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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:317-0452
eDEP Transaction #:1367233
City/Town:WARE

A. General Information

1. Conservation Commission WARE
2. Issuance a. ☑ OOC b. ☐ Amended OOC
3. Applicant Details
   a. First Name RODNEY b. Last Name GALTON
   c. Organization ECOS ENERGY, LLC
   d. Mailing Address 222 SOUTH 9TH STREET, SUITE 1600
   e. City/Town MINNEAPOLIS f. State MN g. Zip Code 55402
4. Property Owner
   a. First Name b. Last Name
   c. Organization PLH, LLC
   d. Mailing Address 222 SOUTH 9TH STREET #1600
   e. City/Town MINNEAPOLIS f. State MN g. Zip Code 55402
5. Project Location
   a.Street Address MONSON TURNPIKE ROAD
   b.City/Town WARE c. Zip Code 01082
   d. Assessors Map/Plat# 20-0-1 THROUGH e. Parcel/Lot# 20-1-62
   f. Latitude 42.26397N g. Longitude 72.31745W
6. Property recorded at the Registry of Deed for:

a. County	b. Certificate	c. Book	d. Page
HAMPSHIRE		13136	166

7.Dates
a. Date NOI Filed : 8/22/2018 b. Date Public Hearing Closed: 4/13/2022 c. Date Of Issuance: 4/27/2022

8.Final Approved Plans and Other Documents

a. Plan Title:	b. Plan Prepared by:	c. Plan Signed/Stamped by:	d. Revised Final Date:	e. Scale:
SITE PLAN ENTITLED "WARE SOLAR WARE PLANNING COMMISSION PLANS FOR SITE/ELECTRICAL LAYOUT, GRADING/DRAINAGE/EROSION CONTROL/LANDSCAPING IN WARE, MASSACHUSETTS."	WESTWOOD PROFESSIONAL SERVICES	BRENDAN D. MILLER, PE.	04/012022	SCALE VARIES, 19 PAGES
NOTICE OF INTENT APPLICATION UPDATED/REVISED AND STAMPED BY WARE CONSERVATION ON JANUARY 21, 2022.	ECOS ENERGY		Stamped by Ware Conservation	ON 01/21/2022

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HYDROLOGY-STORMWATER MANAGEMENT REPORT, WARE SOLAR PROJECT, MONSON TURNPIKE ROAD, WARE, MA, PREPARED FOR ECOS ENERGY	WESTWOOD PROFESSIONAL SERVICES INC		September 2020
STORMWATER POLLUTION PREVENTION PLAN REPORT, WARE SOLAR, HAMPSHIRE COUNTY, MASSACHUSETTS, PREPARED FOR ECOS ENERGY	WESTWOOD DEVELOPMENT CONSULTANTS, LLC		April 2022
DIVISION OF FISHERIES & WILDLIFE LETTER, MONSON TURNPIKE ROAD, WARE, NHESP TRACKING NUMBER 20-39203,	NATURAL HERITAGE & ENDANGERED SPECIES PROGRAM	EVEROSE SCHLUTER, PH.D., ASSISTANT DIRECTOR	February 21, 2020
APPENDIX A - ORDER OF CONDITIONS, SPECIAL CONDITIONS AS APPROVED BY THE WARE CONSERVATION COMMISSION.	WARE CONSERVATION COMMISSION		April 13, 2022

B. Findings

1.Findings pursuant to the Massachusetts Wetlands Protection Act
Following the review of the the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act.

Check all that apply:

a. ☑ Public Water Supply	b. ☑ Land Containing Shellfish	c. ☑ Prevention of Pollution
d. ☑ Private Water Supply	e. ☑ Fisheries	f. ☑ Protection of Wildlife Habitat
g. ☑ Ground Water Supply	h. ☑ Storm Damage Prevention	i. ☑ Flood Control

2. Commission hereby finds the project, as proposed, is:

Approved subject to:

a. ☑ The following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

b. ☐ The proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**

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c.☐ The information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the interests of the Act , and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

3.☐ Buffer Zone Impacts:Shortest distance between limit of project disturbance and the wetland resource area specified in 310CMR10.02(1)(a). _____ a. linear feet

Inland Resource Area Impacts:(For Approvals Only):

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. ☐ Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5.☑ Bordering Vegetated Wetland	1880 a. square feet	1880 b. square feet	0 c. square feet	0 d. square feet
6. ☐ Land under Waterbodies and Waterways	a. square feet	b. square feet	c. square feet	d. square feet
	e. c/y dredged	f. c/y dredged		
7.☐ Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8.☐ Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9.☐ Riverfront Area	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	g. square feet	h. square feet	i. square feet	j. square feet

Coastal Resource Area Impacts:

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10.☐ Designated Port Areas	Indicate size under Land Under the Ocean, below			

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11.☐ Land Under the Ocean

a. square feet b. square feet

c. c/y dredged d. c/y dredged

12.☐ Barrier Beaches

13.☐ Coastal Beaches

Indicate size under Coastal Beaches and/or Coastal Dunes below

a. square feet b. square feet c. c/y nourishment d. c/y nourishment

14.☐ Coastal Dunes

a. square feet b. square feet c. c/y nourishment d. c/y nourishment

15.☐ Coastal Banks

a. linear feet b. linear feet

16.☐ Rocky Intertidal Shores

a. square feet b. square feet

17.☐ Salt Marshes

a. square feet b. square feet c. square feet d. square feet

18.☐ Land Under Salt Ponds

a. square feet b. square feet

c. c/y dredged d. c/y dredged

19.☐ Land Containing Shellfish

a. square feet b. square feet c. square feet d. square feet

20.☐ Fish Runs

Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above

c. c/y dredged d. c/y dredged

21.☐ Land Subject to Coastal Storm Flowage

a. square feet b. square feet

22.

☐ Restoration/Enhancement (For Approvals Only)

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c & d or B.17.c & d above, please entered the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

23.

☐ Streams Crossing(s)

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

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C. General Conditions Under Massachusetts Wetlands Protection Act
The following conditions are only applicable to Approved projects

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not exceed the issuance date of the original Final Order of Conditions.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work..
10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

    " Massachusetts Department of Environmental Protection"
    [or 'MassDEP"]
    File Number :"317-0452"

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before Mass DEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with

the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. The work associated with this Order(the "Project") is (1) ☑ is not (2)☐ subject to the Massachusetts Stormwater Standards. If the work is subject to Stormwater Standards, then the project is subject to the following conditions;

a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.*. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized; *iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10; *iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition; *v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management

BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

g) The responsible party shall:
   1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
   2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
   3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions:

SEE "APPENDIX A, ORDER OF CONDITIONS - DEP FILE NO.:317-452, ECOS ENERGY, MONSON TURNPIKE ROAD, WARE, MA, CONSTRUCTION OF A 8.00MW AC GROUND-MOUNTED SOLAR FACILITY."

Massachusetts Department of Environmental Protection
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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1.Is a municipal wetlands bylaw or ordinance applicable? ☐ Yes ☑ No

2.The Conservation Commission hereby(check one that applies):

a. ☐ DENIES the proposed work which cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

1. Municipal Ordinance or Bylaw _____ 2. Citation _____

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order or Conditions is issued. Which are necessary to comply with a municipal ordinance or bylaw:

b. ☐ APPROVES the proposed work, subject to the following additional conditions.

1. Municipal Ordinance or Bylaw _____ 2. Citation _____

3.The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows:

APPENDIX A
ORDER OF CONDITIONS – DEP FILE NO: 317-452
Ecos Energy, Monson Turnpike Road, Ware, MA
Construction of a 8.00MW AC Ground-Mounted Solar Facility

Findings:

- This Order of Conditions applies to and involves parcels of land on Monson Turnpike Road, located within the Town of Ware, Hampshire County, Massachusetts, and additionally referred to as Assessor's Map and Parcel's: 20-0-1 through 20-1-62 (hereinafter the "Site" or Project Locus).
- The Activity, described within the Notice of Intent will partially occur within an Inland Resource Area and Bordering Vegetated Wetland.
- The Commission has reviewed and approved the boundaries of the Project Site and proposed erosion and sedimentation barrier shown on the plans of record (listed below).
- The Commission finds that the project, as proposed in the Notice of Intent and supplemental information, is subject to 310 CMR 10.02(2)(a) and 10.02(2)(b)3., in the judgment of the Commission, the project will Alter wetlands.
- Work within Bordering Vegetated Wetlands will have a total disturbance of 339,242 square feet, with a temporary disturbance of 1,880 square feet, and with 0 square feet of restoration or replacement. Work within the wetland will be for a temporary wetland crossing only.
- The work shall conform to the following plans and documents, unless otherwise specified in this Order:
    - Notice of Intent (NOI) filed by Ecos Energy LLC, prepared by Doucet & Associates, Inc., received by the Conservation Commission (Commission) on August 21, 2018, with a revised NOI received by the Commission stamped date of January 21, 2022.
    - Plan set entitled "Permit Drawings for PV Array, Monson Turnpike Road, Ware, MA", sheets C-1 through C-13, dated August 03, 2018, prepared by Doucet & Associates, prepared for Ecos Energy LLC. Plans revised and entitled "Ware Solar Ware Planning Commission Plans for Site/Electrical Layout, Grading/Drainage/Erosion Control/Landscaping in Ware, Massachusetts", sheets 1-18, dated January 04, 2021, having a revision date of April 01, 2022, pages 1-19, prepared by Westwood Professional Services, stamped, and signed by Brendan D. Miller, PE.
    - Hydrology-Stormwater Management Report, Ware Solar Project, Monson Turnpike Road, Ware, MA, prepared for Ecos Energy, prepared by Westwood Professional Services, Inc, dated September 2020.
    - Stormwater Pollution Prevention Plan Report, Ware Solar, Hampshire County, Massachusetts, prepared for Ecos Energy, prepared by Westwood Development Consultants, LLC, dated April 2022.
    - Division of Fisheries & Wildlife Letter, NHESP Tracking 20-39203, dated February 21, 2020.

Special Conditions:

20. Administration:
    a. The Commission shall receive the receipt from the Hampshire Country Registry of Deeds for the filing of this Order of Conditions, no later than 30-days from date of issuance OR prior to the start of work, whichever is earlier.
    b. A full copy of this Order shall be always on-site while activities regulated by this Order are being performed.
    c. The Ware Conservation Commission is the Issuing Authority of this Order of Conditions; valid extensions and Certificates of Compliance may only be issued by the Commission.
    d. During the Construction phase of this project the on-site foreman, directing engineer, and designated construction manager shall have copies of this permit at the site, familiarize themselves with the conditions of this permit, and adhere to its conditions.
    e. Prior to the issuance of a Certificate of Compliance, the Owner of the property covered by this Order of Conditions or their successor(s) in title shall have primary responsibility for the maintenance of all erosion controls: siltation controls; drainage systems regulated by this Order of Conditions.
    f. Any damaged caused as a direct result of this project to any Resource Areas shall be the responsibility of the applicant to repair or restore. Sedimentation of any Resource Area shall be considered fill of that Resource Area.
    g. All work must conform to the plans referenced above.

h. Any changes required by the Commission, Boards, or the Applicant may require a new filing of a Notice of Intent with this Conservation Commission as per the MA Wetland Protection Act., M.G.L. Chap. 131, Sec. 40, as amended.
i. Any modifications or revisions to the plan or plans referenced above or Notice of Intent or any new plans must be submitted to the Ware Conservation Commission for review and a determination as to whether a new NOI is required. If this procedure is not followed, the Order may be rescinded. The Ware Conservation Commission reserves the right to require the Applicant file a new NOI for any appropriate plan changes or submittals.
j. This Order authorizes only the activity described on the approved plan(s) and approved documents referenced in this Order. Any other or additional activities in an area within the jurisdiction of the Commission will require separate review and approval by the Commission.
k. The Ware Conservation Commission reserves the right to make periodic site inspections. A member of the Conservation Commission or its agent may enter and inspect the property and the activity that are subject of this Order at all reasonable times, with or without probable cause or prior notice, and until a Certificate of Compliance is issued, for the limited purpose of evaluating compliance with this Order (and Town Bylaws and Bylaw Regulations)
l. The Contractor and/or leasee or landowner shall immediately notify the Ware Conservation Commission when work begins.
m. It is the responsibility of the Applicant to complete any review required by all agencies with jurisdiction over the activity that is the subject of this Order, and to procure all required permits or approvals. These reviews, permits and approvals may include but are not limited to the following:
    i. Review by the U.S. Army Corps of Engineers or Individual Permit Activity, and procurement of any permits or approvals identified by the Corps.
    ii. Review by the DEP and procurement of any permits or approvals identified by the DEP.

21. Pre-Construction Activities:
    a. The Recording Information page (the last page) provided with this Order shall be completed and stamped at the Hampshire County Registry of Deeds and a copy furnished to the Ware Conservation Commission.
    b. Prior to the commencement of construction, the applicant/owner shall inform the Conservation Commission in writing of the name(s) and business phone number(s) of the project supervisor(s) who will be responsible for ensuring performance of all sedimentation and erosion control measures.
    c. Prior to activity and any work commencing on the site, the applicant shall display the DEP File Number for this Order on a sign with minimum dimensions of two (2') feet by two (2') feet at a location clearly visible from the street. The sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.
    d. Prior to any activity on site, a pre-construction inspection shall be required at the time of building permit issuance.
    e. At the time of requesting the Building Permit, SDS information shall be submitted to the Commission.
    f. Prior to any activity on site, the approved erosion control shall be installed as indicated on the approved plans. Such erosion control materials shall be checked and replaced as necessary and shall be maintained until all construction is complete. Only weed free straw shall be used.
    g. Prior to any activity on site, the limits of wetland resource areas closest to construction activities shall be flagged with surveyor's tape and stakes and shall remain in place during construction.
    h. At any time before, during or after construction, and until the issuance of a Certificate of Compliance, the Commission or its agent may require the applicant to modify, augment, restore or maintain erosion control measures associated with the activity that is subject to this Order.

i. Immediately after installation of erosion controls, the Commission shall be contacted to conduct a follow-up inspection to ensure that erosion controls have been properly installed.
j. The applicant and any person involved in the activity that is the subject to this Order shall notify the Commission or its agent immediately upon discovery of any matter related to this Order that may affect any area within the jurisdiction of the Commission.
k. All equipment shall be inspected regularly for leaks. Any leaking hydraulic lines, cylinders or any other components shall be fixed immediately. Refueling, servicing, and repair of motorized construction vehicles shall take place outside all areas subject to Protection Under M.G.L. c131, § 40, and related buffer zones. Any accidental releases of fuel, motor oil, and other liquids through containment shall be immediately responded to and shall contact the Commission or its agent and notify DEP Western Region and follow proper procedures. There shall be on-site absorbent materials for use in containing accidental spills.

