily Traffic
** Traffic volumes obtained from ODOT Transportation Information Mapping System (TIMS) on 02/03/2020. Traffic volumes for Hollowtown Road, Edwards Road, & Stringtown Road were unavailable.

According to TIMS, between 2017 and 2019, there were three (3) accidents within the transportation study area. Of the three accidents, two were at intersections; one at the intersection of State Route 138 and New Market Road and one at the intersection of New Market Road and Hollowtown Road. The other accident occurred on New Market Road between Euverard Road and Hollowtown Road. State Route 138 has a posted speed limit of 45 mph and, therefore, extra caution must be taken while turning onto and off of that highway. Of the three total accidents, none were fatal. Therefore, the fatal accident rate (fatal accidents/million vehicle miles) is zero (0) compared to the 2018 Ohio statewide average fatal accident rate of 0.93 fatal accidents/100 million vehicle miles, as found on the United State Department of Transportation's National Highway Traffic Safety Administration's website.

B. School Bus Route Information and Mass Transit Systems

The students in the Project area attend the Lynchburg-Clay School District in Lynchburg. The high school and elementary school are located on the same campus, which is located about 10.4 miles north of the Project site at 6762 & 6760 State Route 134 (SR 134). The middle school is about 12.8 miles north of the Project site at 8250 State Route 134 (SR 134). Due to the distance from the schools and lack of sidewalks, most of the students are picked-up/dropped-off at their place of residence. The number of stops and buses within the Project area is limited due to the low density of houses within and adjacent to the Project area.

Because the majority of the Project activities and deliveries will likely occur during the middle of the day, the impacts to the local school bus routes should be minimal.

There are no public rail or bus mass transit systems in the Project area.

C. Emergency Service Responder Information

Highland County is served by Mercy Health – Mount Orab Medical Center and Mercy Health – Clermont Hospital. These emergency services are located approximately 15 miles southwest of the Project site. They can be reached by travelling southwest on Route 138, south on Route 86 and west on Route 32.

An Emergency Response Plan for the Project will be implemented which will include procedures (preconstruction through Project operation) for fire and emergency services. This plan will outline on-site equipment and the procedures for fire suppression, medical and weather emergency evacuation as well as other critical areas. In addition, regularly scheduled meetings will be held with local emergency providers. As with any large-scale development, Project components will meet all state and federal safety and fire codes.

D. Traffic Routes Load Bearing and Structural Rating Information

A field review of existing conditions along the Designated Roads was conducted by Fisher Associates on January 27, 2020. Data observed during the site visit as depicted in Appendices A and D, includes:

- Bridge and road load postings
- Road widths, type, and pavement condition
- Culvert cover and conditions
- Posted signs of caution

Bridge and Road Load Posting Restrictions

There are no posted loading restrictions to the bridges located on Designated Roads. As shown in Appendix A, the ODOT bridges along Designated Roads all are rated as fair or good condition:

ODOT Bridge Number	Roadway Name		Feature Intersected	Sufficiency Rating	National Bridge Inventory Rating
3634345	County Highway 2	Gath Road	Flat Run Creek	99.9	Good

Road Surface Type and Widths

As depicted on the Road Width and Conditions Exhibit (Appendix A, Exhibit 2), the road surface types along Designated Roads are all asphalt and have a minimum width of 16 feet.

The table on the following page summarizes the road conditions along the Designated Roads at the present time.

Roadway Name		Total Road Widths (ft)	Total Road Length (ft)	Road Condition
County Highway 5	New Market Road	18' - 21'	10,870'	Road Patch Depressed
County Highway 24	Hollowtown Road	16' – 17'	4,110'	No apparent deficiencies
County Highway 2	Gath Road	19' – 20'	10,870'	No apparent deficiencies
County Highway 56	Edwards Road	18' – 20'	6,240'	Road Leveling & Patch Leveling
County Highway 60	Stringtown Road	19'	1,480'	No apparent deficiencies

The roads that are less than 18' in overall width may require a construction traffic plan so as to not negatively impact the landowners/residents and limit trucks driving off the pavement. There are some pavement repair locations and depressions which are depicted on the Areas of Concern Exhibit (Appendix A, Exhibit 3) and corresponding photographs in Appendix D. There are two unstable roadway sections identified during the study. The first area, along New Market Road, has patching over an existing 24" culvert pipe that should be monitored during hauling and peak construction activities. The second area was on the easternmost limits of Edwards Road (CH 56); however, due to the layout of the site, construction traffic is not anticipated to utilize that stretch of road. The remainder of the Designated Roads do not appear to exhibit any underlying issues, but rather normal aging that requires routine maintenance. If necessary, Hecate Energy will consult with the County Engineer to address any reasonable potential issues; however, there does not seem to be any significant structural concerns to Designated Roads from a transportation perspective.

Culvert Cover and Conditions

During the site visit, it was observed that there are culverts of varying sizes that have recently been replaced and appear to be in good structural condition along Designated Roads. Some have minimal cover; however, these are either small or are made of concrete in order to handle the vehicle and equipment loads. One larger culvert, located along Hollowtown Road, has shallow cover and may need repair work done during/after construction. The pipe should be analyzed to determine if necessary improvements are needed to accommodate the construction traffic. As noted on the Areas of Concern Exhibit (Appendix A, Exhibit 3) and corresponding photographs in Appendix D, some asphalt patches at these new culvert locations are deteriorating faster than the remaining road surface or there is some settlement on either end of the culvert. In these cases, the additional traffic may increase the rate of degradation and will need to be monitored during construction for possible upgrades.

- New Market Road: concrete patch depressed over 24 inch (Area of Concern 1).
- Hollowtown Road: shallow cover over 72 inch concrete elliptical pipe (Area of Concern 3).

Hecate Energy will consult with the County Engineer to address any reasonable potential issues.

Posted Signs of Caution

As depicted on the Areas of Concern Exhibit (Appendix A, Exhibit 3) and corresponding photographs in Appendix D, there is one area that has been posted for flood water potential, on Gath Road just outside the study limits. During and after heavy storm events, construction vehicles traveling along CH 2 should use caution and be aware of standing water along or adjacent to the cartway.

Overhead Clearance

Because the construction vehicles for the Project will be legal heights and no intersection improvements are proposed, there will not be any issues with vehicle clearance to overhead electric crossings and potential vegetation or tree branch overhang concerns.

III. Trip Generation Characteristics

A. Vehicle Trips Frequency

A truck load estimate calculation during the construction phase is included in Appendix E. Any assumptions in the calculations are based on anticipated solar Project loads. Based on the site visit, potential locations for proposed access roads off of the transport roads are depicted on the exhibits in Appendix A. As the construction traffic volumes do not appear to exceed capacities, the roadways should not be significantly impacted by standard construction traffic.

During operation and maintenance, the facility will not generate a significant volume of traffic, with the anticipation of only a few pickup trucks during routine scheduled maintenance as well as unanticipated unscheduled maintenance periods.

IV. Traffic and Transportation Impacts of the Facility

A. Projected Future Traffic Conditions

While construction vehicles are traveling along Project area and delivery route roadways, the existing traffic may experience minor delays to allow for the safe passage of these vehicles.

During development of the potential road use agreements if necessary, the Applicant will coordinate with appropriate authorities to determine applicable thresholds and procedures for implementing temporary or permanent road closures, lane closures, road access restrictions, and traffic control.

During operation and maintenance, the facility will not generate a significant volume of traffic. Therefore, any projected additional future traffic will be negligible.

B. Adequacy of the Road System to Accommodate Projected Traffic

Truck load assumptions are based on typical solar projects that will need to be finalized in conjunction with the anticipated county road use agreements, if required. Roads with low strength and/or poor surface conditions may require improvement after construction traffic. An area of localized pavement distress was noted on the eastern end of Edwards Road, but the current site layout does not utilize any access points off that road and should be avoided. The rest of the transport roads do not appear to exhibit any underlying issues, other than normal aging that may require routine maintenance. Due to the width of some of the roads (16' wide), limited construction traffic management plans may need to be created to avoid negatively impacting the residents/local traffic.

To calculate the number of trucks in Appendix E, we assumed WB-50's (8.5 ft wide x 42.5 ft long x 10 ft high) for the solar panel delivery and standard dump trucks for gravel delivery. An estimation of 1,550-1,850 trucks will be needed for the Project, but none of the vehicles will be oversized or overweight. Roads will need to be monitored prior to, and during construction and reviewed afterwards to determine the required repairs, if any. Roads will be returned to pre-construction conditions in accordance with the Roadway Use, Repair and Maintenance Agreement between Hecate Energy and the County.

During operation and maintenance, the facility will not generate a significant volume of traffic. Therefore improvements and continuous monitoring to the road system are not necessary to accommodate projected operations traffic.

C. Traffic and Transportation Mitigation Measures

Pursuant to the anticipated terms and conditions of the certificate issued by the Ohio Power Siting Board, final engineering design and a traffic plan will be submitted prior to construction activities to ensure all transportation related impacts have been addressed. Since there is only one proposed access apron, the high traffic areas contain the entire haul

route, since all traffic will follow the same route, except near State Route 138 where trucks can head east along New Market road or west along New Market road and then north on Hollowtown road.

All roads should be monitored during construction for potholing and deterioration of the pavement to ensure they are safe for general construction and local roadway traffic. The volume and weight of both the general construction traffic may cause some distress that could require temporary repair. These temporary repairs/improvements could include repaving with asphalt, temporary traffic signs, etc. and be as a condition of a road use agreement with the county. After completion of construction activities, there may be some improvements needed due to any damage caused by the high frequency of vehicle traffic (especially on any roads that had temporary repairs made during the construction activities). Repairing the roadways to pre-construction conditions may include using treatments such as oil and stone or hot or cold mix asphalt, which may be required should a road use agreement be required. Other repairs will likely require some asphalt patching or possibly some asphalt removal, subgrade compaction, and asphalt patching.

A total of the eight (8) culverts were identified during the Project study, however most are located outside the planned traffic routes or appear to be structurally sound. There is one (1) location that may require more thorough monitoring throughout construction. The culvert, located along Hollowtown Road, has shallow cover and may need repair work done during/after construction. The pipe should be analyzed to determine if necessary improvements are needed to accommodate the construction traffic. There is also one (1) additional deteriorating pavement area, that has been identified and marked on Exhibit 3 of Appendix A. This location should be monitored during hauling and construction activities to ensure no further pavement failure develops. If conditions do worsen, maintenance repairs may be required to fix the damaged roadway sections.

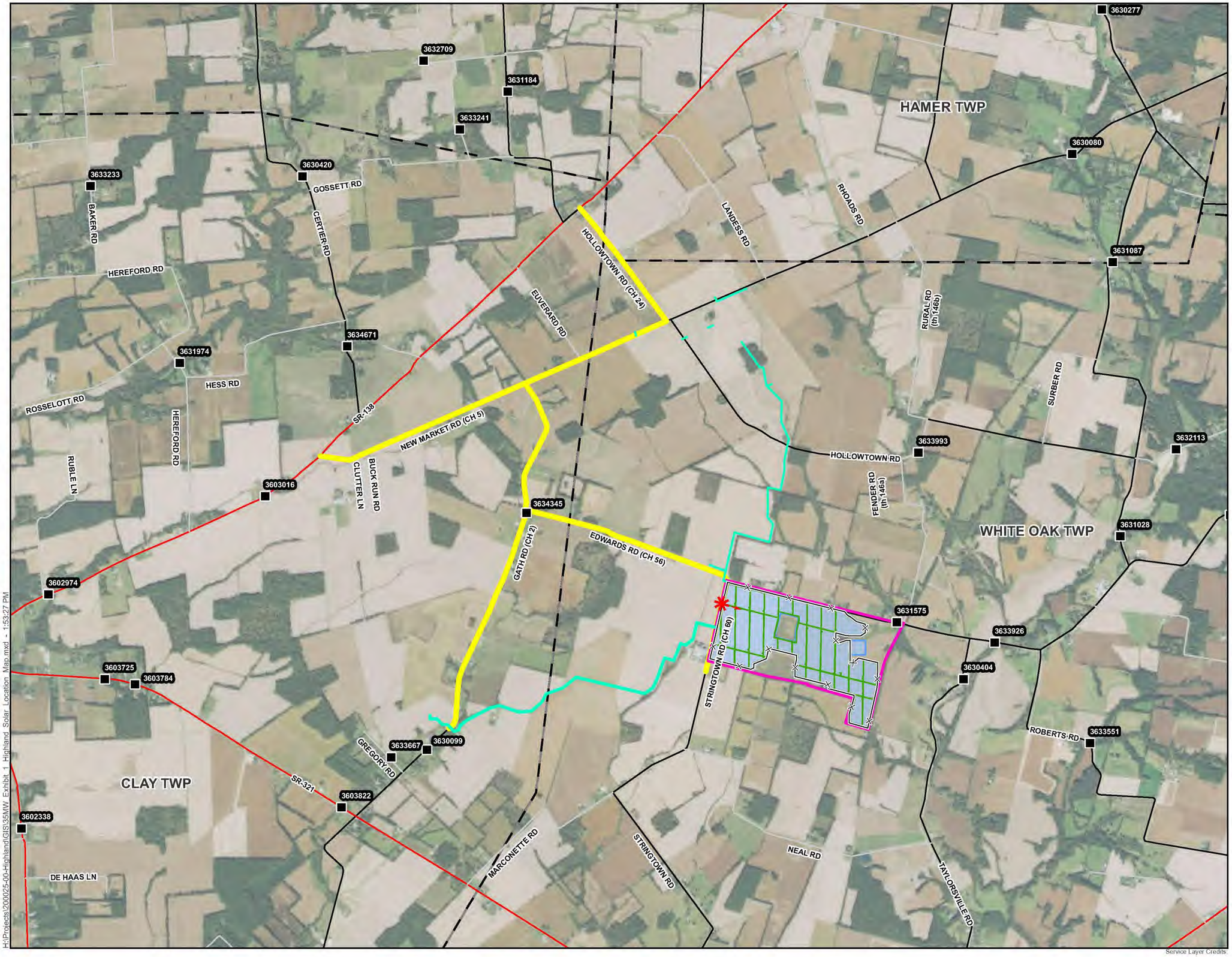
D. Overweight/Oversize Permits

Due to the size of the transformer required for the substation, an overweight/oversize permit may be necessary. However, the remainder of the construction vehicles for the Project will be legal heights, widths, and weights, and would not require obtaining special hauling permits. All permits necessary to transport the transformer will be secured as necessary during final engineering and design.

APPENDIX A

FISHER ASSOCIATES

EXHIBIT 1 : SITE LOCATION / ROAD STUDY MAP
NEW MARKET SOLAR II, 35MW
HIGHLAND COUNTY, OH



Service Layer Credits:

H:\Projects\200025-00-Highland\GIS\35MW Exhibit 1 Highland Solar Location Map.mxd - 1:53:27 PM

- ODOT Bridges
- Potential Access Points with Direction
- Fence
- Access Road
- Distribution Line
- Transportation Study Roads
- State Highway
- County Highway
- Town Road
- Other Road
- Limit of Disturbance
- Property Boundary
- Townships
- Counties

Project USGS Quad(s):

Sardinia

Map Revision Date: 8/28/2020 | Map Author: AM

0 0.25 0.5 Miles

Data Sources:

Roads, Bridges, Political Boundaries -
OhioTransportation Information Mapping System (ODOT TIMS)
www.gis.dot.state.oh.us.com

FISHER ASSOCIATES

EXHIBIT 2 : ROAD WIDTH AND TYPE
NEW MARKET SOLAR II, 35MW
HIGHLAND COUNTY, OH

HAMER TWP

WHITE OAK TWP

CLAY TWP

3630277
3632709
3631184
3633241
3633233
3630420
3630080
3631087
3634671
3631974
3603016
3634345
3602974
3603725
3603784
3633667
3630099
3603822
3602338
3633993
3632113
3631575
3633926
3630404
3631028
3633551

GOSSETT RD
BAKER RD
CERTIER RD
HEREFORD RD
HESS RD
ROSSELOTT RD
RUBLE LN
HEREFORD RD
CLUTTER LN
BUCK RUN RD
SR-138
NEW MARKET RD (CH 5)
20' Asphalt
20' Asphalt
HOLLOWTOWN RD (CH 24)
20' Asphalt
EUVERARD RD
LANDESS RD
RHOADS RD
RURAL RD (th 146b)
SURBER RD
HOLLOWTOWN RD
FENDER RD (th 146a)
EDWARDS RD (CH 56)
19' Asphalt
GATH RD (CH 2)
19' Asphalt
19' Asphalt
STRINGTOWN RD (CH 60)
ROBERTS RD
GREGORY RD
SR-321
MARCONETTE RD
STRINGTOWN RD
NEAL RD
TAYLORSVILLE RD
DE HAAS LN

Service Layer Credits:

H:\Projects\200025-00-Highland\GIS\35MW Exhibit 2 Highland Solar Road Width And Type.mxd - 1:51:27 PM

ODOT Bridges
Potential Access Points with Direction
Fence
Access Road
Distribution Line
Transportation Study Roads
State Highway
County Highway
Town Road
Other Road
Limit of Disturbance
Property Boundary
Townships
Counties

Project USGS Quad(s):

Sardinia

Map Revision Date: 8/28/2020 | Map Author: AM

0 0.25 0.5 Miles

HIGHLAND COUNTY

Data Sources:

Roads, Bridges, Political Boundaries -
OhioTransportation Information Mapping System (ODOT TIMS)
www.gis.dot.state.oh.us.com

FISHER ASSOCIATES

EXHIBIT 3 : AREAS OF CONCERN
NEW MARKET SOLAR II, 35MW
HIGHLAND COUNTY, OH

HAMER TWP

WHITE OAK TWP

CLAY TWP

1. ROAD PATCH DEPRESSED

2. 'ROAD MAY FLOOD' SIGN

3. SHALLOW CULVERT COVER

3630277
3632709
3631184
3633241
3633233
3630420
3630080
3631087
3634671
3631974
3603016
3634345
3633993
3632113
3631028
3602974
3631575
3603725
3603784
3633926
3630404
3633667
3630099
3633551
3603822
3602338

GOSSETT RD
BAKER RD
CERTIER RD
HEREFORD RD
HOLLOWTOWN RD (CH 24)
LANDESS RD
RHOADS RD
EUVERARD RD
RURAL RD (th 146a)
SURBER RD
HESS RD
ROSSELOTT RD
SR-138
NEW MARKET RD (CH 6)
HEREFORD RD
RUBLE LN
CLUTTER LN
BUCK RUN RD
HOLLOWTOWN RD
FENDER RD (th 146a)
GATH RD (CH 2)
EDWARDS RD (CH 56)
STRINGTOWN RD (CH 60)
ROBERTS RD
GREGORY RD
SR-321
MARCONETTE RD
STRINGTOWN RD
NEAL RD
TAYLORSVILLE RD
DE HAAS LN

- ODOT Bridges
- Potential Access Points with Direction
- Fence
- Access Road
- Distribution Line
- Transportation Study Roads
- State Highway
- County Highway
- Town Road
- Other Road
- Limit of Disturbance
- Property Boundary
- Townships
- Counties

Project USGS Quad(s):
Sardinia

Map Revision Date: 8/28/2020 | Map Author: AM

0 0.25 0.5 Miles

HIGHLAND COUNTY

Data Sources:

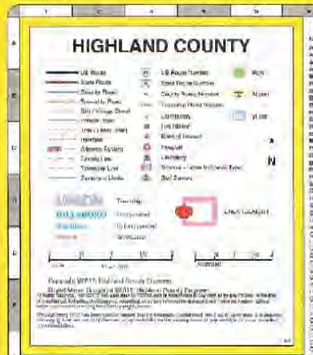
Roads, Bridges, Political Boundaries -
OhioTransportation Information Mapping System (ODOT TIMS)
www.gis.dot.state.oh.us.com

Service Layer Credits:

H:\Projects\200025-00-Highland\GIS\35MW Exhibit 3 Highland Solar Areas of Concern.mxd - 1:51:06 PM

APPENDIX B

HIGHLAND COUNTY



CEMETERY INDEX

COUNTY ROADS

TOWNSHIP ROADS

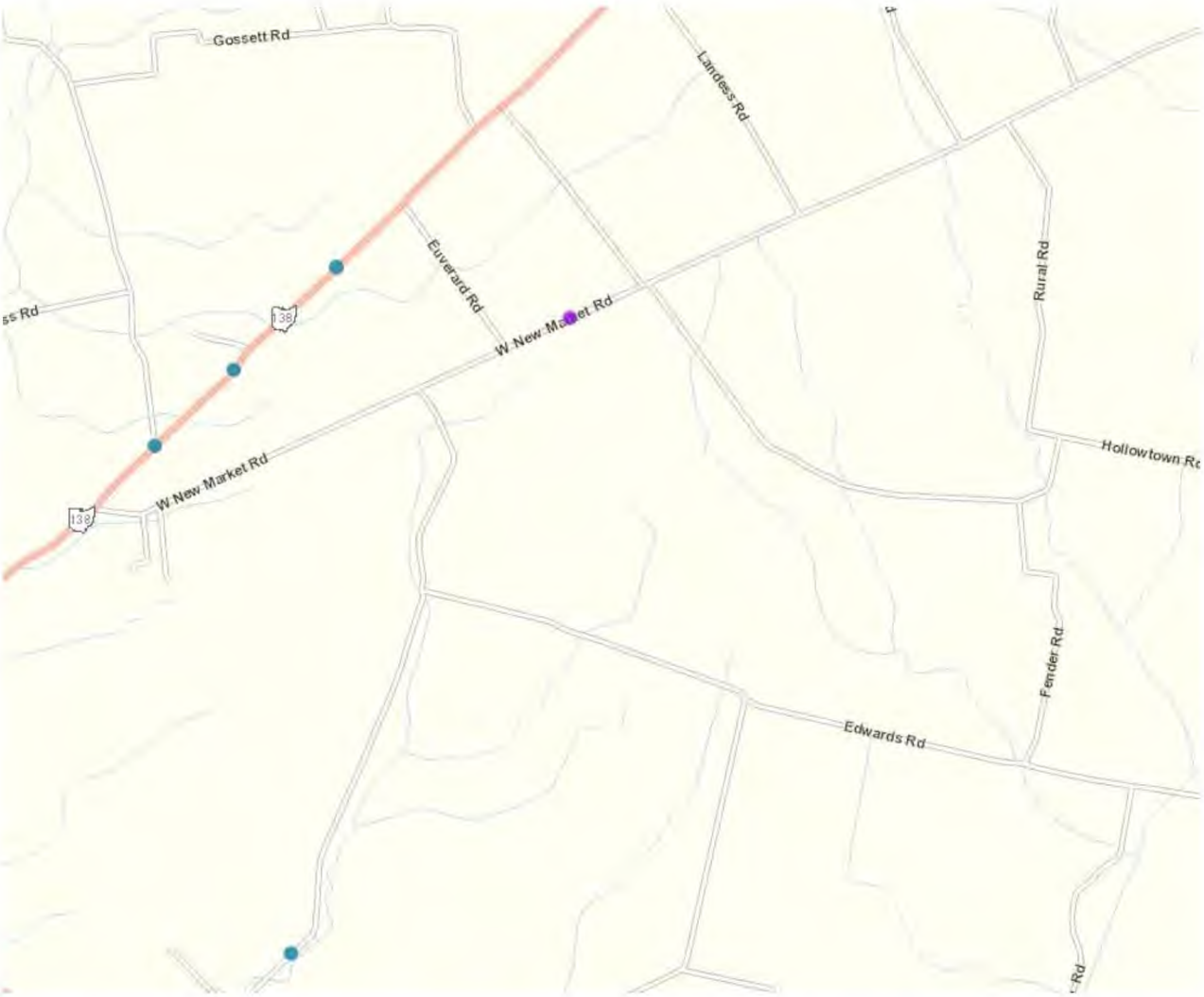
APPENDIX C

New Market Solar II, 35 MW Site Existing Accident Data Table
8/23/2020

Route/Road Name		From	To	Town	Total Recorded Accidents 2017 - 2019	Average Accidents Per Year	Intersection Accidents	Non-Intersection Accidents	Fatal Accidents	Length of Road (miles)	AADT*	Accident Rate (Accidents/Million Vehicle Miles)	Fatal Accident Rate (Fatal Accidents/Million Vehicle Miles)	Ohio Statewide Avg. Fatal Accident Rate 2018 (Fatal Accidents/100 Million Vehicle Miles)
County Highway 5	New Market Road	SR 138	Hollowtown Road	Buford	2	0.67	1	1	0	2.10	549	1.58	0.00	0.93
County Highway 24	Hollowtown Road	SR 138	New Market Road	Buford	1	0.33	1	0	0	0.78	NA	NA	0.00	0.93
County Highway 2	Gath Road	New Market Road	Gath Road	Buford	0	0.00	0	0	0	2.10	217	0.00	0.00	0.93
County Highway 56	Edwards Road	Gath Road	Stringtown Road	Buford	0	0.00	0	0	0	1.17	NA	NA	0.00	0.93
County Highway 60	Stringtown Road	Edwards Road	Stringtown Road	Buford	0	0.00	0	0	0	0.39	NA	NA	0.00	0.93