22. Erosion Control and Siltation Prevention:
    a. The applicant/owner, his successors or assignees shall employ the best available management practices.
    b. Prior to any earth moving activity, adequate and stable erosion controls cited in the Notice of Intent, or as specified by the Conservation Commission shall be placed down-gradient of all work areas, along the limit of activity between all disturbed areas and resource area. This shall also define the limit of work.
    c. The contractor shall be responsible for monitoring and maintaining siltation controls in a state of good repair until all disturbed areas have been stabilized, or until a determination by the Commission stating that control measures are no longer needed. The applicant shall make all diligent efforts to minimize the area extent of open, disturbed or exposed soil surfaces.
    d. During all phases of construction, all disturbed or exposed soil surfaces shall be brought final finished grade and stabilized. Temporary stabilization shall include straw or mulch.
    e. Any runoff from disturbed surfaces shall be directed through erosion control barriers or sediment reducing measures prior to entering any sensitive areas.
    f. All areas of Construction shall be inspected at the close of each construction day. Erosion and siltation controls and control structures shall be monitored at that time and maintained, repaired, or reinforced as necessary.
    g. An adequate stockpile of siltation control materials shall be always on site for emergency or routine replacement and shall include materials to repair or replace straw bales, stakes, silt fencing and any other devices used for the purpose of siltation controls. Only weed free straw shall be used.
    h. The Commission reserves the right to impose additional conditions on portions of this project to mitigate any impacts which could result from site erosion, or any noticeable degradation of surface water quality discharging from the site.
    i. Erosion and sedimentation control devices shall be inspected after each storm event of rainfall of 1-inch or greater within a 24-hour time period and shall be repaired or replaced as necessary. Any accumulated silt adjacent to the barriers shall be removed.
    j. Rainfall of 1-inch or greater within a 24-hour period, the Contractor shall submit a Monitoring Report to the Commission. Any reports submitted to the EPA, the Ware Conservation Commission shall receive a copy within 24-hours.
    k. All stockpiles of soils existing for more than one day shall be surrounded by a row of entrenched silt fence and shall be covered.

[Continue to next page]

23. Construction Management:
    a. All equipment shall be operated parked and maintained to limit alterations of those areas clearly identified on the plans and demarcated in the field by the flagging and construction/siltation barriers installed pursuant to Condition #22 B. No equipment shall enter or cross such areas at any time unless the location of disturbance is marked on the plans referenced in this Order and flagged in the field.
    b. All waste products, grubbed stumps, slash, construction materials, etc., shall be deposited at least 100 feet from the resource areas identified on the plans referenced in this Order. The waste products shall be removed from the site.
    c. No fuel, oil, or other pollutants shall be stored in any resource area or the buffer zone.
    d. Any stored fuel, oil, or other pollutants on site that are kept out of the areas listed in Condition #23 C, shall be contained in tightly sealed containers that are clearly labeled.
    e. No materials shall be disposed of into the resource area and/or the buffer-zone. All contractors including, concrete suppliers, painters, and plasterers, shall be informed that the cleaning of equipment is prohibited in areas where the wash water will drain directly into said areas.
    f. All site work shall be stabilized at the close of each workday and prior to anticipated adverse weather conditions.
    g. Equipment for fuel storage and refueling operations shall be located outside all areas within the jurisdiction of the Commission unless indicated otherwise on the approved plans.
    h. The burial of stumps and any other type of construction refuse or other waste material is prohibited in the buffer zone and resource area.
    i. At the discretion of the Applicant, the trees may be cut with stumps remaining in place or pollarded.
    j. All disturbed areas, slopes and proposed landscape areas shall be loamed and seeded or stabilized through the use of erosion control blankets or other approved means. All disturbed areas will be graded, loamed and seeded prior to November 1 of each year, if possible. No disturbed areas or stockpiled material will be left unprotected or without erosion controls during the winter.
    k. The seed stock to be used to restore disturbed areas shall complement or contain native flora and be of proven value to local wildlife.
    l. No herbicides, pesticides, fungicides, and fertilizers shall be used on site. Organic pesticides, herbicides, fungicides, and fertilizers may be used subject to the review and approval of the Conservation Commission. This shall be noted in the Certificate of Compliance and shall be an ongoing condition.

25. Stormwater Management:
    a. There shall be no sedimentation into wetlands or water bodies from discharge pipes or surface runoff leaving the site.
    b. The detention basin shall be inspected and cleaned at least twice annually, in the early Spring after snow melt and in the fall. Accumulated sediments, leaves, branches, and other debris shall be removed and disposed of in accordance with all applicable federal, state, and local laws. Vegetated and rip-rapped surfaces and flared end sections shall be repaired or replaced as needed to prevent erosion and sedimentation and slumping of berms. Vegetation shall be moved at least once a year to prevent the growth of woody species. At least once a year, the basin shall be inspected during a heavy rainstorm or within a 24-hr time period from the end of the storm to determine whether it is meeting the intended detention times, sediment removal, and infiltration functions.

26. Wetland Remediation
    a. The Commission reserves the right to require additional plantings to ensure achievement of 75% cover of wetland plant species within two full growing seasons, as specified in 310 CMR 10.55 (4) (b).

b. Under this Order of Conditions, work within Bordering Vegetated Wetlands will have a total disturbance of 339,242 square feet, with a temporary disturbance of 1,880 square feet, and with 0 square feet of restoration or replacement. Work within the wetland will be for a temporary wetland crossing only.
c. If the Commission and/or Agent requires restoration/replacement construction activities, these activities must be supervised by a Wetland Scientist who shall be a professional with experience in wetland replication, wetland hydrology and a working knowledge of botany. Such a person shall be retained to supervise and monitor construction of the wetland remediation areas until the remediation area meets the requirements of this Order.
d. After 6-months of the temporary crossing being removed, the Agent shall inspect the site to verify if the site is revegetated and if no growth, then the applicant is to place seed mixture. The seed mixture shall be approved by the Commission and/or Agent.

27. Post-Construction Activities:
    a. Landscaping shall occur as soon as possible to provide permanent stabilization of disturbed area surfaces. As proposed in the Notice of Intent Narrative use of heavier grass such as ryes are to be used in order to assist in slowing down of water runoff.
    b. If the season or adverse weather conditions do not allow the establishment of vegetation, temporary mulching with crushed stone, straw, wood chips or other methods shall be provided.
    c. A minimum of 4 inches of topsoil shall be placed in areas to be re-vegetated and its surface smoothed to the specified grades.
    d. Continued maintenance of the area in a manner, which assures permanent stabilization and precludes any soil erosion, shall be the responsibility of the owner of recorded property.
    e. After completion of construction, the applicant shall complete the following:
        a. Remove all erosion control and silt fence prior to the request for a Certificate of Compliance.
        b. Submit a completed Request for Certificate of Compliance – WPA Form 8A.
        c. A letter from a Registered Professional Engineer certifying compliance with the Order of Conditions detailing any deviation that exist and their potential effect on the project. A statement that work is in "substantial compliance" with no detailing of deviation will not be accepted.
        d. An As-Built Plan stamped and signed by a Registered Professional Engineer or Land Surveyor showing post-construction conditions including elevations and any deviations from the approved plans.

28. Perpetual Conditions:
    a. Annual Reports confirming compliance with the Stormwater Operation and Maintenance Plan shall be submitted to the Ware Conservation Commission.
    b. No additional alteration within the Resource Areas shall occur without the filing of a new Notice of Intent to the Ware Conservation Commission.
    c. All plantings are to be maintained for the life of the project. Any plantings that die during the lifetime of the project shall be replaced with a species of equal size at the time of death and quality unless, in the opinion of the Conservation Agent, an alternative option is deemed sufficient.

End of Conditions.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
317-0452
MassDEP File #

eDEP Transaction #

Ware
City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

April 27, 2022
1. Date of Issuance

Please indicate the number of members who will sign this form. This Order must be signed by a majority of the Conservation Commission.

4
2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Ecos Energy, Ware Solar Project, Monson Turnpike Road, Parcel's 20-01 through 20-1-62.

Signature	Printed Name
	Mark Swett
	Thomas Barnes
	Kristin Rosenbeck
	Dennis Cote

☐ by hand delivery on

Date

☒ by certified mail, return receipt requested, on

April 27, 2022
Date

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:317-0452
eDEP Transaction #:1367233
City/Town:WARE

(M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

WARE
Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

WARE
Conservation Commission

Please be advised that the Order of Conditions for the Project at:

MONSON TURNPIKE ROAD — Project Location
317-0452 — MassDEP File Number

Has been recorded at the Registry of Deeds of:

County | Book | Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book | Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:317-0452
eDEP Transaction #:1367233
City/Town:WARE

Signature of Applicant

Rev. 4/1/2010

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WARE SOLAR
WARE PLANNING COMMISION PLANS

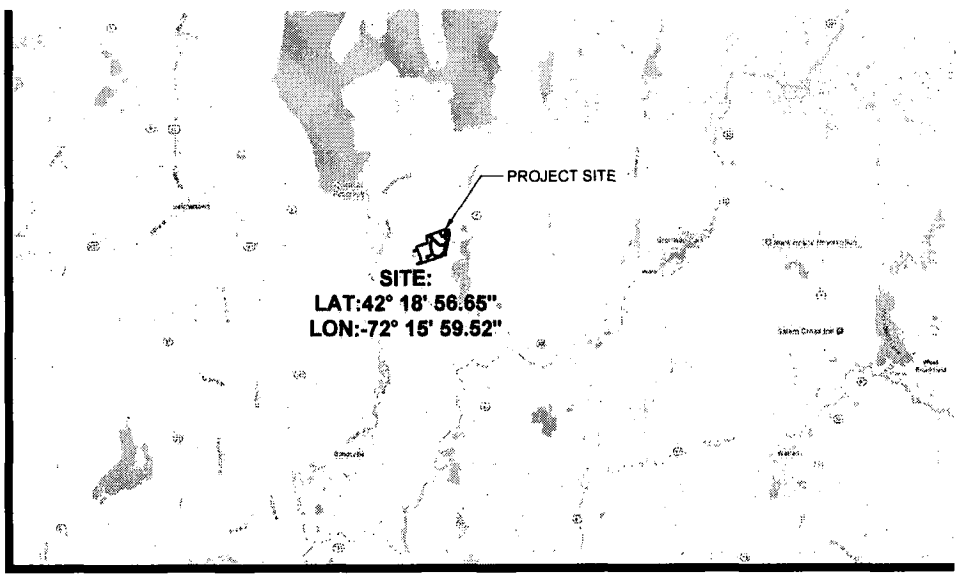
FOR

Site/Electrical Layout, Grading/Drainage/Erosion Control/Landscaping

IN

WARE, MASSACHUSETTS

LOCATION MAP



SOURCE: MAP DATA ©2017 GOOGLE (NOT TO SCALE)

CONTACT INFO:

OWNER/DEVELOPER:
ECOS ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

CIVIL ENGINEER:
WESTWOOD PROFESSIONAL SERVICES
12701 WHITEWATER DRIVE
SUITE 300,
MINNETONKA, MN 55343

Sheet List Table	
Sheet Number	Sheet Title
1	Cover Sheet
2	Overall Site Plan
3	Construction Phasing Plan
4	Removal and Erosion Control Plan
5	Overall Grading Plan
6	Site & Grading Plan - 1
7	Site & Grading Plan - 2
8	Site & Grading Plan - 3
9	Site & Grading Plan - 4
10	Site & Grading Plan - 5
11	Road Profile - 1
12	Road Profile - 2
13	Road Profile - 3
14	Overall Landscape Plan
15	Drainage Plan
16	Post Construction Drainage Plan
17	Civil Notes
18	Civil Details
19	Civil Details

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BRENDAN D. MILLER CIVIL No. 52258 MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

DATE SIGNED 04/01/2022

Designed J.S
Checked MPG
Drawn J.S
Record Drawing by/date

Revisions		
#	DATE	DESCRIPTION
A	09/05/2019	WARE PLANNING SUBMISSION
B	07/02/2018	WARE PLANNING SUBMISSION
C	08/08/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

COVER SHEET

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 1

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LEGEND:

- EXISTING LOT LINE
- PROPOSED LOT LINE
- PROPOSED FENCE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED AC DISTRIBUTION
- 18 x 2 SOLAR MODULE BOCK
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED SAND FILTER

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DATE SIGNED 04/01/2022

Designed	JLS
Checked	MPG
Drawn	JLS
Record Drawing by/date	

Revisions

#	DATE	DESCRIPTION
A	06/05/2018	WARE PLANNING SUBMISSION
B	07/02/2018	WARE PLANNING SUBMISSION
C	08/06/2018	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

OVERALL SITE PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 2

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LEGEND:

- EXISTING LOT LINE
- PROPOSED LOT LINE
- PROPOSED FENCE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED AC DISTRIBUTION
- 18 x 2 SOLAR MODULE BOCK
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED SAND FILTER
- PHASE BOUNDARY