New Market Solar II, 35 MW Site – Accident Data

2017 Crash Data



Legend

https://gis.dot.state.oh.us/tims/map

- PDO / No Injury
- Possible Injury
- Visible Injury
- Serious Injury
- Fatal Injury

New Market Solar II, 35 MW Site – Accident Data

2018 Crash Data

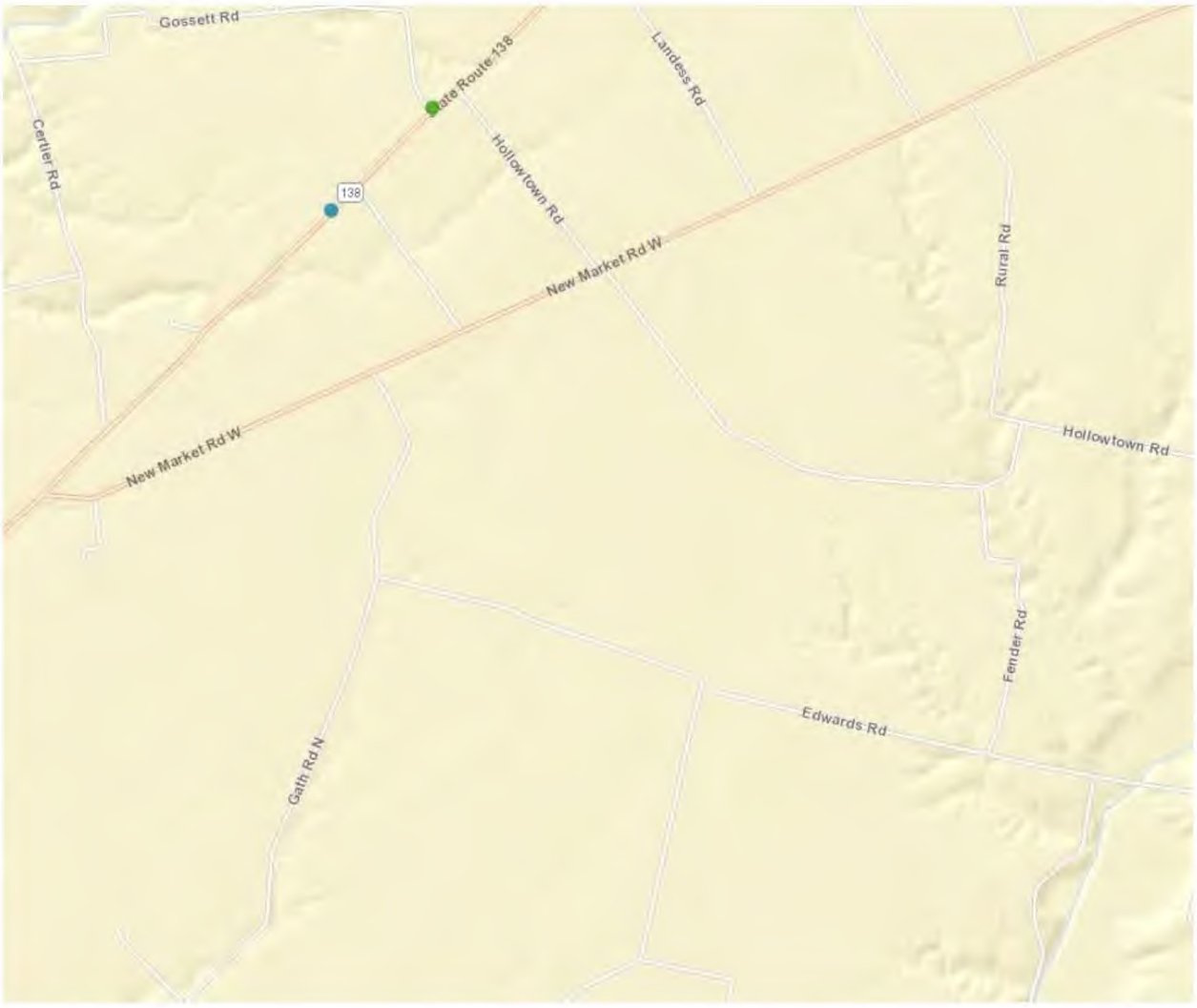
Legend

https://gis.dot.state.oh.us/tims/map

- PDO / No Injury
- Possible Injury
- Visible Injury
- Serious Injury
- Fatal Injury

New Market Solar II, 35 MW Site – Accident Data

2019 Crash Data



Legend

https://gis.dot.state.oh.us/tims/map

- PDO / No Injury
- Possible Injury
- Visible Injury
- Serious Injury
- Fatal Injury

Fatality Facts 2018
State by state

Overview

The number and types of motor vehicle crash deaths differ widely among the 50 states and the District of Columbia. A state's population has an obvious effect on the number of motor vehicle deaths. Fatality rates per capita and per vehicle miles traveled provide a way of examining motor vehicle deaths relative to the population and amount of driving. However, many factors can affect these rates, including types of vehicles driven, travel speeds, rates of licensure, state traffic laws, emergency care capabilities, weather, and topography.

The following facts are based on analysis of data from the U.S. Department of Transportation's (https://www-fars.nhtsa.dot.gov) Fatality Analysis Reporting System (FARS).

Posted December 2019.

Fatal crash totals

There were 33,654 fatal motor vehicle crashes in the United States in 2018 in which 36,560 deaths occurred. This resulted in 11.2 deaths per 100,000 people and 1.13 deaths per 100 million miles traveled. The fatality rate per 100,000 people ranged from 4.4 in the District of Columbia to 22.2 in Mississippi. The death rate per 100 million miles traveled ranged from 0.54 in Massachusetts to 1.83 in South Carolina.[1] (#fn1)

Population, fatal motor vehicle crashes, motor vehicle crash deaths and motor vehicle crash death rates per state, 2018

State	Population	Vehicle miles traveled (millions)	Fatal crashes	Deaths	Deaths per 100,000 population	Deaths per 100 million vehicle miles traveled
Alabama	4,887,871	71,167	876	953	19.5	1.34
Alaska	737,438	5,487	69	80	10.8	1.46
Arizona	7,171,646	66,145	916	1,010	14.1	1.53
Arkansas	3,013,825	36,675	472	516	17.1	1.41

Population, fatal motor vehicle crashes, motor vehicle crash deaths and motor vehicle crash death rates per state, 2018

State	Population	Vehicle miles traveled (millions)	Fatal crashes	Deaths	Deaths per 100,000 population	Deaths per 100 million vehicle miles traveled
California	39,557,045	348,796	3,259	3,563	9.0	1.02
Colorado	5,695,564	53,954	588	632	11.1	1.17
Connecticut	3,572,665	31,596	276	294	8.2	0.93
Delaware	967,171	10,179	104	111	11.5	1.09
District of Columbia	702,455	3,691	30	31	4.4	0.84
Florida	21,299,325	221,816	2,915	3,133	14.7	1.41
Georgia	10,519,475	131,456	1,407	1,504	14.3	1.14
Hawaii	1,420,491	10,887	110	117	8.2	1.07
Idaho	1,754,208	17,709	212	231	13.2	1.30
Illinois	12,741,080	107,954	948	1,031	8.1	0.96
Indiana	6,691,878	81,529	774	858	12.8	1.05
Iowa	3,156,145	33,282	291	318	10.1	0.96
Kansas	2,911,505	32,190	366	404	13.9	1.26
Kentucky	4,468,402	49,544	664	724	16.2	1.46
Louisiana	4,659,978	50,045	716	768	16.5	1.53
Maine	1,338,404	14,784	128	137	10.2	0.93
Maryland	6,042,718	59,775	474	501	8.3	0.84
Massachusetts	6,902,149	66,772	343	360	5.2	0.54
Michigan	9,995,915	102,398	905	974	9.7	0.95
Minnesota	5,611,179	60,438	349	381	6.8	0.63
Mississippi	2,986,530	40,730	597	664	22.2	1.63
Missouri	6,126,452	76,595	848	921	15.0	1.20
Montana	1,062,305	12,700	168	182	17.1	1.43
Nebraska	1,929,268	20,975	201	230	11.9	1.10
Nevada	3,034,392	28,319	300	330	10.9	1.17
New Hampshire	1,356,458	13,776	134	147	10.8	1.07
New Jersey	8,908,520	77,539	525	564	6.3	0.73
New Mexico	2,095,428	27,288	350	391	18.7	1.43
New York	19,542,209	123,510	889	943	4.8	0.76
North Carolina	10,383,620	121,127	1,321	1,437	13.8	1.19
North Dakota	760,077	9,856	95	105	13.8	1.07
Ohio	11,689,442	114,474	996	1,068	9.1	0.93

Population, fatal motor vehicle crashes, motor vehicle crash deaths and motor vehicle crash death rates per state, 2018

State	Population	Vehicle miles traveled (millions)	Fatal crashes	Deaths	Deaths per 100,000 population	Deaths per 100 million vehicle miles traveled
Oklahoma	3,943,079	45,433	603	655	16.6	1.44
Oregon	4,190,713	36,848	450	506	12.1	1.37
Pennsylvania	12,807,060	102,109	1,103	1,190	9.3	1.17
Rhode Island	1,057,315	8,009	56	59	5.6	0.74
South Carolina	5,084,127	56,801	970	1,037	20.4	1.83
South Dakota	882,235	9,719	110	130	14.7	1.34
Tennessee	6,770,010	81,321	974	1,041	15.4	1.28
Texas	28,701,845	282,037	3,305	3,642	12.7	1.29
Utah	3,161,105	32,069	237	260	8.2	0.81
Vermont	626,299	7,346	60	68	10.9	0.93
Virginia	8,517,685	85,336	778	820	9.6	0.96
Washington	7,535,591	62,367	497	546	7.2	0.88
West Virginia	1,805,832	19,447	265	294	16.3	1.51
Wisconsin	5,813,568	65,885	530	588	10.1	0.89
Wyoming	577,737	10,438	100	111	19.2	1.06
U.S. total	327,167,434	3,240,323	33,654	36,560	11.2	1.13

Deaths by road user

In 2018, the types of motor vehicle crash deaths varied across states. For example, Wyoming had the highest percentage of deaths involving SUV and pickup occupants (49 percent) and a relatively low percentage of deaths involving car occupants (23 percent). In contrast, Vermont had the highest percentage of deaths involving car occupants (49 percent) and a relatively low percentage of deaths involving SUV and pickup occupants (26 percent). Hawaii reported relatively low proportions of fatalities for both cars (15 percent) and SUVs and pickups (15 percent), but a high percentage of motorcyclist deaths (29 percent) and the highest percentage of pedestrian deaths (36 percent). The District of Columbia had the highest percentage of crash deaths involving bicyclists (10 percent) and a high percentage involving pedestrians (35 percent) and motorcyclists (26 percent).

Motor vehicle crash deaths by road user type and state, 2018

*Total includes other and/or unknowns

Motor vehicle crash deaths by road user type and state, 2018

State	Car occupants		Pickup and SUV occupants		Large truck occupants		Motorcyclists		Pedestrians		Bicyclists		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Alabama	115	44	805	32	17	2	82	8	107	12	9	2	959
Alaska	22	28	25	31	1	1	12	15	14	18	0	0	80
Arizona	269	27	217	21	14	1	149	15	237	23	23	2	1,010
Arkansas	163	32	187	36	24	5	66	13	62	12	3	1	516
California	1,248	35	654	18	38	1	488	14	893	25	154	4	3,563
Colorado	186	29	210	33	12	2	103	16	89	14	22	3	632
Connecticut	125	43	49	17	5	2	49	17	60	20	1	0	294
Delaware	39	35	24	22	1	1	17	15	23	21	6	5	111
District of Columbia	7	23	1	3	0	0	8	26	11	35	3	10	31
Florida	1,009	32	562	18	42	1	574	18	704	22	160	5	3,133
Georgia	550	37	426	28	31	2	154	10	261	17	30	2	1,504
Hawaii	17	15	18	15	0	0	34	29	42	36	2	2	117
Idaho	76	33	72	31	7	3	38	16	17	7	2	1	231
Illinois	419	41	241	23	23	2	119	12	165	16	24	2	1,031
Indiana	357	42	198	23	19	2	117	14	114	13	22	3	858
Iowa	128	40	92	29	7	2	43	14	22	7	7	2	318
Kansas	139	34	148	37	11	3	64	16	29	7	5	1	404
Kentucky	298	41	214	30	14	2	95	13	73	10	10	1	724
Louisiana	248	32	214	28	10	1	79	10	164	21	28	4	768
Maine	60	44	40	29	0	0	23	17	7	5	2	1	137
Maryland	196	39	95	19	9	2	62	12	128	26	5	1	501
Massachusetts	129	36	75	21	4	1	59	16	78	22	4	1	360
Michigan	377	39	250	26	8	1	143	15	142	15	21	2	974
Minnesota	144	38	105	28	3	1	59	15	42	11	7	2	381
Mississippi	262	39	228	34	16	2	41	6	88	13	6	1	664
Missouri	367	40	286	31	22	2	113	12	95	10	2	0	921
Montana	48	26	85	47	4	2	21	12	15	8	2	1	182
Nebraska	88	38	77	33	11	5	23	10	24	10	0	0	230
Nevada	103	31	67	20	2	1	59	18	79	24	8	2	330
New Hampshire	52	35	47	32	3	2	28	19	9	6	2	1	147

*Total includes other and/or unknowns

Motor vehicle crash deaths by road user type and state, 2018

State	Car occupants		Pickup and SUV occupants		Large truck occupants		Motorcyclists		Pedestrians		Bicyclists		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
New Jersey	205	36	84	15	13	2	53	9	173	31	18	3	564
New Mexico	112	29	114	29	8	2	45	12	83	21	11	3	391
New York	301	32	163	17	8	1	149	16	262	28	29	3	943
North Carolina	567	39	372	26	21	1	191	13	225	16	18	1	1,437
North Dakota	25	24	49	47	2	2	16	15	6	6	2	2	105
Ohio	469	44	251	24	23	2	145	14	127	12	22	2	1,068
Oklahoma	236	36	207	32	25	4	91	14	60	9	16	2	655
Oregon	156	31	129	25	11	2	78	15	80	16	9	2	506
Pennsylvania	469	39	273	23	14	1	165	14	197	17	18	2	1,190
Rhode Island	18	31	12	20	0	0	18	31	7	12	1	2	59
South Carolina	389	38	285	27	16	2	141	14	165	16	23	2	1,037
South Dakota	50	38	44	34	4	3	16	12	10	8	0	0	130
Tennessee	402	39	284	27	17	2	168	16	136	13	8	1	1,041
Texas	1,160	32	1,191	33	98	3	416	11	612	17	69	2	3,642
Utah	86	33	69	27	8	3	47	18	36	14	3	1	260
Vermont	33	49	18	26	2	3	7	10	6	9	0	0	68
Virginia	349	43	200	24	22	3	100	12	118	14	12	1	820
Washington	186	34	139	25	5	1	80	15	102	19	16	3	546
West Virginia	107	36	90	31	10	3	39	13	22	7	5	2	294
Wisconsin	251	43	164	28	7	1	83	14	56	10	4	1	588
Wyoming	26	23	54	49	6	5	15	14	6	5	0	0	111
U.S. total	13,138	36	9,404	26	678	2	4,985	14	6,283	17	854	2	36,560

*Total includes other and/or unknowns

Crash types

Nationwide, 53 percent of motor vehicle crash deaths in 2018 occurred in single-vehicle crashes. Montana had the highest percentage of deaths in single-vehicle crashes (71 percent), while Nebraska had the highest percentage of deaths in multiple-vehicle crashes (57 percent).

Deaths by crash type and state, 2018

State	Single-vehicle		Multiple-vehicle		All crashes	
	Number	%	Number	%	Number	%
Alabama	514	54	439	46	953	100
Alaska	45	56	35	44	80	100
Arizona	581	58	429	42	1,010	100
Arkansas	285	55	231	45	516	100
California	1,956	55	1,607	45	3,563	100
Colorado	346	55	286	45	632	100
Connecticut	166	56	128	44	294	100
Delaware	55	50	56	50	111	100
District of Columbia	20	65	11	35	31	100
Florida	1,621	52	1,512	48	3,133	100
Georgia	831	55	673	45	1,504	100
Hawaii	72	62	45	38	117	100
Idaho	129	56	102	44	231	100
Illinois	528	51	503	49	1,031	100
Indiana	427	50	431	50	858	100
Iowa	143	45	175	55	318	100
Kansas	201	50	203	50	404	100
Kentucky	378	52	346	48	724	100
Louisiana	448	58	320	42	768	100
Maine	83	61	54	39	137	100
Maryland	260	52	241	48	501	100
Massachusetts	214	59	146	41	360	100
Michigan	460	47	514	53	974	100
Minnesota	188	49	193	51	381	100
Mississippi	367	55	297	45	664	100
Missouri	478	52	443	48	921	100
Montana	129	71	53	29	182	100
Nebraska	98	43	132	57	230	100
Nevada	173	52	157	48	330	100
New Hampshire	87	59	60	41	147	100
New Jersey	309	55	255	45	564	100
New Mexico	220	56	171	44	391	100
New York	562	60	381	40	943	100
North Carolina	745	52	692	48	1,437	100
North Dakota	53	50	52	50	105	100

Deaths by crash type and state, 2018						
State	Single-vehicle		Multiple-vehicle		All crashes	
	Number	%	Number	%	Number	%
Ohio	535	50	533	50	1,068	100
Oklahoma	300	46	355	54	655	100
Oregon	275	54	231	46	506	100
Pennsylvania	629	53	561	47	1,190	100
Rhode Island	36	61	23	39	59	100
South Carolina	573	55	464	45	1,037	100
South Dakota	82	63	48	37	130	100
Tennessee	543	52	498	48	1,041	100
Texas	1,840	51	1,802	49	3,642	100
Utah	137	53	123	47	260	100
Vermont	37	54	31	46	68	100
Virginia	470	57	350	43	820	100
Washington	325	60	221	40	546	100
West Virginia	154	52	140	48	294	100
Wisconsin	312	53	276	47	588	100
Wyoming	61	55	50	45	111	100
U.S. total	19,481	53	17,079	47	36,560	100

Alcohol involvement

Some states report blood alcohol concentration (BAC) for only a small percentage of passenger vehicle drivers. If BAC is missing for a driver, it is estimated by the U.S. Department of Transportation's multiple imputation model.[2 (#fn2)] However, BAC information is most precise in states that report a high percentage of crashes where BAC information is reported. In the following table, estimated percentages of fatally injured passenger vehicle drivers with BACs at or above 0.08 percent are shown only for states in which BAC reporting for fatally injured drivers was 70 percent or higher. Estimated percentages are based on known BAC when available and imputed BAC for the remaining drivers.

For the nation in 2018, BAC was reported for 65 percent of fatally injured passenger vehicle drivers. Reporting rates varied substantially, from a high of 100 percent (District of Columbia) to a low of 26 percent (Indiana).

Thirty-one states and the District of Columbia had BAC reporting rates of at least 70 percent. Among these states, Montana had the highest estimated percentage of fatally injured drivers with BACs of 0.08 percent or higher (45 percent) and West Virginia had the lowest (12 percent).

Estimated number and percent of fatally injured passenger vehicle drivers with BAC ≥ 0.08 percent by state, 2018

State	Total drivers killed	Drivers killed with known BAC results		Estimated drivers killed with BACs ≥ 0.08	
	Number	Number	%	Number	%
Alabama	566	325	57	‡	‡
Alaska	32	20	63	‡	‡
Arizona	353	219	62	‡	‡
Arkansas	280	202	72	73	26
California	1,369	896	65	‡	‡
Colorado	286	252	88	96	34
Connecticut	127	62	49	‡	‡
Delaware	46	37	80	16	34
District of Columbia	5	5	100	1	20
Florida	1,162	687	59	‡	‡
Georgia	754	397	53	‡	‡
Hawaii	26	21	81	9	34
Idaho	114	80	70	29	26
Illinois	509	435	85	151	30
Indiana	435	115	26	‡	‡
Iowa	180	107	59	‡	‡
Kansas	229	70	31	‡	‡
Kentucky	401	286	71	74	18
Louisiana	363	312	86	108	30
Maine	78	64	82	18	23
Maryland	210	159	76	48	23
Massachusetts	169	153	91	56	33
Michigan	483	257	53	‡	‡
Minnesota	193	169	88	56	29
Mississippi	378	177	47	‡	‡
Missouri	505	389	77	124	25
Montana	108	94	87	48	45

‡ Cells with missing data have insufficient reporting of results for reliably estimating percent of fatally injured drivers with BACs ≥ 0.08 Percent.

Estimated number and percent of fatally injured passenger vehicle drivers with BAC ≥ 0.08 percent by state, 2018

State	Total drivers killed	Drivers killed with known BAC results		Estimated drivers killed with BACs ≥ 0.08	
	Number	Number	%	Number	%
Nebraska	115	88	77	33	28
Nevada	134	93	69	‡	‡
New Hampshire	80	75	94	22	27
New Jersey	210	171	81	56	27
New Mexico	158	113	72	47	30
New York	359	239	67	‡	‡
North Carolina	724	354	49	‡	‡
North Dakota	56	47	84	17	30
Ohio	569	464	82	147	26
Oklahoma	351	318	91	69	20
Oregon	199	140	70	54	27
Pennsylvania	584	302	52	‡	‡
Rhode Island	21	17	81	7	35
South Carolina	542	384	71	163	30
South Dakota	68	60	88	25	37
Tennessee	518	242	47	‡	‡
Texas	1,760	883	50	‡	‡
Utah	110	96	87	28	25
Vermont	37	33	89	10	27
Virginia	437	377	86	135	31
Washington	237	193	81	73	31
West Virginia	148	130	88	18	12
Wisconsin	328	275	84	116	35
Wyoming	62	25	40	‡	‡
U.S. total	17,168	11,109	65	4,946	29

‡ Cells with missing data have insufficient reporting of results for reliably estimating percent of fatally injured drivers with BACs ≥ 0.08 Percent.

Restraint use

Based on daytime observational surveys conducted by the states, the nationwide rate of seat belt use among front seat passenger vehicle occupants in 2018 was 90 percent. The state with the highest observed seat belt use for front seat occupants was Hawaii, at 98 percent, while the lowest was New Hampshire at 76 percent.[3 (#fn3)]

Rates of restraint use among fatally injured motor vehicle occupants will be lower than the overall observed restraint use rate because unrestrained occupants are more likely than restrained ones to be fatally injured in a crash. Restrained fatally injured occupants include occupants in child safety seats and occupants restrained by seat belts. In 2018, fatally injured occupants were approximately half as likely to have been restrained compared with the nationwide average. California had the highest restraint use percentage among fatally injured occupants at 61 percent. New Hampshire had the lowest restraint use among fatally injured occupants at just 28 percent.