PROJECT PHASING

THE PROJECT WILL BE PHASED AS FOLLOWS

1. IDENTIFICATION OF CLEARING AND GRADING LIMITS, SENSITIVE AREAS AND WETLANDS PRIOR TO CONSTRUCTION.
2. INSTALLATION OF SEDIMENT AND EROSION CONTROLS AS IDENTIFIED BY PROJECT PLANS&APPROVALS, INCLUDING ANY NECESSARY SITE-SPECIFIC MODIFICATION AS IDENTIFIED.
3. PERFORMANCE OF EARTHWORK, DRAIN TILE ADJUSTMENT, ACCESS ROAD WORK, AND INITIAL STABILIZATION OF EXPOSED SOILS.
4. CONSTRUCTION/INSTALLATION OF PERMANENT STORMWATER TREATMENT FACILITIES.
5. INSTALLATION OF THE SOLAR ARRAY AND ELECTRICAL COMPONENTS (CONCURRENT WITH ABOVE).
6. APPLICATION OF SEED AND TEMPORARY STABILIZATIONS AND
7. CLEANUP AND PERMANENT STABILIZATIONS OF THE SITE

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Designed	A.S
Checked	MPG
Drawn	A.S
Record Drawing Update	

Revisions

#	DATE	DESCRIPTION
A	08/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/08/2018	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

CONSTRUCTION PHASING PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 3

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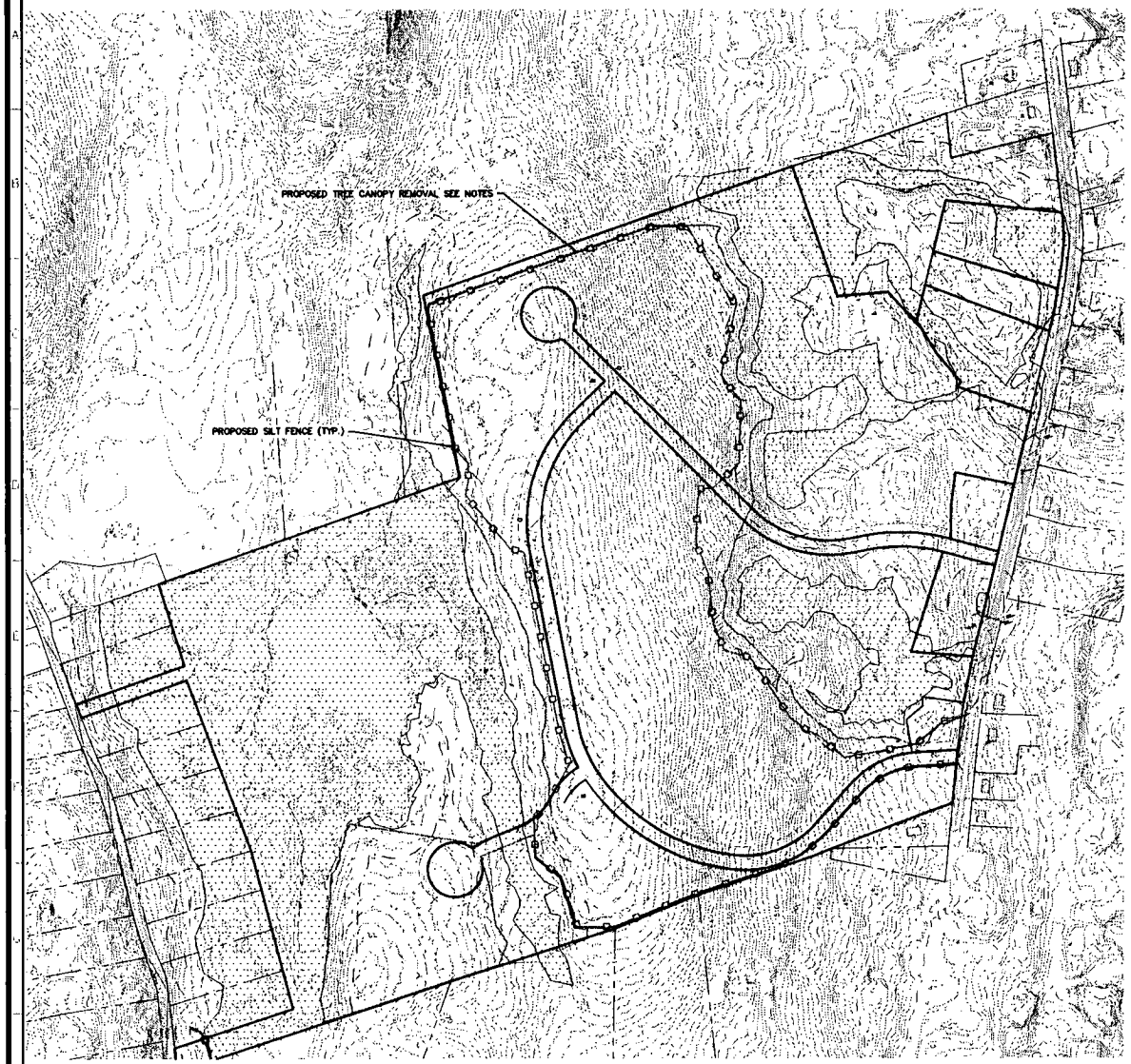

LEGEND:

- PROPOSED LOT LINE
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED SILT FENCE
- TREE CANOPY CLEARING
- ACCESS ROAD EASEMENT
- DISTURBANCE LIMIT

CONSTRUCTION SEQUENCING NOTES:

1. THE CONTRACTOR SHALL PERFORM ALL TREE REMOVAL ACTIVITIES ON SITE TO ALLOW FOR BMP INSTALLATION, NO GRUBBING IS TO OCCUR DURING TREE REMOVAL, PRIOR TO BMP INSTALLATION.
2. ALL BMP'S IDENTIFIED ON THE PLAN SHALL BE STAKED BY A REGISTERED SURVEYOR AND INSTALLED PER PLANS PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. AS-BUILT DRAWINGS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF THE PROJECT.

PROJECT FOOTPRINT REMOVAL NOTES

AREAS WITHIN THE PROJECT FENCELINE LIMITS SHALL BE CLEARED BY THE FOLLOWING METHODS:

TREE CANOPY AREAS (57.9 ACRES):
1. TREES AND VEGETATION SHALL BE CLEARED AND GRUBBED

EROSION CONTROL NOTES:

1. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY SOIL DISTURBANCE.
2. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
3. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.
4. WETLAND AREAS AND SURFACE AREAS SHALL BE PROTECTED FROM SEDIMENT. OFF-SITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE OR CARRIED THROUGH THE PROJECT AREA WITHOUT CAUSING EROSION. INTEGRITY OF DOWNSTREAM DRAINAGE SYSTEMS SHALL BE MAINTAINED.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. STABILIZATION MEASURES SUCH AS HYDROSEEDING OR APPLICATION OF WEED FREE STRAW BALES OR STRAW MULCH OR SOIL NETTING SHALL BE APPLIED PRIOR TO REMOVAL OF TEMPORARY EROSION MEASURES AND INSPECTED WEEKLY UNTIL STABILIZATION IS COMPLETE. TEMPORARY EROSION CONTROL MEASURES MAY BE REMOVED ONCE STABILIZATION OF ALL SITE SOILS HAS BEEN ACHIEVED AND WRITTEN AUTHORIZATION TO DO SO HAS BEEN PROVIDED BY THE STORMWATER AUTHORITY. TRAPPED SEDIMENT SHALL BE REMOVED IMMEDIATELY WITH TEMPORARY EROSION CONTROL METHODS AND LAWFULLY DISPOSED OF OFF-SITE. OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN THIRTY DAYS.
6. DEVELOPER TO OBTAIN AN NPDES PERMIT PRIOR TO CONSTRUCTION.

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Checked	MPG
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Revisions

#	DATE	DESCRIPTION
A	05/05/2019	WARE PLANNING SUBMISSION
B	07/22/2019	WARE PLANNING SUBMISSION
C	08/09/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

REMOVAL AND EROSION CONTROL PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 4

Bk: 14548 Pg: 233

Bk 16 p 31

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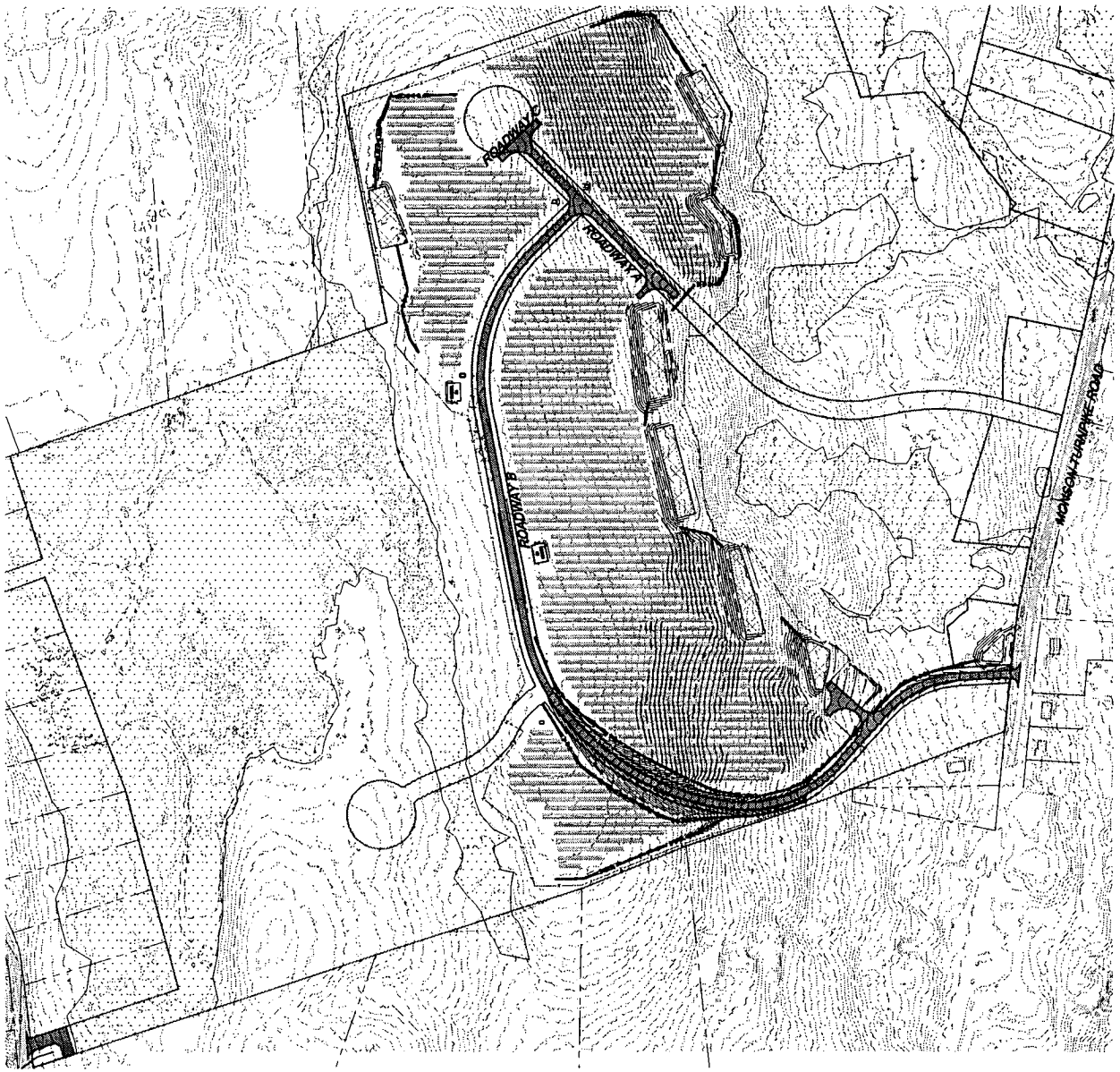

LEGEND:

- PROPOSED LOT LINE
- PROPOSED FENCE
- PROPOSED GRAVEL ACCESS ROAD
- WETLAND DELINEATION LINE/AREA
- 18 x 2 SOLAR MODULE BOCK
- PROPOSED SAND FILTER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED DRAINAGE CHANNEL
- PROPOSED TEMPORARY LAYDOWN YARD

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DATE SIGNED 04/01/2022

Brandon D. Miller, P.E.