Rates of observed daytime front-seat belt use and number and percent of fatally injured passenger vehicle occupants by restraint use and state, 2018

State and percent of observed seat belt use		Restrained fatally injured occupants		Unrestrained fatally injured occupants		Unknown restraint status of fatally injured occupants		Total fatally injured passenger vehicle occupants
		Number	%	Number	%	Number	%	Number
Alabama	**92**	301	42	359	50	63	9	723
Alaska	**92**	20	43	22	47	5	11	47
Arizona	**86**	197	39	235	47	69	14	501
Arkansas	**78**	144	41	178	51	30	9	352
California	**96**	1,170	61	594	31	160	8	1,924
Colorado	**86**	172	43	216	54	15	4	403
Connecticut	**92**	76	43	69	39	32	18	177
Delaware	**92**	29	46	33	52	1	2	63
District of Columbia	**95**	3	38	1	12	4	50	8
Florida	**91**	844	53	703	44	45	3	1,592
Georgia	**96**	448	45	442	44	105	11	995
Hawaii	**98**	12	33	15	42	9	25	36
Idaho	**85**	59	38	82	53	13	8	154
Illinois	**95**	330	49	249	37	96	14	675
Indiana	**93**	272	48	214	38	79	14	565
Iowa	**94**	120	54	78	35	26	12	224
Kansas	**84**	133	46	130	45	25	9	288
Kentucky	**90**	236	46	281	54	0	0	517
Louisiana	**87**	212	45	223	47	36	8	471

Rates of observed daytime front-seat belt use and number and percent of fatally injured passenger vehicle occupants by restraint use and state, 2018

State and percent of observed seat belt use		Restrained fatally injured occupants		Unrestrained fatally injured occupants		Unknown restraint status of fatally injured occupants		Total fatally injured passenger vehicle occupants
		Number	%	Number	%	Number	%	Number
Maine	**89**	51	50	50	50	0	0	101
Maryland	**90**	159	54	104	36	29	10	292
Massachusetts	**82**	65	31	103	49	42	20	210
Michigan	**93**	354	55	182	28	104	16	640
Minnesota	**92**	123	48	84	33	47	19	254
Mississippi	**80**	208	42	281	57	5	1	494
Missouri	**87**	233	35	385	58	46	7	664
Montana	**87**	45	33	87	64	3	2	135
Nebraska	**86**	57	35	88	53	20	12	165
Nevada	**92**	89	51	77	45	7	4	173
New Hampshire	**76**	29	28	71	70	2	2	102
New Jersey	**95**	159	53	126	42	13	4	298
New Mexico	**90**	90	39	116	51	23	10	229
New York	**93**	259	55	153	33	57	12	469
North Carolina	**91**	522	54	395	41	44	5	961
North Dakota	**83**	29	39	37	49	9	12	75
Ohio	**85**	321	44	334	46	77	11	732
Oklahoma	**86**	205	46	209	46	36	8	450
Oregon	**96**	156	54	76	26	57	20	289
Pennsylvania	**89**	266	35	386	51	104	14	756
Rhode Island	**89**	13	43	13	43	4	13	30
South Carolina	**90**	318	47	332	49	33	5	683
South Dakota	**79**	29	31	60	63	6	6	95
Tennessee	**91**	345	50	293	42	52	8	690
Texas	**91**	1,241	52	946	40	200	8	2,387
Utah	**89**	87	55	50	32	20	13	157
Vermont	**90**	20	39	29	57	2	4	51
Virginia	**84**	255	46	296	53	6	1	557
Washington	**93**	186	56	109	33	39	12	334
West Virginia	**91**	94	47	72	36	33	17	199
Wisconsin	**89**	204	48	158	38	59	14	421
Wyoming	**86**	33	40	43	52	7	8	83

Rates of observed daytime front-seat belt use and number and percent of fatally injured passenger vehicle occupants by restraint use and state, 2018								
State and percent of observed seat belt use		Restrained fatally injured occupants		Unrestrained fatally injured occupants		Unknown restraint status of fatally injured occupants		Total fatally injured passenger vehicle occupants
		Number	%	Number	%	Number	%	Number
U.S. total	**90**	11,023	48	9,869	43	1,999	9	22,891

Rural versus urban

Nationwide, 45 percent of motor vehicle crash deaths in 2018 occurred in rural areas. The states with the highest percentage of crash deaths on rural roads were South Dakota (90 percent), Vermont (88 percent), and North Dakota (87 percent). The states with the lowest percentage were New Jersey (8 percent) Massachusetts (10 percent), and Connecticut (13 percent). The District of Columbia had 0 crash deaths in rural areas because its entirety is coded as an urban area.

Number and percent of motor vehicle crash deaths by land use and state, 2018							
State	Urban		Rural		Unknown		Total
	Number	%	Number	%	Number	%	Number
Alabama	412	43	541	57	0	0	953
Alaska	39	49	41	51	0	0	80
Arizona	680	67	318	31	12	1	1,010
Arkansas	210	41	306	59	0	0	516
California	2,490	70	1,072	30	1	<1	3,563
Colorado	373	59	259	41	0	0	632
Connecticut	252	86	39	13	3	1	294
Delaware	57	51	54	49	0	0	111
District of Columbia	31	100	0	0	0	0	31
Florida	1,860	59	724	23	549	18	3,133
Georgia	996	66	508	34	0	0	1,504
Hawaii	91	78	26	22	0	0	117
Idaho	63	27	168	73	0	0	231
Illinois	645	63	386	37	0	0	1,031
Indiana	333	39	524	61	1	<1	858
Iowa	64	20	254	80	0	0	318
Kansas	95	24	308	76	1	<1	404

Number and percent of motor vehicle crash deaths by land use and state, 2018

State	Urban		Rural		Unknown		Total
	Number	%	Number	%	Number	%	Number
Kentucky	208	29	515	71	1	<1	724
Louisiana	463	60	304	40	1	<1	768
Maine	19	14	117	85	1	1	137
Maryland	403	80	90	18	8	2	501
Massachusetts	323	90	36	10	1	<1	360
Michigan	566	58	407	42	1	<1	974
Minnesota	160	42	218	57	3	1	381
Mississippi	224	34	440	66	0	0	664
Missouri	409	44	512	56	0	0	921
Montana	28	15	154	85	0	0	182
Nebraska	59	26	171	74	0	0	230
Nevada	239	72	89	27	2	1	330
New Hampshire	69	47	78	53	0	0	147
New Jersey	509	90	45	8	10	2	564
New Mexico	158	40	231	59	2	1	391
New York	477	51	466	49	0	0	943
North Carolina	593	41	843	59	1	<1	1,437
North Dakota	14	13	91	87	0	0	105
Ohio	580	54	471	44	17	2	1,068
Oklahoma	225	34	429	65	1	<1	655
Oregon	178	35	328	65	0	0	506
Pennsylvania	660	55	524	44	6	1	1,190
Rhode Island	43	73	15	25	1	2	59
South Carolina	356	34	681	66	0	0	1,037
South Dakota	13	10	117	90	0	0	130
Tennessee	570	55	471	45	0	0	1,041
Texas	2,110	58	1,520	42	12	<1	3,642
Utah	165	63	93	36	2	1	260
Vermont	7	10	60	88	1	1	68
Virginia	346	42	471	57	3	<1	820
Washington	305	56	235	43	6	1	546
West Virginia	116	39	178	61	0	0	294
Wisconsin	199	34	386	66	3	1	588
Wyoming	14	13	96	86	1	1	111
U.S. total	19,499	53	16,410	45	651	2	36,560

Footnotes

1

Federal Highway Administration. 2019. Highway statistics, 2018. Washington, DC: US Department of Transportation.

(#fn1ref1)

2

Subramanian, R. 2002. Transitioning to multiple imputation — a new method to impute missing blood alcohol concentration (BAC) values in FARS. Report no. DOT HS-809-403. Washington, DC: National Highway Traffic Safety Administration.

(#fn2ref1)

3

National Highway Traffic Safety Administration. 2019. Seat belt use in 2018 — use rates in the states and territories. Report no. DOT HS-812-763. Washington, DC: U.S. Department of Transportation.

(#fn3ref1)

The Insurance Institute for Highway Safety (IIHS) is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from motor vehicle crashes

The Highway Loss Data Institute (HLDI) shares and supports this mission through scientific studies of insurance data representing the human and economic losses resulting from the ownership and operation of different types of vehicles and by publishing insurance loss results by vehicle make and model.

Both organizations are wholly supported by these auto insurers and insurance associations (about our member groups).

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Highland County
Annual Average Daily Traffic 2013

	2013 Annual Average Daily Traffic		12000 to 17000
	0 to 1000		Other Roads
	1000 to 3000		Municipalities
	3000 to 5000	A	Municipalities
	5000 to 7000		Townships
	7000 to 9500	A	Townships
	9500 to 12000		

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MIIES

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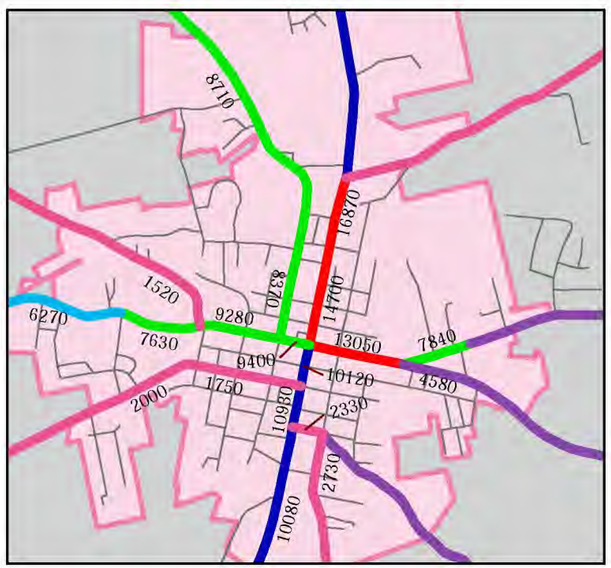
HIGHLAND
LEESBURG
GREENFIELD
MADISON
FAIRFIELD
PENN
UNION
LIBERTY
PAINT
LYNCHBURG
DODSON
HILLSBORO
HAMER
SALEM
NEW MARKET
MARSHALL
BRUSH CREEK
WASHINGTON
JACKSON
SINKING SPRING
CLAY
WHITE OAK
CONCORD
MOWRYSTOWN

Hillsboro



0.0 0.3 0.6 0.9 1.2 1.5 1.8
MIIES

Ohio Department of Transportation
Office of Technical Services
Traffic Monitoring Section
ODOT.TRAFFIC.COUNTS@DOT.STATE.OH.US
614-466-3728