Designed	A.S
Checked	MPG
Drawn	A.S

Record Drawing by/date

Revisions

#	DATE	DESCRIPTION
A	08/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/08/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 150' 300' 450'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

OVERALL GRADING PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 5

Bk: 14548 Pg: 234

Pg 17 of 31

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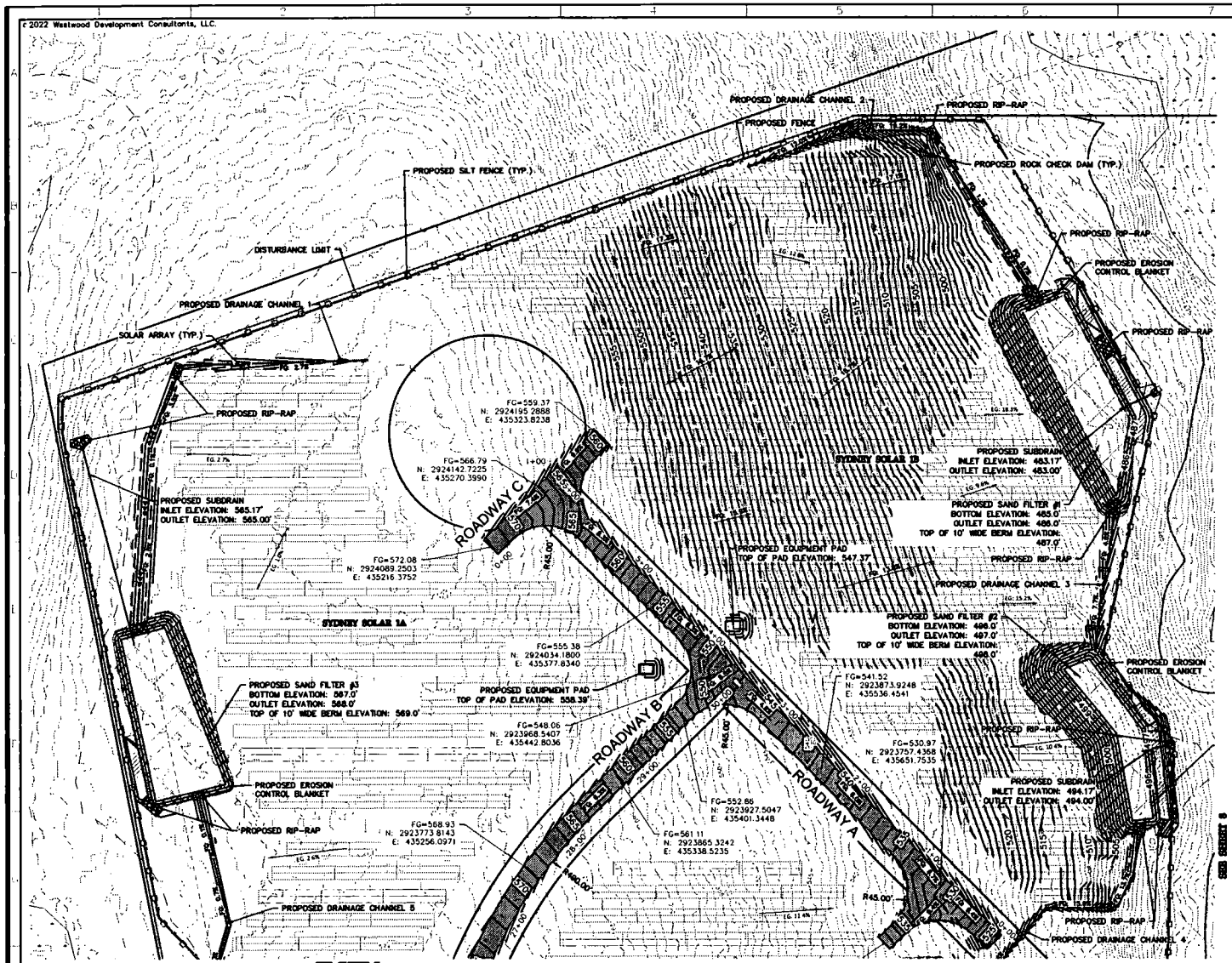
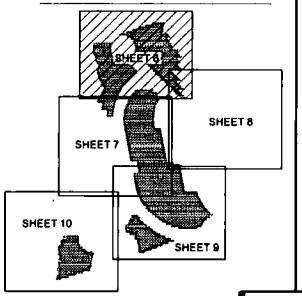


LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
- WETLAND DELINEATION LINE/AREA
- PROPOSED UNDERGROUND COLLECTOR
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED DRAINAGE CHANNEL
- PROPOSED SAND FILTER
- PROPOSED TEMPORARY LAYDOWN YARD
- PROPOSED RIP-RAP
- PROPOSED CULVERT/PIPE
- PROPOSED WATER BAR
- PROPOSED BERM
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED LOW WATER CROSSING
- PROPOSED BIO-ROLL
- PROPOSED CHECK DAM

NOTES
1. SILT FENCES ADJACENT TO OR WITHIN WETLAND BUFFERS SHOULD BE WIREBACKED AND HAYBALE REINFORCED

KEY MAP



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Minnetonka, MN 55343
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DATE SIGNED 04/01/2022

Designed	AB
Checked	MPG
Drawn	AB
Record Drawing by/date	

Revisions #	DATE	DESCRIPTION
A	06/05/2019	WARE PLANNING SUBMISSION
B	07/03/2019	WARE PLANNING SUBMISSION
C	08/05/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

0' 50' 100' 150'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

SITE & GRADING PLAN - 1

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 6

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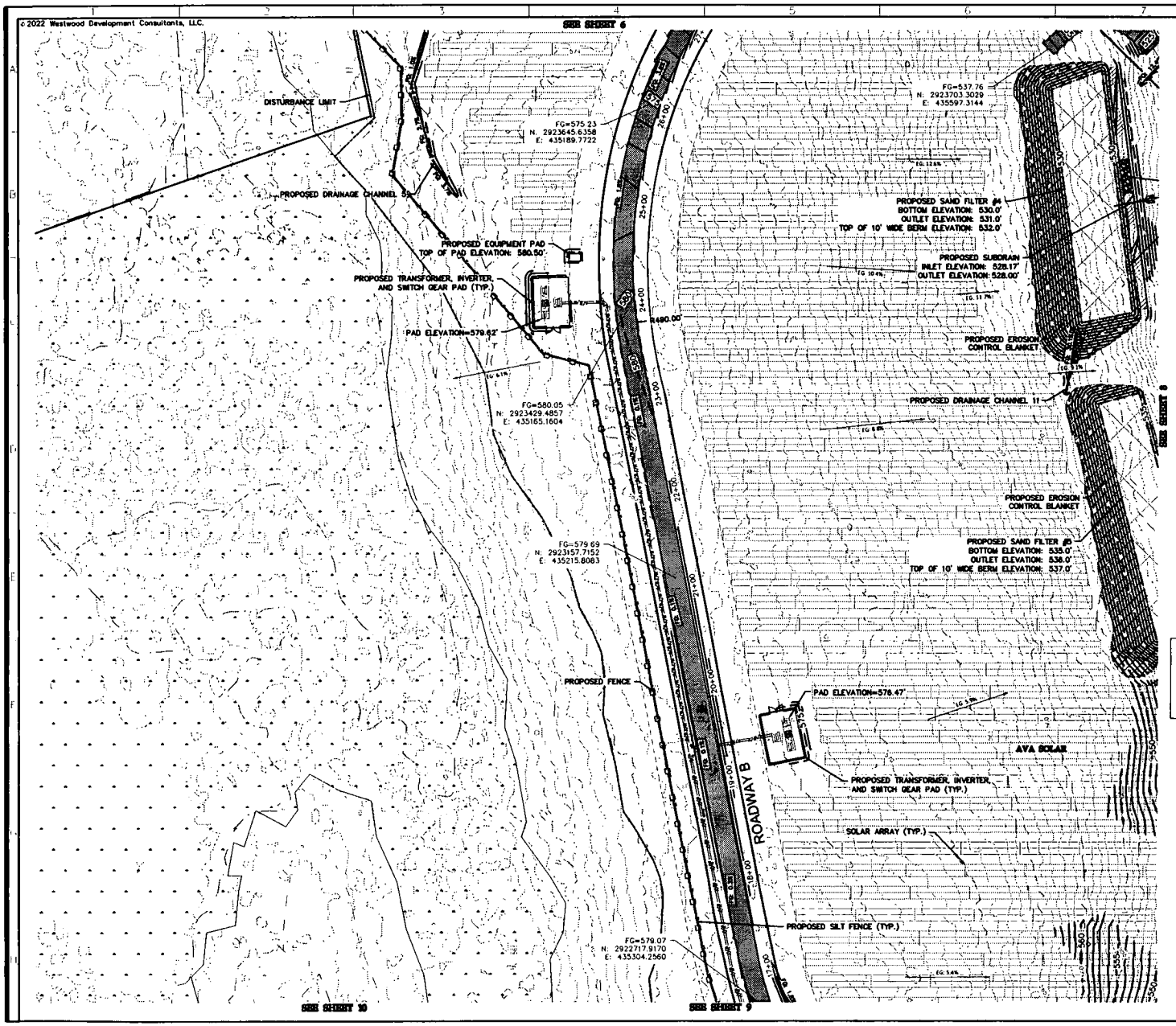

LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
- WETLAND DELINEATION LINE/AREA
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- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED DRAINAGE CHANNEL
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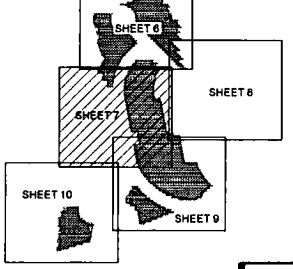
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED LOW WATER CROSSING
- PROPOSED BIO ROLL
- PROPOSED CHECK DAM

NOTES
1. SILT FENCES ADJACENT TO OR WITHIN WETLAND BUFFERS SHOULD BE WIREBACKED AND HAYBALE REINFORCED

KEY MAP



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www.westwood.com

DATE SIGNED 04/01/2022

Designed	A.B
Checked	MPG
Drawn	A.B
Record Drawing Updates	

Revisions #	DATE	DESCRIPTION
A	06/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/09/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for:
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

0' 50' 100' 150'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

SITE & GRADING PLAN - 2

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 7

Bk: 14548 Pg: 237

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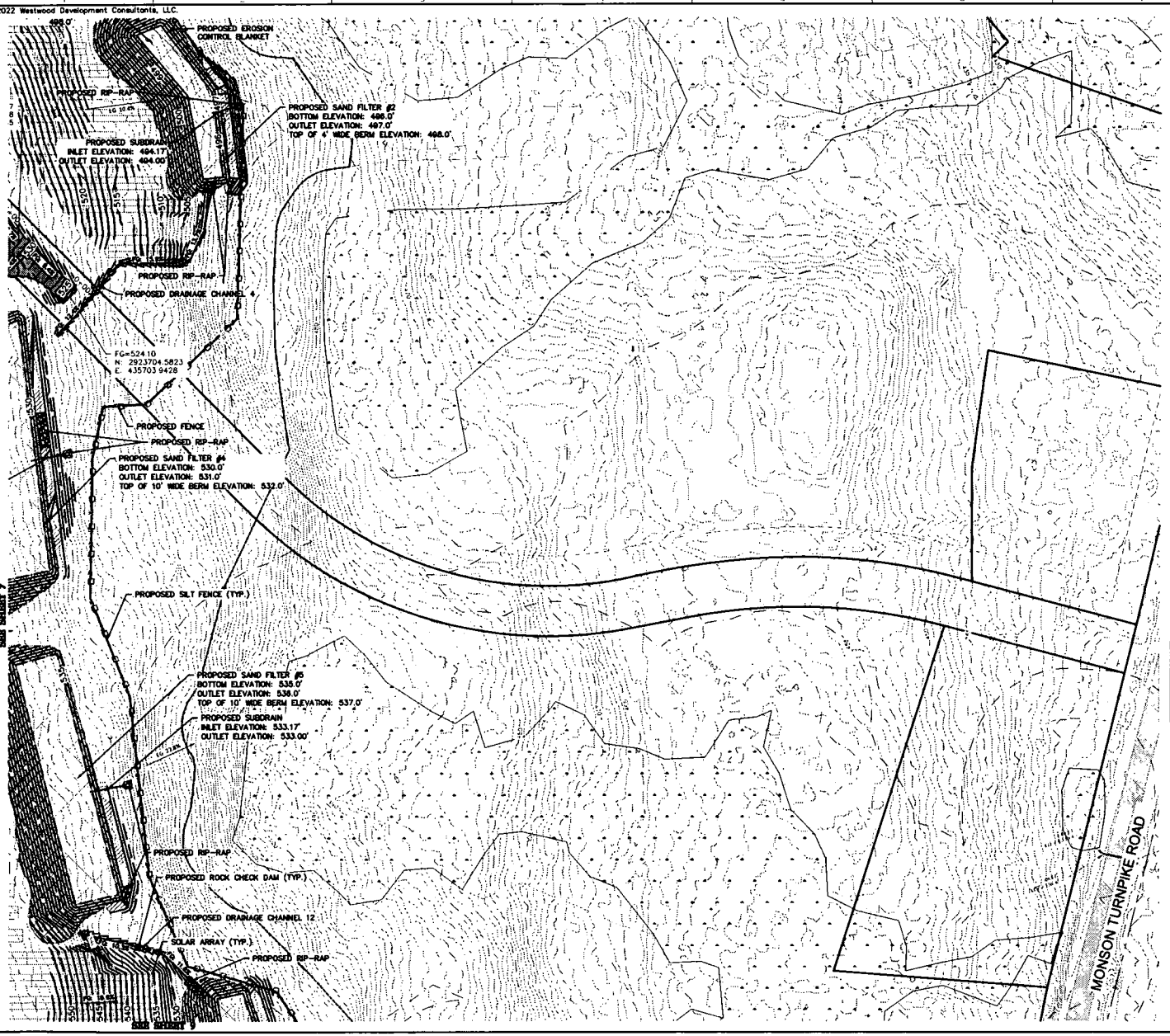
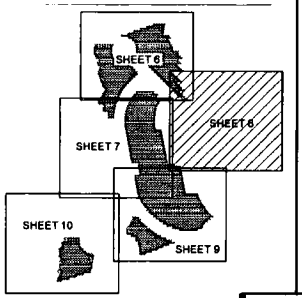


LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- 500 EXISTING 5' CONTOUR
- 501 EXISTING 1' CONTOUR
- 500 PROPOSED 5' CONTOUR
- 501 PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
- WETLAND DELINEATION LINE/AREA
- PROPOSED UNDERGROUND COLLECTOR
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED DRAINAGE CHANNEL
- PROPOSED SAND FILTER
- PROPOSED TEMPORARY LAYDOWN YARD
- PROPOSED RIP-RAP
- PROPOSED CULVERT/PIPE
- PROPOSED WATER BAR
- PROPOSED BERM
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED LOW WATER CROSSING
- PROPOSED BIO-ROLL
- PROPOSED CHECK DAM

NOTES
1 SILT FENCES ADJACENT TO OR WITHIN WETLAND BUFFERS SHOULD BE WIREBACKED AND HAYBALE REINFORCED

KEY MAP



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DATE SIGNED 04/01/2022

Brandon D. Miller P.E.

Designed	JLB
Checked	MPG
Drawn	JLB
Record Drawing by/date	

Revisions

#	DATE	DESCRIPTION
A	06/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/09/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 50' 100' 150'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

SITE & GRADING PLAN - 3

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 8

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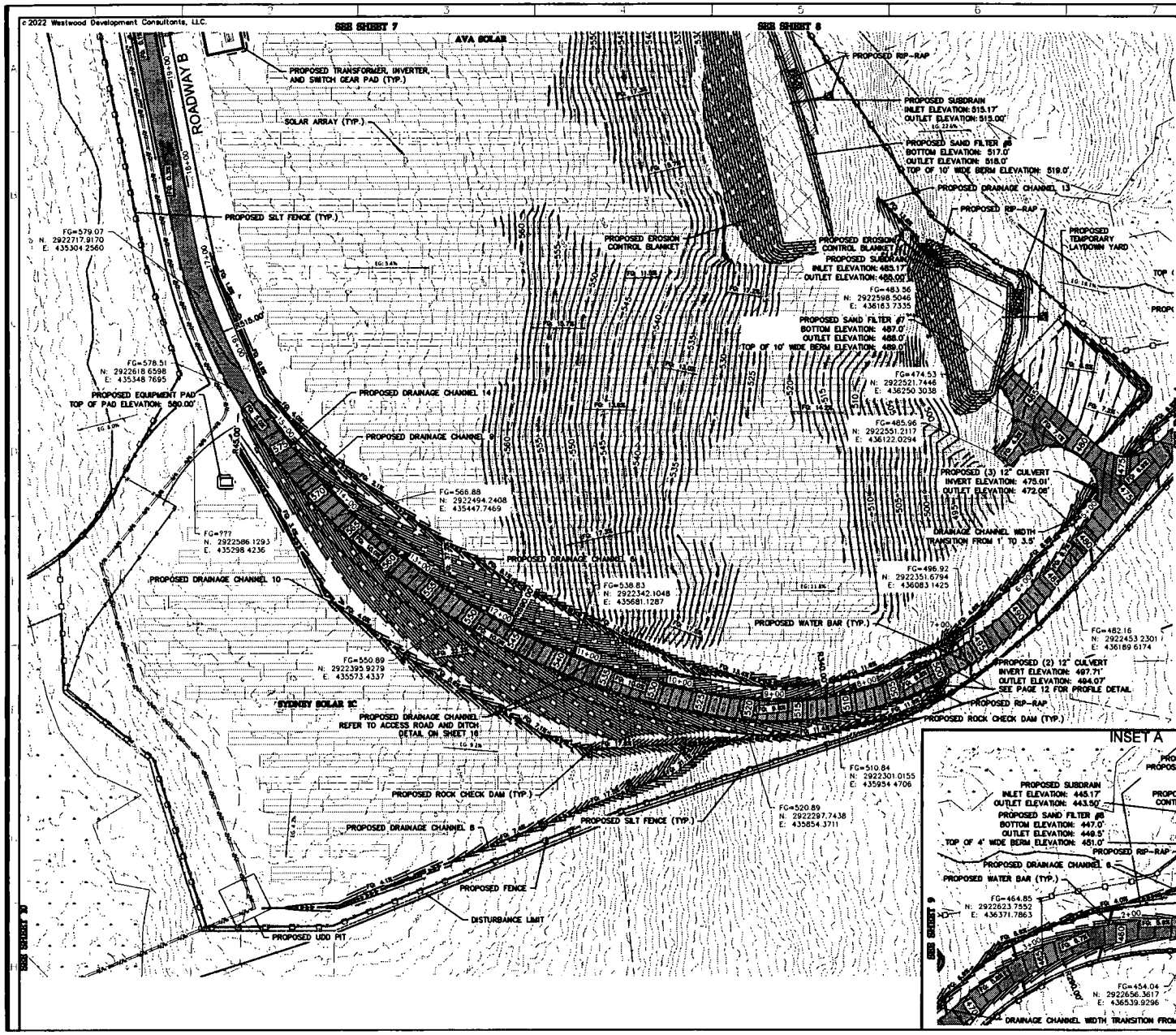

LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
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- PROPOSED SILT FENCE
- PROPOSED FENCE
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- PROPOSED BIO-ROLL
- PROPOSED CHECK DAM

NOTES
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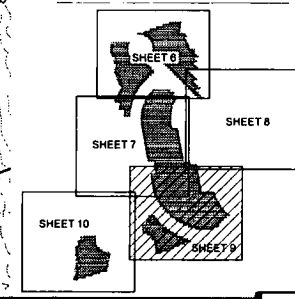
KEY MAP



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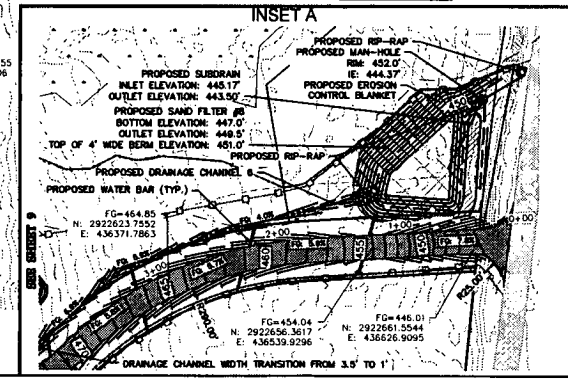

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Revisions #	DATE	DESCRIPTION
A	08/02/2018	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/08/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

0' 50' 100' 150'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

SITE & GRADING PLAN - 4

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 9

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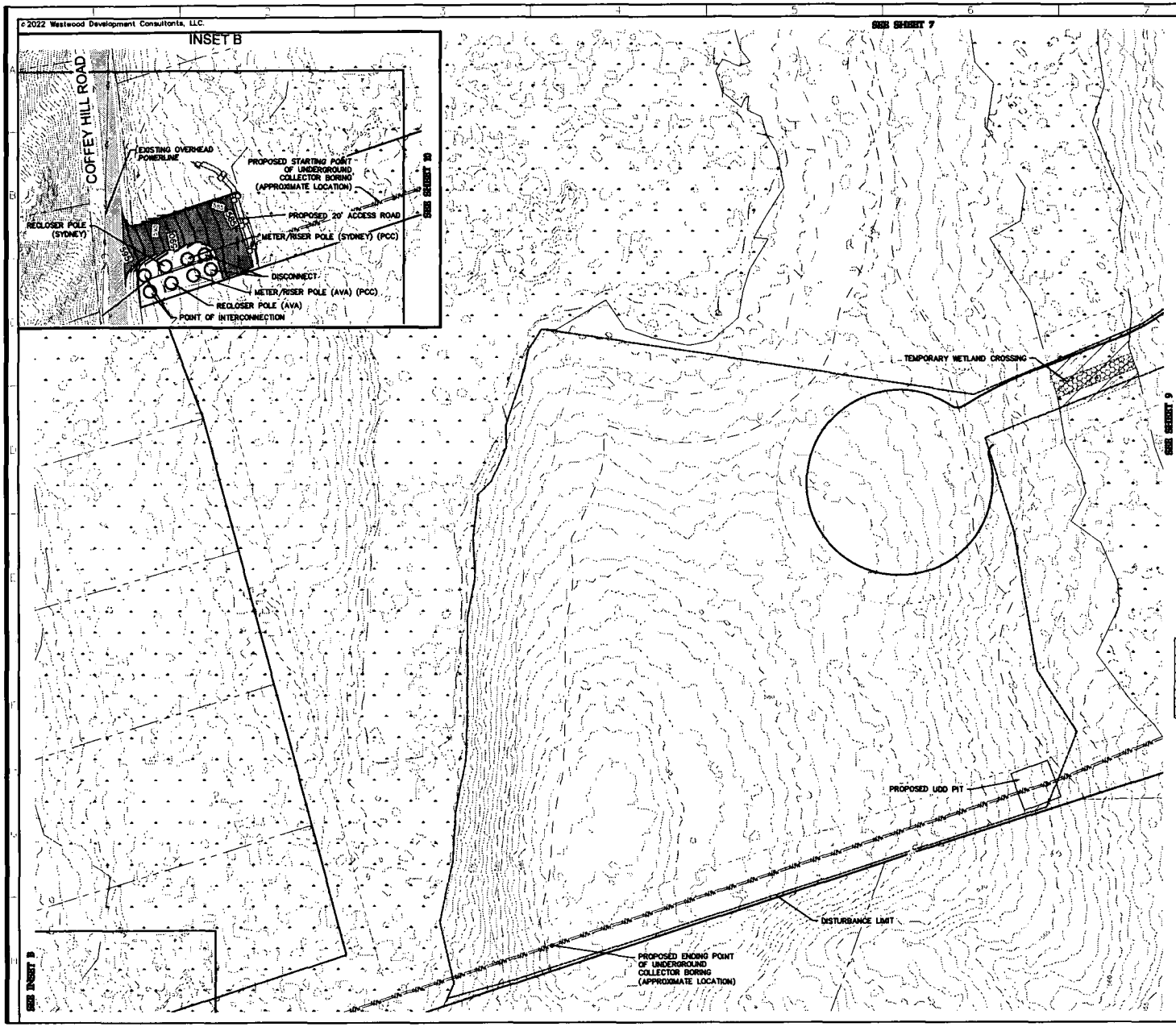

LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
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- PROPOSED CHECK DAM

NOTES
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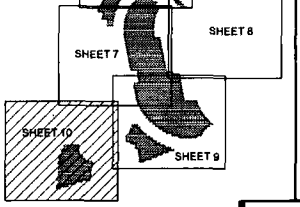
KEY MAP



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Revisions #	DATE	DESCRIPTION
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C	09/09/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for:
ecos ENERGY
222 SOUTH 6TH STREET
SUITE 1800
MINNEAPOLIS, MN 55402

0' 50' 100' 150'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

SITE & GRADING PLAN - 5

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 10

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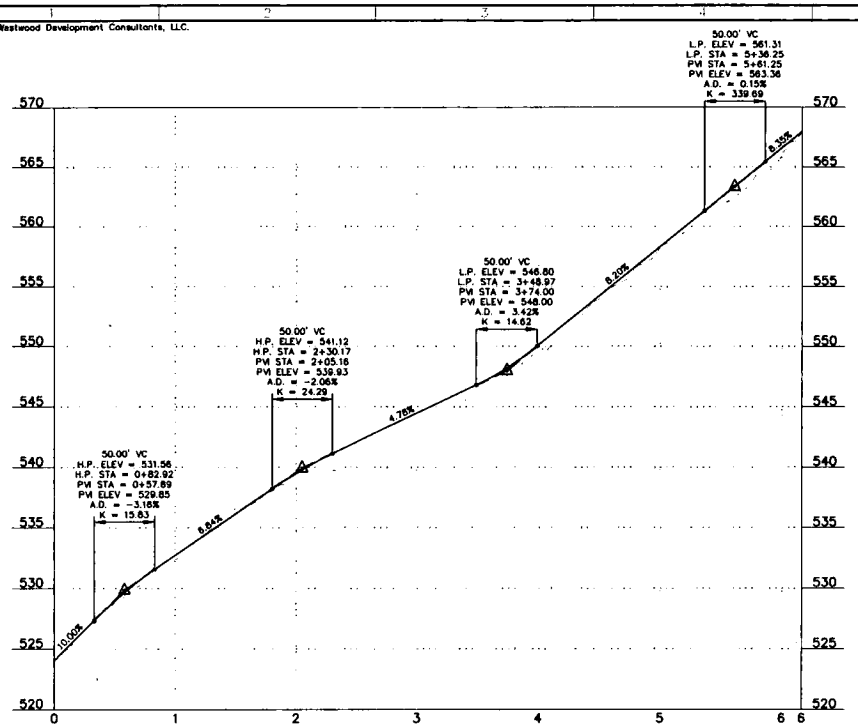
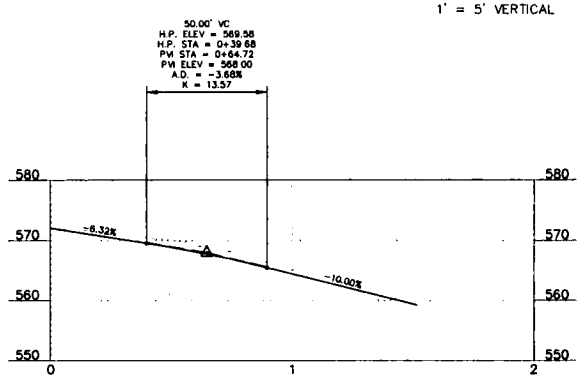


ROADWAY A

SCALE: 1'= 50' HORIZONTAL
1' = 5' VERTICAL



ROADWAY C

SCALE: 1'= 25' HORIZONTAL
1' = 10' VERTICAL

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Revisions

#	DATE	DESCRIPTION
A	08/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/05/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