GIS NAME	AVERAGE_DA	BORDER_BRG	BRIDGE_ROA	CTL_BEGIN_	CULVERTS	DECK_STRUC	DEFIC_FUNC	DESIGN_LOA	FACILITY_C	FEATURES_I	FUNCTIONAL	INVENTORY_	JURISDICTI	LENGTH_OF_	MAINT_RESP	NBI_RATING	STRUCTURE_	SUFF_RATIN	YEAR_BUILT	YEAR_RECON	YR_OF_AVE_
ONLINE NAME	AVERAGE DAILY TRAFFIC	BORDER BRG	BRIDGE ROAD WIDTH	CTL BEGIN NBR	CULVERTS	DECK STRUCTURE TYPE	DEFIC FUNC RAITING	DESIGN LOAD	FACILITY CARRIED BY STRUCT	FEATURES INTERSECTED	FUNCTIONAL CLASS	INVENTORY RATING	JURISDICTION	LENGTH OF MAXIMUM SPAN	MAINT RESPONSIBILITY	NBI RATING	STRUCTURE NBR	SUFF RATING	YEAR BUILT	YEAR RECONSTRUCTED	YR OF AVG DAILY TRAFFIC
	456		20	5.23 N		1	2		5 SR 321	TRIB OF E. FORK WHITE OAK	6	1000 S		10	1	Good	10	80.6	7/1/2006	<Null>	2015
	385		0	0.41	8 N			0 A	COUNTY RD #13	LICK RUN CREEK	7	1080 C		10	3	Good	12	100	8/20/2012	<Null>	2015
	2020		0	1.85	7 N			0	5 SR 138	RUBLE RUN	5	3000 S		12	1	Fair	12	99.5	7/1/1990	<Null>	2015
	324		0	0.62	8 N			0	4 TOWNSHIP RD #113	BRANCH OF BRUSH RUN	7	9999 T		10	3	Good	12	99.9	7/1/1999	<Null>	2015
	155		0	0.48	8 N			0 A	TOWNSHIP RD #221	LITTLE NORTH FORK CREEK	7	2180 T		10	3	Good	12	100	7/10/2010	<Null>	2015
	385		0	1.36	4 N			0	5 COUNTY RD #24	E FORK WHITEOAK CREEK	7	9999 C		13	3	Good	13	100	7/1/1987	<Null>	2015
	1016		0	3.49 A	N			0	5 SR 134	TRIB N FK WHITE OAK CREEK	5	1000 S		13	1	Fair	13	97.5	7/1/1983	<Null>	2015
	2020		0	0.54	5 N			0	6 SR 138	RUBLE RUN	5	1000 S		13	1	Fair	13	99.5	7/1/1965	<Null>	2015
	1870		0	5.26	5 N			0	5 COUNTYRD #20	STREAM	5	1000 C		14	3	Fair	14	88.4	7/1/1963	<Null>	2015
	96		0	0.68	8 N			0	4 TOWNSHIP RD #138	FLAT RUN	7	1000 T		12	3	Good	14	99.9	7/1/1999	<Null>	2015
	221		0	0.35	8 N			2	8 CR2 GATH RD.	BRANCH OF FLANT RUN	7	1610 C		14	3	Good	16	40.9	10/20/2014	<Null>	2012
	456		0	0.72	2 N			0	2 SR 321	TRIB OF RUBLE CREEK	6	1000 S		14	1	Good	16	99.8	7/1/1940	<Null>	2015
	456		0	0.89	2 N			0	2 SR 321	TRIB OF RUBLE CREEK	6	1000 S		14	1	Good	16	98.8	7/1/1940	<Null>	2015
	1377		0	4.69	5 N			0	5 SR 134	RUBLE RUN	5	1000 S		16.8	1	Fair	16.8	99.8	7/1/1958	8/15/1996	2015
	385		24	2.2 N		1		0	5 COUNTY RD #56	BRANCH WHITE OAK CREEK	7	2230 C		18	3	Fair	20	89.9	7/1/1976	<Null>	2015
	274		0	4.7	8 N			0	9 COUNTY RD #2	FLAT RUN CREEK	7	1300 C		23	3	Good	25	99.9	7/1/2007	<Null>	2015
	274		24	3.22 N		1		0	5 COUNTY RD #2	FLATRUN	7	2310 C		27	3	Good	30	89.8	7/1/1971	7/1/1991	2015
	351		20	0.1 N		1		0	9 TOWNSHIP RD #206	FLAT RUN	7	2360 T		29	3	Good	30	82.9	7/1/1984	<Null>	2015
	324		22	1.39 N		1		0	3 TOWNSHIP RD #139	FLAT RUN	7	2220 T		31	3	Fair	33	84.4	7/1/1984	7/1/2002	2015
	302		28	0.96 N		1		0	6 COUNTY RD #2	FLATRUN	7	2360 C		38	3	Good	40	99.9	7/1/2002	<Null>	2015
	385		24	1.69 N		1		0	5 COUNTY RD. #62	BRANCH E FORK WHITEOAK CK	7	2300 C		48	3	Fair	52	89.9	7/1/1982	7/1/1997	2015
	96		24	1.59 N		1		0	9 TOWNSHIP RD #138	FLAT RUN CREEK	7	2360 T		53	3	Good	55	100	7/1/2007	<Null>	2015
	456		30	2.21 N		1		0 A	ST RT 321	FLAT RUN	6	1000 S		54	1	Good	57	99.9	7/1/2013	<Null>	2015
	456		30	4 N		1		0 A	ST RT 321	BELLS RUN	6	1500 S		54	1	Good	57	100	7/1/2013	<Null>	2015
	155		20	0.13 N		1		0	5 TOWNSHIP RD #206	LITTLE N FORK WHITEOAK CK	7	2360 T		70	3	Good	72	83.5	7/1/1983	<Null>	2015
	153		24	3.64 N		1		0	5 COUNTY RD #43	NORTH FORK WHITEOAK CREEK	7	1460 C		70	3	Fair	73	91.5	7/1/1978	<Null>	2015
	78		23.6	2.57 N		1		0	6 TOWNSHIP RD #210	N FORK WHITE OAK CREEK	7	2380 T		24	3	Good	80	99	7/1/2001	<Null>	2015
	78		22	0.94 N	N			0	6 TOWNSHIP RD #210	WHITE OAK CREEK	7	3000 T		40	3	Good	118	99	7/1/2001	<Null>	2015
	385		28	1.4 N	N			0	6 COUNTY RD #13	NORTH FORK WHITE OAK CK	7	2340 C		45	3	Good	120	99.9	7/1/1997	<Null>	2015
	1870		38	5.63 N		1		0	5 COUNTY RD #20	EAST FORK WHITEOAK CREEK	5	2690 C		46	3	Fair	127	90.5	7/1/1987	<Null>	2015
	1146		32	6.02 N		1		0	9 ST RT 134	N FORK WHITE OAK CREEK	5	1250 S		55	1	Good	142	98.7	10/24/2014	<Null>	2015
	1870		32	1.36 N		1		0 A	COUNT RD #39	WHITE OAK CREEK	5	2960 C		84	3	Good	143	98.8	5/1/2012	<Null>	2015

APPENDIX D

Area of Concern 1- New Market Road

24 inch concrete patch depressed in road.

Area of Concern 2- Gath Road

. . . .

Area of Concern 3- Hollowtown Road

Shallow cover over existing elliptical concrete pipe.

APPENDIX E

New Market Solar II, 35 MW Site - Truck Load Estimation
August-20

Solar Panel Truck Estimation

Solar Panels Assumed for Project	123084
# Solar Panels/Truck	648
Trucks Needed for Solar Panel Delivery	**190 trucks**

Notes/Assumptions:

1. Panels are assumed to be 72-cell modules (JKM400M072L-V).
2. Number of solar panels was taken from drawing HIGHLAND-GA-003.

Gravel Truck Estimation

Length of Access Road	46902 ft
Width of Access Road	20 ft
Depth of Aggregate for Access Road	0.5 ft
Volume of Access Road Aggregate	469020 cf
Total Gravel Volume of All Access Roads	17371 cy
Trucks Needed for Gravel Delivery	**1448 trucks**

Notes/Assumptions:

1. For consistency of calculations, paved roads were assumed to use the same gravel section as stone roads.
2. Assumed 12 cy/truck for gravel delivery.

Other Facilities Truck Estimation

Length of Fencing	18663 ft
Linear Feet per Truck	10000
Trucks Needed for Fencing	**5 trucks**
Other Facilities	**130 trucks**

Notes/Assumptions:

1. Assuming three trucks will be necessary for posts and gates.
2. Number of trucks assumed for other facilities is based off of the assumption from other solar projects that solar panels make up 60% of non-aggregate/earthwork number of trucks needed for project.

Total Estimation of Trucks for Project	**1772 trucks**

DUE TO THE HIGH NUMBER OF ACCESS ROADS, THE NEW MARKET SOLAR II, 35 MW SITE PROJECT WE ESTIMATE THAT THERE WILL BE BETWEEN 1,550 AND 1,850 TRUCKS FOR THE PROJECT, WITH THE VAST MAJORITY OF HAULING OCCURING DURING ACCESS ROAD CONSTRUCITON AND PAVING ACTIVITIES.


FISHER
ASSOCIATES

#10

ROADWAY USE, REPAIR AND MAINTENANCE AGREEMENT

THIS ROADWAY USE, REPAIR AND MAINTENANCE AGREEMENT ("AGREEMENT"), is made and entered into this 10th day of March, 2021, by and between the **HIGHLAND COUNTY ENGINEER ("COUNTY ENGINEER"), HIGHLAND COUNTY COMMISSIONERS ("COUNTY")**, and **HECATE ENERGY HIGHLAND 2, LLC ("HECATE")** whose address for purposes of this **AGREEMENT** is 621 W. Randolph Street, Suite 200, Chicago, IL 60661 (hereinafter referred to individually as a **"PARTY"** or collectively, as the **"PARTIES"**).

RECITALS

Whereas, **HECATE** plans to construct, operate and maintain a 35 megawatt (MW) solar-powered electric generating facility to be located on 292 acres in Highland County (**"NEW MARKET SOLAR II"**). **HECATE** currently has pending an application for a certificate of environmental compatibility and public need from the Ohio Power Siting Board to do so. This **AGREEMENT** is limited to **NEW MARKET SOLAR II**.

Whereas, **HECATE** is also seeking qualification of **NEW MARKET SOLAR II** for the exemption from taxation of tangible personal property and real property under R.C. 5727.75.

Whereas, R.C. 5727.75(F)(4) requires that **HECATE** repair all roads, bridges, and culverts affected by construction as reasonably required to restore them to their preconstruction condition, as determined by the **COUNTY ENGINEER** in consultation with the local jurisdiction responsible for the roads, bridges, and culverts; in the event that the **COUNTY ENGINEER** deems any road, bridge, or culvert to be inadequate to support the construction or decommissioning of the energy facility, the road, bridge, or culvert shall be rebuilt or reinforced to the specifications established by the **COUNTY ENGINEER** prior to the construction or decommissioning of the facility.

Whereas, R.C. 5727.75(F)(4) also requires that **HECATE** shall post a bond in an amount established by the **COUNTY ENGINEER** and to be held by the board of county commissioners to ensure funding for repairs of roads, bridges, and culverts affected during the construction.

Whereas, the **PARTIES** desire to address **HECATE's** obligations under the Ohio Revised Code as well as certain issues relating to the use by **HECATE** and **HECATE's** suppliers and contractors, their respective subcontractors and its and their respective employees, agents and other representatives (**"REPRESENTATIVES"**) in connection with the construction of **NEW MARKET SOLAR II** and use of any roads, bridges, and culverts owned, operated and maintained by the **COUNTY** within Highland County.

The roads and the portion of those roads to be used for **NEW MARKET SOLAR II** that are the subject of this **AGREEMENT** are identified in Exhibit A to this **AGREEMENT** and are the same portions of those roads identified in the Transportation Effect and Route Evaluation Study (**"ROAD STUDY"**) attached as Exhibit B prepared by Fisher and Associates, on behalf of **HECATE**, as a part of **HECATE's** application for a certificate of environmental compatibility and public need for **NEW MARKET SOLAR II**, as well as the update of that **ROAD STUDY** (**"DESIGNATED ROADS"**).

Whereas, in connection with the development, construction, operation, or maintenance of **NEW MARKET SOLAR II**, it may be necessary for **HECATE** and its **REPRESENTATIVES** to:

1.) transport heavy and/or oversized equipment and materials over designated haul routes on roads located in the **COUNTY**, which may in certain cases be in excess of the design limits of such roads;
2.) transport certain locally sourced materials, such as water and gravel etc., on such roads;
3.) widen such roads and make certain permanent modifications and improvements to such roads (including to certain culverts, bridges, road shoulders, crest corrections, and other related fixtures) to permit such equipment and materials to pass; and
4.) encroach within the **COUNTY'S** established and recorded maintenance rights-of-way.

Whereas, the **COUNTY** has exclusive authority and control over county roads, and agrees to permit the above activities on the terms and conditions set forth herein and hereby acknowledge and agree that the **COUNTY ENGINEER** shall act on behalf the **COUNTY** with respect to implementation of the terms and conditions of this **AGREEMENT.**

1. ROADWAYS

1.1 PRIOR CONDITIONS OF ROADS

1.1.1. Prior to the start of construction, **HECATE**, at its own expense, will conduct a detailed video record of road integrity along the **DESIGNATED ROADS** to confirm whether conditions have changed since the **ROAD STUDY** was conducted. **HECATE** will create a detailed video record of the pre-existing condition of such **DESIGNATED ROADS**. **HECATE** will update the **ROAD STUDY**, as needed, and deliver the **ROAD STUDY** and video record to the **COUNTY ENGINEER**. To the extent to which any **DESIGNATED ROAD** is inadequate to support the construction of **NEW MARKET SOLAR II , HECATE** shall include, in the updated **ROAD STUDY**, any recommendations regarding the rebuilding or reinforcement of such **DESIGNATED ROAD.** The **COUNTY ENGINEER** shall review the updated **ROAD STUDY** and detailed video record and, as promptly as possible and in no event later than thirty (30) days of receipt, provide his approval or approval with modifications of any recommendations, which approval shall not be unreasonably withheld, conditioned, or delayed.