ROAD PROFILE - 1

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

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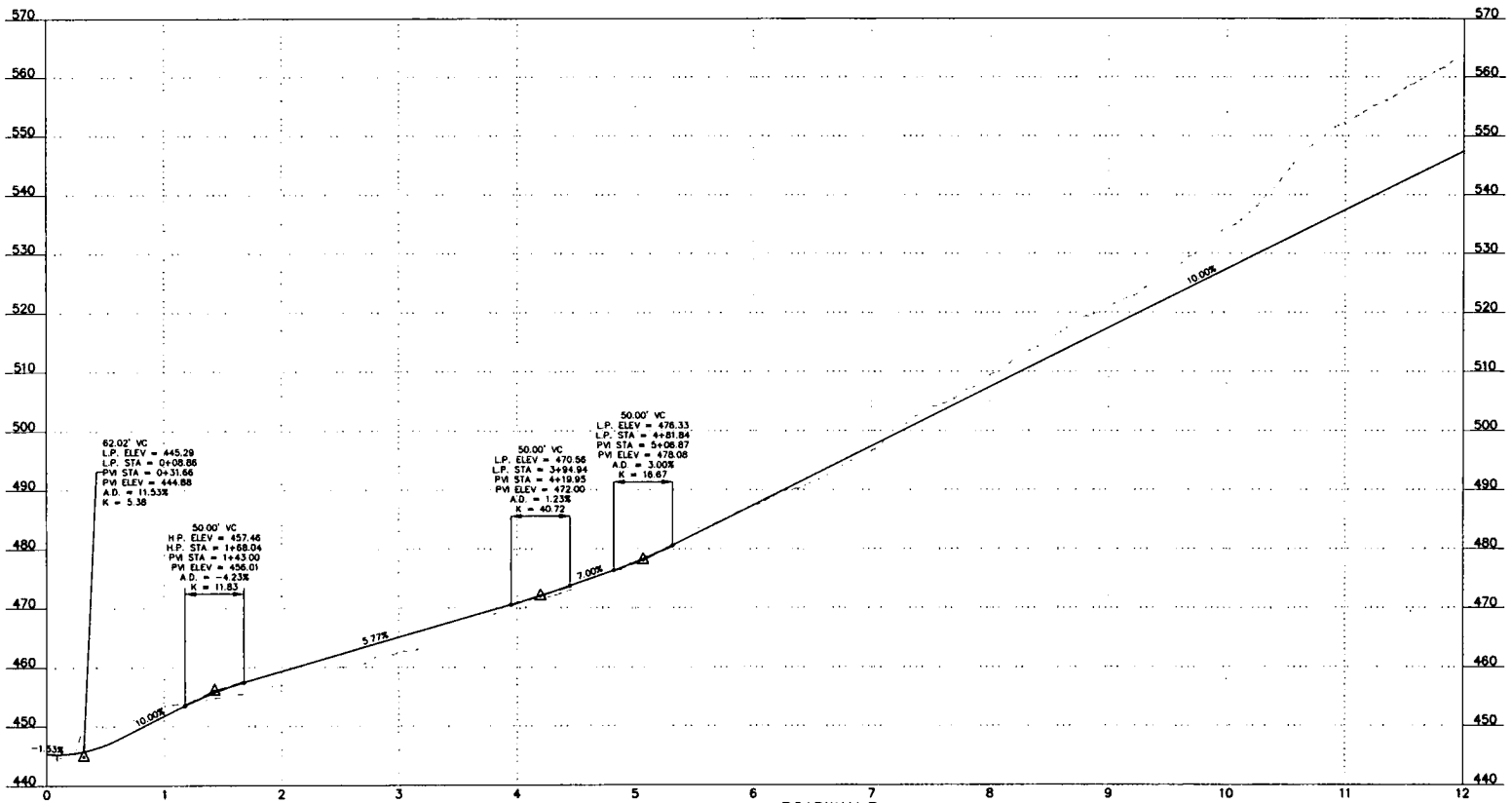

ROADWAY B

SCALE: 1'= 50' HORIZONTAL
1' = 10' VERTICAL

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LUKE NOAH LI MN LICENSED CIVIL No. 54258

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Brandon D Gilbo P.E. No. 51

Designed	AJB
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Drawn	AJB
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Revisions

#	DATE	DESCRIPTION
A	09/05/2018	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
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Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

ROAD PROFILE - 2

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 12

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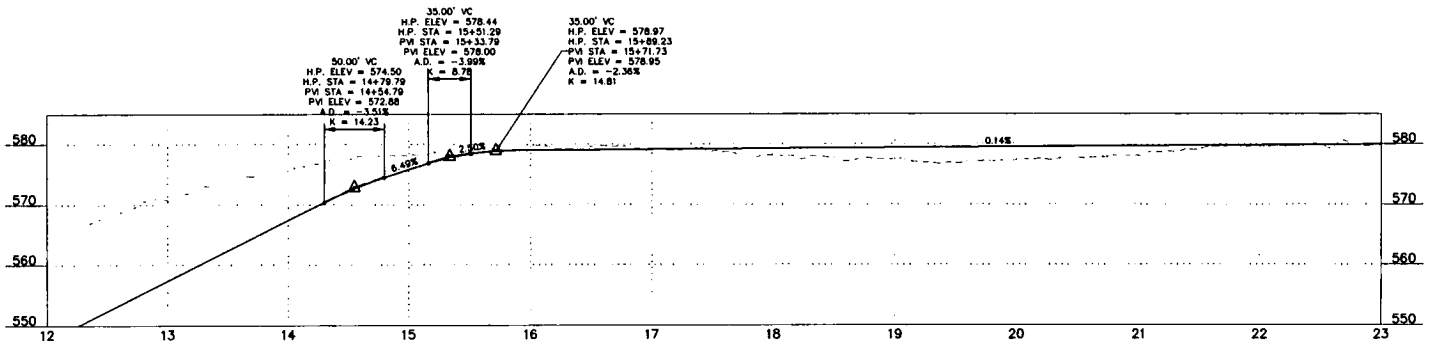
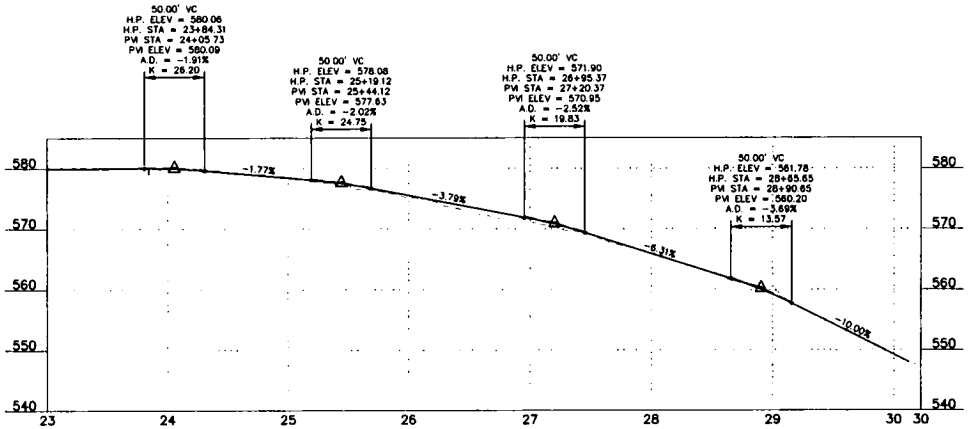
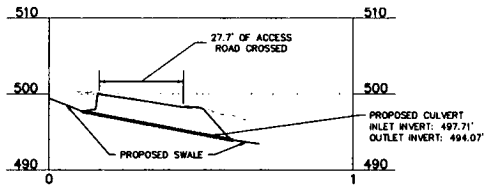


ROADWAY B (CONTINUED)
SCALE: 1'= 50' HORIZONTAL
1' = 10' VERTICAL



ROADWAY B (CONTINUED)
SCALE: 1'= 50' HORIZONTAL
1' = 10' VERTICAL



CUVLET CROSSING AT ROADWAY B
SCALE: 1'= 0.2' HORIZONTAL
1' = 8' VERTICAL

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LICENSED PROFESSIONAL ENGINEER MILES CIVIL No. 54152 MINNESOTA

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Sheet D Size: F.S.

Designed	AS
Checked	MPG
Drawn	AS
Record Drawing Update	

Revisions

#	DATE	DESCRIPTION
A	06/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/06/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

ROAD PROFILE - 3

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 13

Bk: 14548 Pg: 242

Pg 25 of 31

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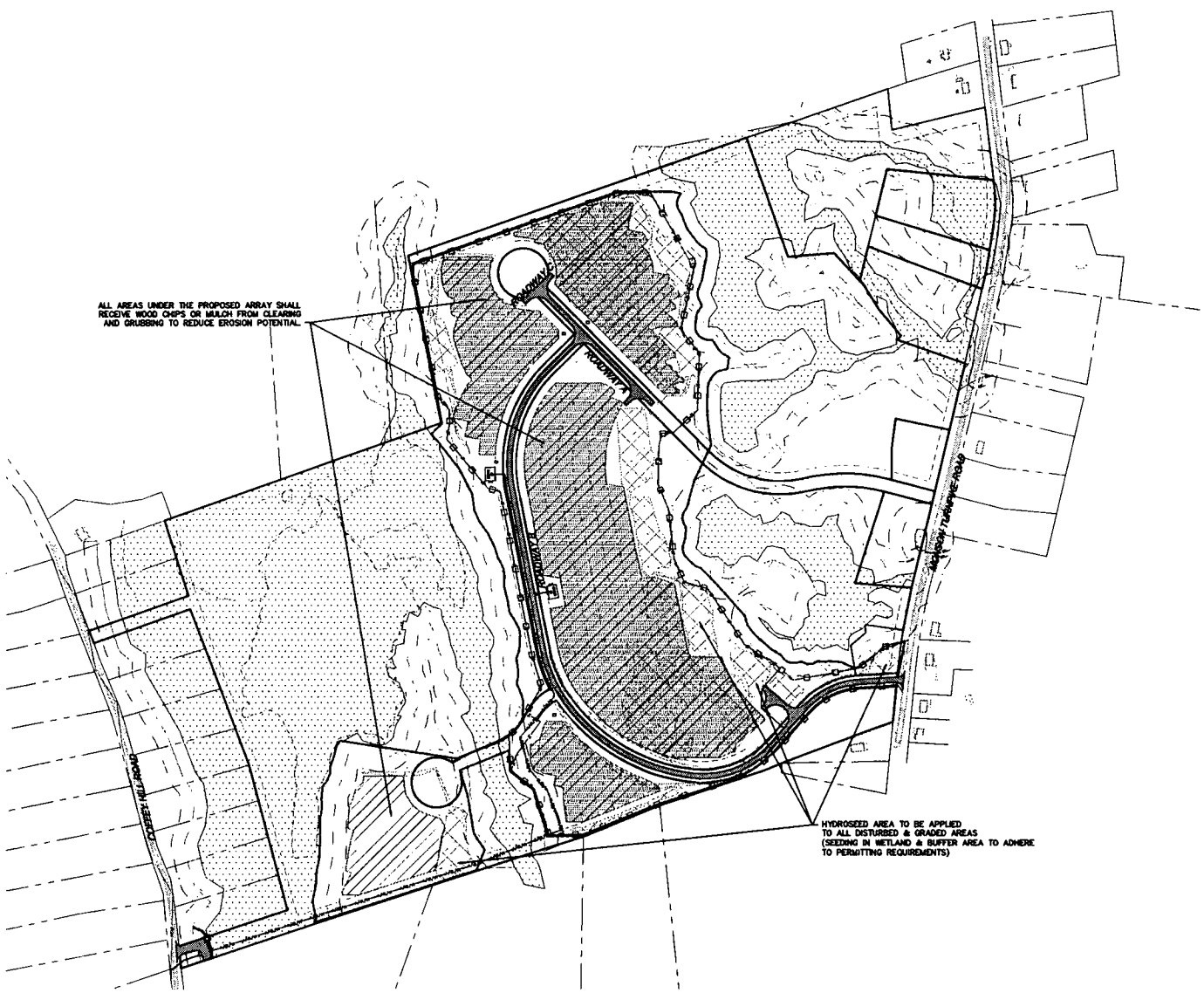

SEEDING NOTES:

1. THE CONTRACTOR SHALL HYDROSEED ALL DISTURBED AREAS ASSOCIATED WITH THE CONSTRUCTION OF THE SOLAR FACILITY. CONTRACTOR SHALL USE AN APPROVED LOW GROWTH LOW MAINTENANCE SEED MIX APPROVED BY THE APPROPRIATE GOVERNING AUTHORITY.
2. THE TOTAL HYDROSEEDING AREA IS APPROXIMATED TO BE 13.00 ACRES.
3. REMAINING AREA SHOULD BE STUMPED AND SPOT SEEDED TO ENSURE THAT THERE IS NO LARGE EXPOSED AREAS OUTSIDE OF THE GRADING FOOTPRINTS.

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DATE SIGNED 04/01/2022

Designed	A.B.
Checked	MPG
Drawn	A.B.
Record Drawing Update	

Revisions

#	DATE	DESCRIPTION
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D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

OVERALL LANDSCAPE PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 14

Bk: 14548 Pg: 243

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LEGEND:

- PROJECT BOUNDARY
- ACCESS ROAD EASEMENT
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- EXISTING GROUND SLOPE
- DRAINAGE BOUNDARY
- HYDRAULIC LENGTH
- FLOW DIRECTION ARROW

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BRANDON M. MILLER CIVIL No. 54256 MINNESOTA REGISTERED PROFESSIONAL ENGINEER

DATE SIGNED 04/01/2022

Brandon D. Miller, P.E.

Designed	AS
Checked	MPG
Drawn	AS

Record Drawing Initials

Revisions

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Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

DRAINAGE PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 15

Bk: 14548 Pg: 244

Pg 27 of 31

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LEGEND:

- PROJECT BOUNDARY
- ACCESS ROAD EASEMENT
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- EG: 9.5% EXISTING GROUND SLOPE
- DRAINAGE BOUNDARY
- HYDRAULIC LENGTH
- FLOW DIRECTION ARROW
- PROPOSED SAND FILTER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED DRAINAGE CHANNEL

Westwood

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DATE SIGNED 04/01/2022

Brendan D Gillis P.E.

Designed	JLB
Checked	MPG
Drawn	JLB
Record Drawing by/date	

Revisions

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D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 200' 400' 600'

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

POST CONSTRUCTION DRAINAGE PLAN

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 16

Bk: 14548 Pg: 245

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ROAD DESIGN PARAMETERS

1 ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY

SPECIAL PROVISIONS FOR GRADING AND EROSION CONTROL

THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS UNLESS OTHERWISE NOTED OR MODIFIED HEREIN ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY

EXECUTION

1 CLEARING AND GRUBBING
   A THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE GRADING LIMITS SHOWN ON THE PLANS THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED
2 TOPSOIL STRIPPING
   A TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS THROUGH THE ROOT ZONE TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS
   B ANY TOPSOIL, THAT HAS BEEN STRIPPED, SHALL BE RE-SPREAD OR STOCKPILED WITHIN GRADING AREAS AND/OR USED AS FILL OUTSIDE OF THE DISTURBANCE AREAS AS DIRECTED BY THE ENGINEER
3 EMBANKMENT CONSTRUCTION
   A EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING ABOVE THE EXISTING GRADE GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF TWO AND A HALF FEET HORIZONTAL TO ONE FOOT VERTICAL THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED FROM THE ACCESS ROAD EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS) OR ANY SUITABLE, APPROVED SOIL OBTAINED OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 9"
   B SIDE SLOPES GREATER THAN 2 5 1 WILL NOT BE PERMITTED UNLESS OTHERWISE NOTED ON THE PLAN

STORM WATER DESIGN PARAMETERS

1 MAINTENANCE OF STORMWATER DEVICES SHOULD BE EXPECTED OVER THE LIFE OF THE PROJECT AND PARTICULARLY AFTER HEAVY RAINFALL EVENTS

TESTING REQUIREMENTS
1 TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY
2 SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW
   A THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK
3 PROOF ROLLING
   A PROOF-ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1 5 INCHES, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK
4 SIEVE ANALYSIS
   A SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH AASHTO T27
5 PROCTOR
   A PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557
6 ATTERBERG LIMITS
   A ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T89 AND T90
7 MOISTURE DENSITY (NUCLEAR DENSITY)
   A MOISTURE DENSITY TESTING SHALL BE DONE IN ACCORDANCE WITH AASHTO T310

SUBGRADE COMPACTION, TEST ROLLING AND AGGREGATE BASE COMPACTION
1 FILL MATERIAL
   A SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS (MODIFIED DRY MAXIMUM DENSITY)
      a FOR PLACED & COMPACTED FILLS PROVIDE ONE COMPACTION TEST PER LIFT FOR EVERY 1000 FT OF ROAD LENGTH INCLUDE THE LOCATION, DRY DENSITY, MOISTURE CONTENT, AND COMPACTION PERCENT BASED ON MODIFIED PROCTOR MAXIMUM DRY DENSITY
   B IN ROADWAY CUT AREAS OR WHERE EMBANKMENT CONSTRUCTION REQUIRES LESS THAN 12 INCHES OF FILL PLACEMENT COMPACT TO A MINIMUM OF 95 PERCENT OF THE MATERIAL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY
2 COMPACTED SUBGRADE
   A THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE
   B IF PROOF ROLLING DETERMINES THAT THE SUBGRADE STABILIZATION CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATIVES WILL BE IMPLEMENTED
      a REMOVE UNSUITABLE MATERIAL AND REPLACE WITH SUITABLE EMBANKMENT
      b SCARIFY, DRY, AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOF ROLL
      c INCREASE ROAD BASE THICKNESS
   C PROVIDE 1 MOISTURE DENSITY COMPACTION TESTS FOR EVERY 1000 L F OF ROAD LENGTH COMPACTED SUBGRADE MUST BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY AT ±3% OF OPTIMUM MOISTURE CONTENT FOR GRANULAR SOILS AND AT -1 TO +3% OF OPTIMUM MOISTURE CONTENT FOR COHESIVE SOILS
3 AGGREGATE BASE
   A AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH PROVIDE 1 SIEVE ANALYSIS PER 2500 CY OF ROAD BASE PLACED
      a IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL

GENERAL NOTES
1 THE PLANIMETRIC FEATURES, GROUND SURFACE CONTOURS ON A DTM SURFACE PROVIDED BY NOAA
2 NO GRADING OR SOIL DISTURBANCE IS PERMITTED OUTSIDE OF THE GRADING LIMITS IDENTIFIED ON THE PLANS
3 GRADE ALL PROPOSED ROADS TO THE SLOPES PROPOSED ON THE PLANS
4 THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE CHANNEL CAUSING RAINWATER TO POND ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED AS APPROVED BY THE ENGINEER
5 THE CONTRACTOR SHALL NOTIFY DIGSAFE AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
1 REFER TO THE SWPPP BOOKLET FOR SEDIMENT AND EROSION CONTROL PROCEDURES LOCATIONS OF BMPs, DETAILS AND INSPECTION INFORMATION
2 ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP PLAN
3 TEMPORARY EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THE TEMPORARY EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH STATE OF MASSACHUSETTS THE EPA, AND THE SWPPP ON FILE

SLOPE STABILIZATION
ALL AREAS DESIGNATED ON THE PLAN FOR SLOPE STABILIZATION SHALL BE GRADED AND COMPACTED, SMOOTH AND CLEAN TO THE FINISH CONTOURS SHOWN ON THE PLAN, WITH A MINIMUM OF 4 INCHES OF TOPSOIL PLACED ON THE AREA STABILIZATION SHALL BE ACHIEVED IN ONE OF TWO MANNERS
EITHER 1) RIP-RAP
OR 2) SEED WITH EROSION CONTROL AND REVEGITATION MAT (ECRM)
1 PLACEMENT OF RIP-RAP
   RIP-RAP SHALL CONSIST OF 050-8" BEFORE ANY RIP RAP IS PLACED, THE SURFACE TO BE COVERED SHALL BE FULLY COMPACTED AND GRADED TO THE REQUIRED SLOPE PLACE MIRAFI TM8 OR APPROVED EQUAL GEOTEXTILE ON SLOPE RIP RAP ON SLOPES SHALL NOT BE LESS THAN 12 INCHES THICK MEASURED PERPENDICULAR TO THE SLOPE
2 STABILIZATION WITH EROSION CONTROL AND REVEGITATION MAT (ECRM)
   1) AREA MUST BE GRADED SMOOTH AND CLEAN TO FINISH GRADES, AND COMPACTED
   2) SEED AND MULCH AREA USE SEED MIX APPROVED BY THE ENGINEER
   3) INSTALL ECRM PER MANUFACTURER'S INSTRUCTIONS, HOWEVER THESE MUST INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS
      A) GRADE GROUND TO FINISH CONTOURS REMOVE ALL ROCKS DIRT CLODS, STUMPS, ROOTS, TRASH, AND OTHER OBSTRUCTIONS LYING IN DIRECT CONTACT WITH THE SOIL SURFACE
      B) DIG MAT ANCHOR TRENCHES (MINIMUM 12"DEEP, 6" WIDE) AT TERMINAL ENDS AND PERIMETER SIDES WHERE MAT IS TO BE INSTALLED
      C) INSTALL MAT BY ROLLING UPHILL PARALLEL TO WATER FLOW, STARTING AT TRENCH OVERLAP ROLLS BY MINIMUM OF 3" FASTEN TO GROUND WITH 18" PINS AND 1 1/2" WASHERS, OR EQUIVALENT PIN MAT AT ENDS, AND EVERY 3' TO 5' ALONG OVERLAPS DO NO STRETCH MAT, SPLICING ROLLS SHOULD BE DONE IN A CHECK SLOT BACKFILL TO COVER ENDS AND FASTENERS, ROLLING MAT ACROSS BACKFILL AND PIN AGAIN
   FOR MAT USE MIRAFI MIRAMAT TM8 OR EQUIVALENT

SEEDING
1 COMPOSITION OF SEED MIX CHANGES YEARLY SEED SPECIFICATIONS MUST BE SUBMITTED TO ENGINEER 2 WEEKS PRIOR TO INSTALLATION ALL SPECIES MUST BE NATIVE TO WORCESTER COUNTY
2 RESTORED AREAS TO BE SEEDED WITH ABOVE MIX OR EQUAL (SUBJECT TO ENGINEERS APPROVAL) SEED TO BE LIGHTLY RAKED TO ALLOW FOR PROPER SEED/SOIL CONTACT,
3 CONTRACTOR SHALL OVERSEED AND/OR RE-MULCH AS NECESSARY TO ESTABLISH A GOOD COVER OF VEGETATION WHETHER DUE TO POOR INITIAL COVER, INCLEMENT WEATHER BEFORE/DURING/AFTER SEEDING, OR THE ONSET OF WINTER
4 RILLING, GULLIES, OR OTHER EROSION DUE TO POOR COVER SHALL BE RAKED AND/OR REFILLED AND REMULCH/RESEEDED
5 CONTRACTOR SHALL WARRANTEE SEEDING, MULCHING AND EROSION CONTROL FABRIC FOR ONE YEAR FROM THE SUBSTANTIAL COMPLETION OF THE RELEVANT AREA OF WORK

INVASIVE SPECIES:

1. **ALL EQUIPMENT SHALL BE INSPECTED UPON ARRIVAL. EQUIPMENT ARRIVING WITH OBSERVABLE SOIL OR PLANT FRAGMENTS WILL BE REMOVED AND CLEANED.**
2. **HAY BALES ARE NOT BE USED ON SITE; ONLY WEED-FREE STRAW BALES ARE APPROVED.**
3. **OFF-SITE TOPSOIL MUST BE FREE OF INVASIVE SPECIES. THE ENGINEER SHALL BE NOTIFIED OF THE TOPSOIL SOURCE 6 WEEKS BEFORE DELIVERY.**

TABLE 3: TESTING SCHEDULE SUMMARY

LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTENBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
	MOISTURE DENSITY	1 PER 2,000 CY OR MIN. 1 PER LIFT
COMPACTED SUBGRADE	PROOF-ROLL	ENTIRE LENGTH
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 1,000 FT OR MIN 5 FOR THE SITE
AGGREGATE BASE	PROOF-ROLL	ENTIRE LENGTH
	SIEVE ANALYSIS	1 PER 2,500 CY

PROJECT SIGN:

HOURS OF OPERATION:
MONDAY THRU SATURDAY 7 00AM - 7 00 PM WITH NO EQUIPMENT STARTING UNTIL 7 00 AM
SUNDAY 9 00AM - 5 00 PM WITH NO EQUIPMENT STARTING UNTIL 8 00 AM
NO OPERATION OF MACHINERY FOR WARM UP OR MAINTENANCE OUTSIDE OF THE ABOVE HOURS
NO CONSTRUCTION OPERATIONS TO OCCUR ON NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, CHRISTMAS DAY
EMERGENCY REPAIRS AND MAINTENANCE, INCLUDING SNOW PLOWING, MAY OCCUR AT ANY TIME
WHILE SCHOOL IS IN SESSION ALL DELIVERIES SHALL BE SCHEDULED TO AVOID SCHOOL BUS ROUTES DURING THEIR HOURS OF PICK-UP AND DROP-OFF
OPERATIONS MUST COMPLY WITH ANY OTHER TOWN NOISE OR HOURS OF OPERATION RESTRICTIONS
CONTACT INFORMATION:
OWNER/DEVELOPER - ECOS ENERGY 612-326-1500
ODIS - LEE JARVIS - 508-885-7500 X180
WARE POLICE - SHAWN CREVIER - 413-967-3571
WARE CONSERVATION COMMISSION - DAVID KOPACZ - 413-967-9648 X 114
CONTRACTOR - _____ - _____

APPROVED CERTIFICATE OF DECISION SP-2018-04 & SPR-2018-06

GENERAL
1 DEVELOPER WILL BE HELD TO ALL APPLICABLE STATE AND LOCAL REQUIREMENTS
2 PRIOR TO APPLYING FOR A CONSTRUCTION/BUILDING PERMIT, THE CONSTRUCTION BOND, IN AN AMOUNT AGREED UPON, SHALL BE PAID, PROOF TO BE SUBMITTED TO THE PLANNING BOARD PRIOR TO BUILDING, APPLICANT SHALL MEET WITH REPRESENTATIVES OF ALL APPLICABLE BOARDS AND COMMISSIONS FOR A PRECONSTRUCTION MEETING TO DETERMINE CURRENT BEST PRACTICES
3 THE WARE PLANNING BOARD RESERVES THE RIGHT TO CONDUCT SITE VISITS DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT SCHEDULED WITH THE DEVELOPER THE PLANNING BOARD RESERVES THE RIGHT TO MODIFY THE SCREENING WITHIN REASON, AT THE COST OF THE APPLICANT
4 ANY MAJOR CHANGES TO THE PLANS APPROVED BY THIS PERMIT MUST BE REVIEWED BY THE DIRECTOR OF PLANNING &1 COMMUNITY DEVELOPMENT (PCD), PRIOR TO IMPLEMENTATION, TO DETERMINE IF THEY CONSTITUTE A CHANGE SIGNIFICANT ENOUGH TO REQUIRE MODIFYING THE EXISTING SPECIAL PERMIT AND ADDITIONAL PUBLIC HEARINGS A "MAJOR CHANGE" IS A CHANGE IN THE APPROVED PROJECT THAT WOULD HAVE THE POTENTIAL FOR SIGNIFICANT IMPACT WITH RESPECT TO § 7 2 4 OF THE WARE ZONING BYLAW
5 TOWN OF WARE OFFICIALS (TOWN MANAGER AND PLANNING BOARD VIA THE PCD DEPARTMENT) SHALL BE NOTIFIED BY CERTIFIED MAIL THIRTY (30) DAYS PRIOR TO ANY CHANGE OF OWNERSHIP OF THE PROPERTY, LEASE HOLDER AND/OR PLANT OPERATING COMPANY WITHIN THIRTY (30) DAYS OF SUCH NOTICE, OR AT A MUTUALLY-CONVENIENT TIME, THE NEW PARTY SHALL ARRANGE TO MEET WITH THE PLANNING BOARD TO REVIEW THE OPERATING CONDITIONS OF THE SPECIAL PERMIT, OR AS SOON AS CONVENIENT TO BOTH PARTIES, PROVIDED THAT THIS PROVISION SHALL NOT APPLY WITH RESPECT TO ANY TRANSFER OF OWNERSHIP THROUGH A SALE-LEASEBACK FINANCING ARRANGEMENT WHEREBY THE APPLICANT CONTINUES TO OPERATE THE PROJECT
6 THE SPECIAL PERMIT SHALL BE RECORDED AT THE HAMPSHIRE DISTRICT REGISTRY OF DEEDS AND A CERTIFIED COPY OF THE RECORDING PROVIDED TO THE PCD DEPARTMENT
7 THE SPECIAL PERMIT MUST BE RECORDED AT THE HAMPSHIRE DISTRICT REGISTRY OF DEEDS WITHIN 30 DAYS AFTER THE APPEAL PERIOD HAS ENDED, OR 30 DAYS AFTER THE DECISION ON ANY APPEAL, OR THE PERMIT SHALL BECOME VOID
8 WORK MUST COMMENCE WITHIN TWO (2) YEARS OF THE APPROVAL DATE BY THE BOARD OR AN EXTENSION REQUEST MUST BE FILED AT LEAST 30 DAYS PRIOR TO THE END OF THE 2-YEAR PERIOD, WITH SUCH EXTENSION APPROVAL NOT TO BE UNREASONABLY WITHHELD OR DELAYED IF THE APPLICANT CAN DEMONSTRATE GOOD CAUSE OR THAT SUCH EXTENSION WAS REQUIRED AS A DIRECT RESULT OF THE TIMELINE ACCORDING TO THE DEPARTMENT OF ENERGY RESOURCES FOR THE SOLAR MASSACHUSETTS RENEWABLE TARGET (SMART) PROGRAM OR OTHER SIMILAR PROGRAM
9 ALL APPLICABLE LOCAL, STATE, AND FEDERAL PERMITS AND APPROVALS MUST BE IN PLACE PRIOR TO THE START OF CONSTRUCTION AND OPERATIONS
10 APPLICANT WILL COMPLY WITH ALL LAWFUL LAWS, REGULATIONS AND REQUIREMENTS OF THE TOWN OF WARE, COMMONWEALTH OF MASSACHUSETTS, AND THE UNITED STATES OF AMERICA, THE STRICTEST OF WHICH SHALL PREVAIL