1.2 PRE-CONSTRUCTION PROJECT ROAD IMPROVEMENTS

1.2.1. If, as a result of the updated **ROAD STUDY, HECATE** and the **COUNTY ENGINEER** have determined that improvements need to be made prior to the use of all or a portion of **DESIGNATED ROADS, HECATE** shall make or cause such improvements to be made. **HECATE** shall not commence any improvement to such **DESIGNATED ROADS** or use such **DESIGNATED ROADS** for operation of a motor vehicle or other equipment otherwise requiring an overweight/oversized permit until such approval or approval with modifications of any recommendations from the **COUNTY ENGINEER** is received. The **COUNTY** hereby acknowledges and agrees and consents to **HECATE'S** completion of such modifications and permanent improvements to such **DESIGNATED ROADS** as approved by the **COUNTY ENGINEER.** Such modifications and permanent improvements may include the widening of certain roads, the strengthening and/or spanning to existing culverts and bridges, and other improvements and modifications reasonably necessary to accommodate the heavy equipment and materials to be transported on the **DESIGNATED ROADS**.

1.2.2. **HECATE** agrees that any modifications and improvements to **DESIGNATED ROADS,** including any temporary turning radius, corner or intersection widening, intersections or corner improvements, shall comply with all applicable engineering standards and stamped engineering drawings that are submitted by **HECATE** to the **COUNTY ENGINEER** prior to the commencement of the modifications and improvements. The **COUNTY ENGINEER** agrees to provide a review of all submitted documents as promptly as possible but in no event later than thirty (30) days of receipt.

1.3 STATE OF OHIO – PREVAILING WAGE LAW

HECATE, or any representative hired by **HECATE**, will pay prevailing wages, as applicable, for road improvements, modifications, and repairs as set forth in R.C. 4115.03 through .16 when the total overall project cost to **HECATE** is fairly estimated to be more than the amount prescribed in R.C. 4115.03 (B)(4).

1.4 USE OF DESIGNATED ROADS BY HECATE

1.4.1 In connection with the development, construction, operation and maintenance of **NEW MARKET SOLAR II ,** the **COUNTY ENGINEER** hereby acknowledges and agrees that **HECATE** may use the **DESIGNATED ROADS** at any time, seven days a week, 365 days a year, beginning March 15, 2021and for the duration of the development, construction, operation, and maintenance of **NEW MARKET SOLAR II**. However, **HECATE** agrees that it will endeavor, to the extent practical, to use **DESIGNATED ROADS** in a manner and at times that will minimize the impact to and inconvenience to the traveling public. Such use may include the movement and transportation of overweight and oversized vehicles, equipment, water, loads and other necessary equipment and materials to and from **NEW MARKET SOLAR II**. If **HECATE** desires to use a portion of other roads for construction not already designated, **HECATE** shall submit a further update to its **ROAD STUDY** to the **COUNTY ENGINEER** that shall include such additional roads to be included as **DESIGNATED ROADS** for approval by the **COUNTY ENGINEER.** To the extent appropriate, the detailed video record shall be supplemented before use of the newly added sections of roads begins. Said sections of roads will be improved under Section 1.2, if necessary.

1.4.2. **HECATE** is required to request an overweight/oversized vehicle from the **COUNTY ENGINEER** if applicable, unless such travel will be on a **DESIGNATED ROAD** in which case this **AGREEMENT** shall provide the necessary authorization to **HECATE** and its **REPRESENTATIVES** for such transport.

1.5 THAW LOAD REDUCTION SECTION

1.5.1. Once the above described work is completed and accepted, the **COUNTY** agrees to waive the frost law requirements in regards to requiring overload permits and limited travel on the **DESIGNATED ROADS** during the late winter and early spring.

1.6 DAMAGES AND REPAIRS

1.6.1. In the event that any **DESIGNATED ROAD** or related appurtenances, including bridges, culverts, signage, or other road fixtures, or any **COUNTY** owned drainage tile or open ditch, is damaged by **HECATE** or its **REPRESENTATIVES**, **HECATE** shall repair (or caused

to be repaired) such damage as reasonably required to return the **DESIGNATED ROAD** or related appurtenance to the condition existing immediately prior to such damage occurring and subject to standards reasonably agreed to by the **COUNTY ENGINEER** and **HECATE** (which shall be based upon Ohio Department of Transportation's Construction and Material specifications latest edition) and the **COUNTY'S** specifications ("Applicable Specifications"). Subject to considerations of safety, the presence of emergency conditions, and the costs of such repairs, any repair and restoration shall commence and be completed promptly by **HECATE.** Following completion of such repair, the **COUNTY ENGINEER** and **HECATE** shall jointly inspect the repair to confirm that it has been completed in accordance with Applicable Specifications. Damages to any **COUNTY** owned drainage or open ditch may also include damages occurring within the **COUNTY** maintenance right-of-way, if such damages deny, impede, or affect the **COUNTY'S** ability to exercise drain maintenance within its right-of-way and results in additional costs to the **COUNTY**. The **COUNTY ENGINEER** and **COUNTY** acknowledge and agree that **HECATE** is not responsible for any damage to **DESIGNATED ROADS** not caused by **HECATE** or its **REPRESENTATIVES.**

1.7 EXCESSIVE DAMAGES

1.7.1. If during the **NEW MARKET SOLAR II** site construction, road damage becomes excessive in nature as to any portion of the **DESIGNATED ROADS, HECATE** will make additional improvements to strengthen the road base and surface immediately upon written notice from the **COUNTY ENGINEER**. All use of such portions of the **DESIGNATED ROADS** will cease until repairs are done to correct the problem. Excessive damages are defined as those damages that are not yet an emergency damage but could become a hazard or cause a safety issue to the travelling public if left in their current state.

1.8 EMERGENCY REPAIRS

1.8.1. If during the **NEW MARKET SOLAR II** site construction, **HECATE** or its **REPRESENTATIVES** are reasonably believed by the **COUNTY ENGINEER** to have caused damage to any road(s) of a magnitude sufficiently great to create a hazard to the travelling public, which in the good faith opinion of the **COUNTY ENGINEER** warrants an immediate repair or road closing, the **COUNTY ENGINEER** shall notify **HECATE**, in writing, of the damage. If **HECATE** fails to begin such repair work within twenty-four (24) hours of the receipt of written notice (as evidenced by tracking or written acknowledgement of receipt) from the **COUNTY ENGINEER**, the **COUNTY ENGINEER** may unilaterally make or authorize repair to the road(s) and the costs incurred by the **COUNTY** may be paid by **HECATE** or drawn against the Performance Assurance Bond, subject to the conditions set forth in Section 2.7 as set forth below. The **COUNTY ENGINEER** shall photograph or videotape and otherwise document the conditions and make all such documentation available to **HECATE.**

1.9 COMPLETION OF PROJECT

1.9.1. After completion of the construction of **NEW MARKET SOLAR II**, and upon written notice from **HECATE** that **NEW MARKET SOLAR II** is complete, the **COUNTY ENGINEER** will inspect the **DESIGNATED ROADS** for road damage caused by **HECATE** during the **NEW MARKET SOLAR II** construction period including damage to road base, culverts, bridges, ditches, guardrails, signs or other road appurtenances. The **COUNTY ENGINEER** will provide a written list of damages to **HECATE. HECATE** shall make or cause to be made the necessary repairs in accordance with Applicable Specifications. **HECATE** will

notify the **COUNTY ENGINEER** when repairs are to be made and the name of the contractor performing such repairs.

1.9.2. **HECATE** shall provide a written notice to the **COUNTY ENGINEER** that the repair work has been completed. The above repairs shall be made in accordance with Applicable Specifications, designed to return the final condition of the road surface to its the original pre-construction condition.

1.9.3. Upon receipt of the completion notice from **HECATE,** the **COUNTY ENGINEER** will have thirty (30) days to accept or reject the above work, which approval shall not be unreasonably withheld or conditioned. If a rejection notice is tendered by the **COUNTY ENGINEER** with the reasons for the rejection, **HECATE** will make the necessary repairs as identified in the rejection notice.

1.10 FAILURE TO REPAIR

1.10.1 **If HECATE** fails to repair any damage to **DESIGNATED ROADS** that **HECATE** is required by this **AGREEMENT** to repair, the **COUNTY ENGINEER** may request in writing that **HECATE** perform such repair. If **HECATE** fails to commence such repairs with thirty (30) days and thereafter to maintain reasonable progress in the performance of such repairs, then the **COUNTY ENGINEER** may make such repairs and shall invoice **HECATE** for costs incurred in connection with repairs. If **HECATE** has been delayed in commencing repairs within ten (10) days due to weather, **HECATE** may ask for an extension. **HECATE** shall pay such invoiced amounts within thirty (30) days following receipt of such invoice.

1.10.2. If **HECATE** does not fulfill its obligation to repair roads after the construction of **NEW MARKET SOLAR II** is completed, the **COUNTY ENGINEER** may draw against the Performance Assurance Bond, subject to the conditions set forth in Section 2.7 as set forth below.

2. BASIC TERMS OF DESIGNATED ROAD USE

2.1 OBEY ALL TRAFFIC LAW

2.1.1. All vehicles driven by **HECATE** or its **REPRESENTATIVES** shall abide by all local, state, and federal speed limits as posted or, if not posted, as otherwise applicable.

2.1.2. All vehicles driven by **HECATE** or its **REPRESENTATIVES** shall comply with all reasonable requests of the **COUNTY ENGINEER** to take necessary precautions designed to protect the traveling public. These precautions include the immediate removal of dirt, mud, and debris carried onto the said road by trucks and trailers hauling material to **NEW MARKET SOLAR II** Any road cleaning activity must be performed by **HECATE** or its **REPRESENTATIVES** on an ongoing basis with or without notice from the **COUNTY ENGINEER.**

2.2 SIGNAGE

2.2.1. During construction of the **NEW MARKET SOLAR II** site, **HECATE** and its **REPRESENTATIVES** shall be responsible for placing and maintaining signage in compliance with applicable provisions of the Ohio Manual on Uniform Control Devices.

2.3 NOTICE OF ROAD CLOSURES

2.3.1. **HECATE** shall provide to the **COUNTY ENGINEER:**

1.) Notice of **DESIGNATED ROAD** closures (including time and expected duration) by fax and e-mail five (5) business days in advance of such closures; and
2.) **HECATE** shall designate a person to coordinate the transportation related activities of **HECATE** during construction of the project.

2.3.2. If the **COUNTY ENGINEER** objects to such road closures, he must notify **HECATE** within three (3) business days after he receives notice and current maps, and may object to such closure or limited access on grounds of public safety or substantial public inconvenience. The **PARTIES** shall cooperate reasonably to find an alternative to the planned closure or limited access or otherwise minimize disruption to **COUNTY** road traffic and the **HECATE** construction activities and schedule.

2.3.3. This **AGREEMENT** shall not prohibit the **COUNTY ENGINEER** from closing a road to any vehicle or equipment if such closing is authorized by law and is necessary for safety or is a temporary closing due to climatic conditions or an act of God or war.

2.4 WEIGHT OF VEHICLES

2.4.1. Vehicles used by **HECATE** and its **REPRESENTATIVES** weighing more than five (5) tons shall travel only on **DESIGNATED ROADS**.

2.5 DUST CONTROL

2.5.1. In the event that water alone is insufficient for fugitive dust control during construction of **NEW MARKET SOLAR II, HECATE** shall use a commercially recognized dust palliative to control the airborne dust created or contributed to by **HECATE** and its **REPRESENTATIVES** on gravel covered **DESIGNATED ROADS**. The **COUNTY ENGINEER** may provide a written request to **HECATE** for additional dust control measures. The measures must be consistent with all environmental laws and regulations of the state of Ohio.

2.5.2. The dust control measures required by this **AGREEMENT** and requested by the **COUNTY ENGINEER** shall be applied within twenty-four (24) hours of written notification.

2.6 PERFORMANCE ASSURANCE BOND

2.6.1. **HECATE** shall post a Performance Assurance Bond to cover the costs of any damages made to the **DESIGNATED ROADS** during construction **of NEW MARKET SOLAR II** . The Performance Assurance Bond shall be released not later than one (1) year after the repairs contemplated by Section 1.2, 1.8 and 1.9 are complete. The **COUNTY ENGINEER** may draw upon the Performance Assurance Bond only if and to the extent the draw conditions outlined in Section 2.7 below are met.

2.6.2. The amount of the bond shall be $200,000 of surety coverage per mile of the **DESIGNATED ROADS**.

2.6.3. The Performance Assurance Bond shall be a surety bond issued by a corporation licensed to do business in Ohio, made payable to the Highland County Board of County Commissioners. The Performance Assurance Bond shall remain in full force and effect during construction of **NEW MARKET SOLAR II** and continuing in full force and effect for one (1) year after the repairs are completed, consistent with R.C. 5727.75(F)(4). The Performance Assurance Bond is intended to provide the **COUNTY** with assurance that it will be paid by **HECATE** for its obligations under this **AGREEMENT**, but shall not in any way limit the amount of **HECATE'S** obligations or liabilities under this **AGREEMENT**.

2.7 DRAW CONDITIONS

2.7.1. The **COUNTY ENGINEER** may draw upon the Performance Assurance Bond only if and to the extent that **HECATE** fails or refuses to perform repairs, maintain reasonable progress in performing the repairs as determined by the **COUNTY ENGINEER** or to pay the costs of performing repairs required by Sections 1.2, 1.8 and 1.9 and such failure or refusal continues for more than thirty (30) days after notice in accordance with Section 4.5 and to the extent the **COUNTY ENGINEER** certifies the following:

1.) The **COUNTY ENGINEER** shall certify that all the following draw conditions have been met:
   a.) That the **COUNTY ENGINEER** has complied with the notice requirements under this **AGREEMENT** and written notice has in fact been received by **HECATE** (as evidenced by tracking or written acknowledgement of receipt); and
   b.) That **HECATE** has failed or refused to perform repairs or to pay the costs of performing repairs pursuant to this **AGREEMENT**; and
   c.) That the **COUNTY ENGINEER** has performed such work and/or had such work performed; and
   d.) That the **COUNTY ENGINEER** has incurred expenses for the performance of such work; and
   e.) The **COUNTY ENGINEER** has evidenced to **HECATE** the amount of such expenses.

2.7.2. If the **COUNTY ENGINEER** draws upon the Performance Assurance Bond, the **COUNTY ENGINEER** shall provide a full accounting of the amount of the draw(s) and the costs of repairs to **HECATE.**

2.7.3 Nothing in this **AGREEMENT** is intended to constitute a waiver by **HECATE** of any rights or remedies it may have for any breach by the **COUNTY ENGINEER** or the **COUNTY** of the terms of this **AGREEMENT**, including any wrongful draw against the Performance Assurance Bond.

3. COVENANTS OF THE COUNTY ENGINEER

3.1. The **COUNTY ENGINEER** shall perform his routine and regular maintenance of **DESIGNATED ROADS** and bridges and culverts thereon as required by the Ohio Revised Code.

3.2. Upon the request of **HECATE**, the **COUNTY ENGINEER** shall countersign a letter for use by **HECATE** evidencing: (1) whether the movement and transportation of overweight and oversized vehicles, equipment, loads and other necessary equipment and materials to and from

NEW MARKET SOLAR II have been properly permitted by the **COUNTY ENGINEER**; (2) that the Performance Assurance Bond has been received by the **COUNTY**; and (3) **HECATE'S** compliance with any other matter in this **AGREEMENT**.

4. GENERAL PROVISIONS

4.1 INDEMNITY AND HOLD HARMLESS AGREEMENT

4.1.1. **HECATE** shall indemnify, defend, and hold the **COUNTY ENGINEER** and the **COUNTY** harmless for any and all claims, demands, suits, actions, proceedings, or causes of actions brought against the **COUNTY ENGINEER** and **COUNTY**, its officers, affiliates, agents and employees of the foregoing for any judgments, liabilities, obligations, fines, penalties or expenses, including reasonable attorneys' fees and expenditures, resulting from personal injury, property damage, or damage to third persons, but only to the extent that such arise directly from the actions or omissions of **HECATE** and its **REPRESENTATIVES** in the course of performance or nonperformance by **HECATE** under or in connection with the **AGREEMENT**.

4.2 CONCURRENT USE OF DESIGNATED ROADS BY MULTIPLE PARTIES; DISPUTE RESOLUTION

4.2.1. Nothing in this **AGREEMENT** shall be construed to prevent **HECATE** from entering into any agreement with a third party who is using or will use any **DESIGNATED ROAD** or portion thereof subject to this **AGREEMENT** for the construction and operation of a solar-powered electric generating facility ("**THIRD PARTY**") to share the cost of any improvement or repair to **DESIGNATED ROADS** required by this **AGREEMENT**.

4.2.2. In the event that **HECATE** disputes that it is the cause of any damage or any excessive damage to **DESIGNATED ROADS** requiring repair under Sections 1.6 and 1.7 of this **AGREEMENT, HECATE** shall promptly notify the **COUNTY ENGINEER** of any such dispute or disagreement. Upon the receipt of such notification, the **COUNTY ENGINEER** shall call a meeting with those potentially liable to determine responsibility for such damage and an equitable allocation of repair costs. The **COUNTY ENGINEER** shall facilitate the discussion among the parties. The parties shall determine the allocation of repair costs amongst themselves and the repairs required to restore the road consistent with the Ohio Department of Transportation's Office of Pavement Engineering's Pavement Design Manual (January 2021). Within five (5) business days of the aforementioned meeting, or an appropriate extension granted by the **COUNTY ENGINEER**, the parties shall submit an assessment of liability and a proposed scope of work and schedule consistent with the Ohio Department of Transportation's Office of Pavement Engineering's Pavement Design Manual (January 2021) for approval, which shall not be unreasonably withheld by the **COUNTY ENGINEER.** In the event that **HECATE** and the third parties are unable to reach an agreement on the assessment of liability, the **COUNTY ENGINEER** may resort to the procedures outlined in this **AGREEMENT**.

4.3 GOVERNING LAW – STATE OF OHIO

This **AGREEMENT** shall be governed by, and construed in accordance with, the laws of the State of Ohio, without regard to the conflict of law provisions in such state.

4.4 AMENDMENTS TO AGREEMENT

This **AGREEMENT** shall constitute the complete and entire agreement between the **PARTIES** with respect to the subject matter hereof. No prior statement or agreement, oral or written, shall modify the written terms hereof. This **AGREEMENT** may be amended only by a written agreement signed by the **PARTIES**.

4. 5 NOTICES

All notices, requests, demands and other communications required or permitted to be given by the **PARTIES** hereunder shall be in writing and shall be delivered in person or by facsimile, or by first class certified mail, postage and fees prepaid, to the address of the intended recipient as set forth below. All notices, requests, demands and other communications shall be sent to the following addresses:

Hecate Energy Highland 2, LLC:	**Yuri Otarov, Project Manager** **354 Davis Road, Suite 100** **Oakville, ON, Canada L6J 2X1** **415-270-1334**
Highland County Board of Commissioners:	**Jeff Duncan, President** **119 Governor Foraker Place; Suite 211** **Hillsboro, OH 45133** **Office: 937-393-1911**
Highland County Engineer:	**Christopher M. Fauber P.E., P.S.** **P.O. Box 297** **138 Bowers Ae** **Hillsboro, OH 45133** **Office: 937-393-3496** **Cell: 937-763-3587**

The foregoing addresses may be changed by any **PARTY** by giving written notice to the other **PARTY** as provided above.

4.6 RIGHTS AND WAIVERS

The failure of a **PARTY** to exercise any right under this **AGREEMENT** shall not, unless otherwise provided or agreed to in writing, be deemed a waiver thereof; nor shall a waiver by a **PARTY** of any provisions hereof be deemed a waiver of any future compliance therewith, and such provisions shall remain in full force and effect.

4.7 SEVERABILITY

4.7.1. In any event that any clause, provision or remedy in this **AGREEMENT** shall, for any reason, be deemed invalid or unenforceable, the remaining clauses and provisions shall not be affected, impaired or invalidated and shall remain in full force and effect.

4.7.2. The status of **HECATE** under this **AGREEMENT** shall be that of an independent contractor and not that of an agent, and in accordance with such status, **HECATE** and its **REPRESENTATIVES** shall at all times during the term of this **AGREEMENT** conduct themselves in a manner consistent with such status and shall neither hold themselves out as, nor claim to be acting in the capacity of, officers, employees, agents, representatives or servants of the **COUNTY ENGINEER** or **COUNTY**.

4.7.3. As an independent contractor, **HECATE** shall accept full responsibility for providing to its employees all applicable statutory coverage for worker's compensation, unemployment, disability or other coverage required by law.

4.8. TERMINATION AND/OR ABANDONMENT BY HECATE PRIOR TO COMPLETION OF CONSTRUCTION

4.8.1. If **HECATE** abandons or terminates construction of **NEW MARKET SOLAR IIHECATE** shall provide written notice to the **COUNTY ENGINEER** of such abandonment or termination of construction.

4.8.2. As soon as possible after receipt of such notice, the **COUNTY ENGINEER** shall inspect said **DESIGNATED ROADS** appurtenances, including surrounding property. After final inspection of said **DESIGNATED ROADS**, the parties shall meet and all repairs that are required pursuant to the terms of this **AGREEMENT** shall be identified and thereafter completed by **HECATE** at **HECATE'S** sole expense. Following completion of all repair work, the **COUNTY ENGINEER** shall inspect and approve the same. Following approval by the **COUNTY ENGINEER**, this **AGREEMENT** shall be terminated, with the exception of the extension of the Performance Assurance Bond for one (1) year as provided for in this **AGREEMENT**. Any existing permits shall be terminated and shall no longer be in effect.

4.9 TERMINATION BY COUNTY OR COUNTY ENGINEER

4.9.1. This **AGREEMENT** may be terminated by the **COUNTY** or the **COUNTY ENGINEER** for any non-compliance with a material term of this **AGREEMENT**. If the **COUNTY** or the **COUNTY ENGINEER** wish to terminate this **AGREEMENT,** the **COUNTY ENGINEER** shall provide written notice to **HECATE** in accordance with Section 4.5 of its intent to terminate at least thirty (30) days in advance of said termination date. Written notice shall include notification of the default and the underlying factual circumstances in reasonable detail. If **HECATE** has not remedied the default within thirty (30) days of receipt of the written notice, or, if cure will take longer than thirty (30) days and **HECATE** has not begun diligently to undertake the cure then the **COUNTY** and **COUNTY ENGINEER** shall have the right to terminate the **AGREEMENT.**

4.9.2. **HECATE's** obligations under Sections 1.1 through 1.3, 1.6 through 1.10, and 2.6 shall survive the termination of this **AGREEMENT**, to the extent applicable.

IN WITNESS WHEREOF, the **PARTIES** hereto have executed this **AGREEMENT** the day and year first written above.

HECATE ENERGY HIGHLAND 2, LLC

By: _____
Name: Charles Ashman
Title: President

and

By: Steven Burns
Steven Burns (Mar 11, 2021 15:11 EST)
Name: Steve Burns
Title: Secretary and Treasurer

HIGHLAND COUNTY ENGINEER

By: _____
Name: Christopher M. Fauber, P.E., P.S.
Title: Highland County Engineer

HIGHLAND COUNTY BOARD OF COMMISSIONERS

By: _____
Name: Jeff Duncan
Title: Highland County Commissioner

By: _____
Name: Terry Britton
Title: Highland County Commissioner

By: _____
Name: David Daniels
Title: Highland County Commissioners

Exhibit A
New Market Solar II Designated Roads

Roadway Name	County	Total Road Length (ft)
County Highway 5	New Market Road	10,870'
County Highway 24	Hollowtown Road	4,110'
County Highway 2	Gath Road	10,870'
County Highway 56	Edwards Road	6,240'
County Highway 60	Stringtown Road	1,480'

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/25/2021 6:38:51 PM

in

Case No(s). 20-1288-EL-BGN

Summary: Notification Notice Regarding Compliance with Various Conditions electronically filed by Ms. Anna Sanyal on behalf of Hecate Energy Highland 4, LLC