BONDS/SURETIES
11. PRIOR TO COMMENCING OPERATION, A FINANCIAL SURETY IN THE AMOUNT OF ONE PERCENT OF THE PROJECT CONSTRUCTION COSTS (ES SUBMITTED ON THE BUILDING PERMIT APPLICATION) SHALL BE PROVIDED AS REQUIRED IN §4 8 3 H 5 OF THE WARE ZONING BYLAW
12 AT THE COMPLETION OF CONSTRUCTION, A PROJECT DECOMMISSIONING BOND SHALL BE PUT INTO PLACE AT AN AGREED UPON SUM BY THE PLANNING BOARD SALVAGE OF SOLAR PANELS SHALL NOT BE ESTIMATED INTO THE BOND
13 SATISFACTORY COMPLETION OF CONSTRUCTION SHALL BE A PROJECT THAT HAS ALL MAJOR COMPONENTS IN PLACE, ALL SITE WORK COMPLETED AND ALL CONSTRUCTION PERMITS (CONSERVATION, BUILDING, ELECTRICAL, ETC) PROPERLY CLOSED OUT OR IN COMPLIANCE WITH ALL REGULATIONS AND REQUIREMENTS

SITE CONDITIONS
14 TOP SOIL WILL NOT BE LEFT WITHOUT SEDIMENTATION CONTROLS FOR A PERIOD OF LONGER THAN THIRTY (30) DAYS
15 HYDRO SEEDING (OR A COMPARABLE METHOD) WILL INCLUDE A TACKIFIER IN ORDER TO ENSURE THAT THE SEED MEDIA ADHERES TO THE SOIL PARTICLES, OR, IF HYDROSEED (OR A COMPARABLE METHOD) IS NOT USED, STRAW BALES (NOT HAY), OR OTHER COMPARABLE, APPROVED CONTROLS WILL BE USED AND MAINTAINED AS SEDIMENTATION CONTROLS
16 NO CHEMICAL HERBICIDES OR FUNGICIDES SHALL BE SUED ON SITE OTHER THAN THOSE APPROVED BY THE WARE CONSERVATION COMMISSION, THE PLANNING BOARD, VIA THE PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT STAFF, SHALL BE COPIED ON APPROVED USES
17 THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR RESTORING THE PROPERTY TO A STABLE CONDITION SHOULD THE SOLAR LESSEE, CONSTRUCTION ENTITY, OPERATOR, OR ANY OTHER OPERATOR ON THE PROPERTY, FAIL TO COMPLETE THE PROJECT
18 NO CONTINUOUSLY ON LIGHTS SHOULD BE PRESENT MOTION DETECTOR LIGHTS AT GATE AND EQUIPMENT ARE PERMITTED, PROVIDED THEY CAN BE PREVENTED FROM MIS-CYCLING CAUSED BY WILDLIFE
19 ALL FENCING, GATES, ETC SHALL BE A DARK, EARTH TONE COLOR SUCH AS DARK GREEN, BLACK, DARK RED, ETC AND SHALL BE MINIMALLY 6" ABOVE THE GROUND FOR WILDLIFE MOVEMENT
20 GLARE IMPACTING ANY ABUTTERS SHALL BE MITIGATED BY THE APPLICANT TO THE EXTENT PRACTICABLE IN COOPERATION WITH STATE AND LOCAL OFFICIALS
21 CONNECTION LINES SHALL BE INSTALLED UNDERGROUND VIA BORING AT SOUTHERN PART OF PROPERTY, AWAY FROM ABUTTERS
22 ANY NEW POLES TO BE INSTALLED WILL BE AT THE DISCRETION OF NATIONAL GRID
23 THERE WILL BE NO SOIL REMOVED FROM SITE
24 THE CONSTRUCTION AREA LIES ADJACENT TO A WATER SUPPLY PROTECTION AREA AND PRIVATE WELLS THEREFORE, ALL EQUIPMENT REFUELING SHOULD OCCUR AS CLOSE TO MONSON TURNPIKE ROAD AS POSSIBLE A SPILL KIT INCLUDING ADSORBENTS MUST BE PRESENT AT THE SITE AT ALL TIMES FOR ALL EQUIPMENT
25 NO DIESEL FUEL TRAILER TO BE USED ON SITE IN ORDER TO AVOID SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) RULE PROBLEMS
26 OPERATORS MUST BE TRAINED TO REPORT AND RESPOND TO FUEL, LUBRICANT, HYDRAULIC OR OTHER RELEASES A REPORTABLE SPILL IS TYPICALLY A RELEASE OF 10 OR MORE GALLONS OF A MATERIAL CHECK THE PERTINENT MASSDEP REPORTABLE QUANTITIES LIST FOR APPLICABLE SUBSTANCES WHEN IN DOUBT, CONTACT THE WARE FIRE DEPARTMENT
27 IN NO CASE SHALL THE PROJECT OPERATOR ALLOW THE SITE TO CAUSE EXCESSIVE RUNOFF TO CREATE A DANGEROUS CONDITION ALONG THE ROADWAY, OUTSIDE OF EXTRAORDINARY STORM CONDITIONS AS EVIDENCED BY SIMILAR ISSUES IN THE ADJACENT AREAS
28 APPLICANT UNDERSTANDS THAT THE WARE POLICE DEPARTMENT WILL NOT POLICE THEIR UNFENCED PROJECT, THAT SITE SECURITY IS SOLELY IN THE APPLICANT'S CARE
29 OTHER THAN THE PROPOSED AREA OF CONSTRUCTION, THERE WILL BE NO DEFORESTATION OTHER THAN THROUGH AN APPROVED FORESTRY CUTTING PLAN

Westwood
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DATE SIGNED 04/01/2022

Designed AJS
Checked MPG
Drawn AJS
Record Drawing by/date

Revisions #	DATE	DESCRIPTION
A	08/05/2019	WARE PLANNING SUBMISSION
B	07/02/2019	WARE PLANNING SUBMISSION
C	08/08/2019	WARE PLANNING SUBMISSION
D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for
ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

CIVIL NOTES

NOT FOR CONSTRUCTION
WARE PLANNING SUBMISSION

DATE: 04/01/2022
SHEET: 17

Bk: 14548 Pg: 246

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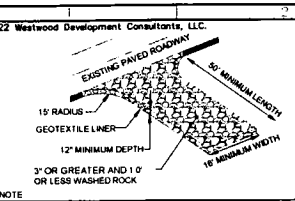
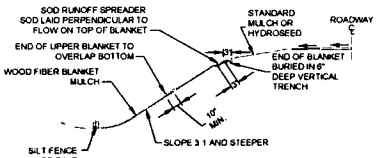


NOTE

ROCK CONSTRUCTION ENTRANCE SHOULD BE A MINIMUM THICKNESS OF 1.0' AND CONTAIN MAXIMUM SIDE SLOPES OF 4:1. ROCK ENTRANCE SHOULD BE INSPECTED AND MAINTAINED REGULARLY. ROCK ENTRANCE LENGTH MAY NEED TO BE EXTENDED IN CLAY SOILS

ROCK CONSTRUCTION ENTRANCE



EROSION CONTROL BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)

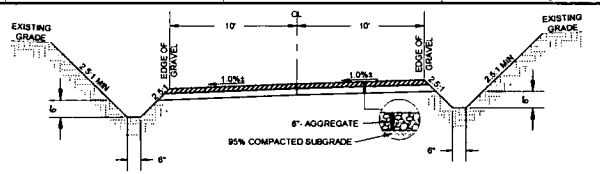
CATEGORY	SLOPE	VELOCITY
1	FLAT	< 5.0 fps
2	3:1	< 6.5 fps
3	3:1	< 7.0 fps
4	2:1	< 7.0 fps

CATEGORY	ACCEPTABLE TYPES
1	STRAW RD 1S, WOOD FIBER RD 1S
2	STRAW 1S, WOOD FIBER 1S
3	STRAW 2S, WOOD FIBER 2S
4	STRAW/COCONUT 2S, WOOD FIBER HV 2S

THE LETTERING DESIGNATION SHALL BE DEFINED AS FOLLOWS

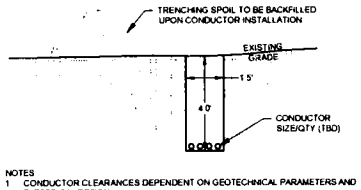
1S - NETTING ON ONE SIDE
RD - RAPIDLY DEGRADABLE
2S - NETTING ON TWO SIDES
HV - HIGH VELOCITY

EROSION CONTROL BLANKET



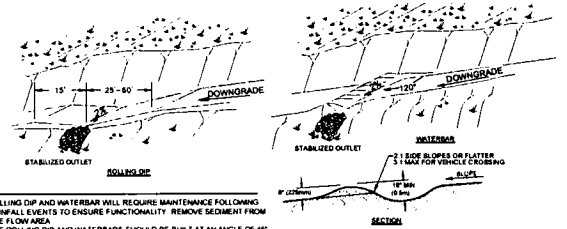
NOTES
1 CONTRACTOR TO SUBCUT ROADWAY TO EXISTING GRADE ELEVATION TO MAINTAIN EXISTING SITE DRAINAGE PATTERNS WHEREVER POSSIBLE
2 IN FILL LOCATIONS CONTRACTOR TO GRADE TOE OF SLOPE TO EXISTING GRADE, AND MAINTAIN NATURAL DRAINAGE PATTERNS
3 IN CUT LOCATIONS CONTRACTOR TO CREATE DRAINAGE CHANNEL ON DOWNSTREAM SIDE, REFER TO GRADING PLANS FOR DETAILS
4 CONTRACTOR TO COMPACT AGGREGATE TO 95% MAXIMUM DRY DENSITY
5 THE DITCH SHOWN ABOVE IS LOCATED AT ROADWAY B FROM STATION 7+40 TO 15+31

ACCESS ROAD AND DITCH DETAIL (CUT SECTION)



NOTES
1 CONDUCTOR CLEARANCES DEPENDENT ON GEOTECHNICAL PARAMETERS AND ELECTRICAL DESIGN
2 CONDUCTOR SIZING AND QUANTITIES PER TRENCH DEPENDENT ON FINAL ELECTRICAL DESIGN TRENCH DIMENSIONS

TRENCHING DETAIL- WITHIN ARRAY FIELD



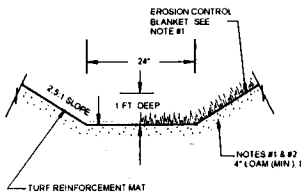
NOTE

1 ROLLING DIP AND WATERBAR WILL REQUIRE MAINTENANCE FOLLOWING RAINFALL EVENTS TO ENSURE FUNCTIONALITY. REMOVE SEDIMENT FROM THE FLOW AREA
2 THE ROLLING DIP AND WATERBARS SHOULD BE BUILT AT AN ANGLE OF 45° TO 60° FROM THE CENTERLINE
3 THE DIVERSION SHOULD HAVE A POSITIVE GRADE OF 2% MINIMUM
4 FOR ROLLING DIPS, THE HEIGHT FROM CHANNEL BOTTOM TO THE TOP OF THE SETTLED RIDGE SHALL BE 18 INCHES AND THE SIDE SLOPES OF THE RIDGE SHALL BE 2:1 OR FLATTER
5 OUTLET DIVERSIONS SHOULD HAVE STABLE OUTLETS EITHER NATURAL OR MANMADE
6 REFER TO TABLE 1 FOR SPACING RECOMMENDATIONS FOR SPECIFIC ACCESS ROAD SLOPES

TABLE 1 ROLLING DIP AND WATERBAR SPACING RECOMMENDATIONS

SLOPE (%)	SPACING (FT)
<5	125
5-10	100
10-20	75

ROLLING DIP AND WATER BAR



DRAINAGE CHANNEL SIZING

1 DRAINAGE CHANNEL TO SAND FILTERS SHALL BE 1.0' DEEP, 2' WIDE BOTTOM 2:1 SIDE SLOPES

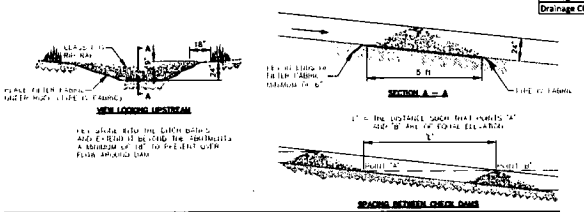
DRAINAGE CHANNEL

DRAINAGE CHANNEL NOTES

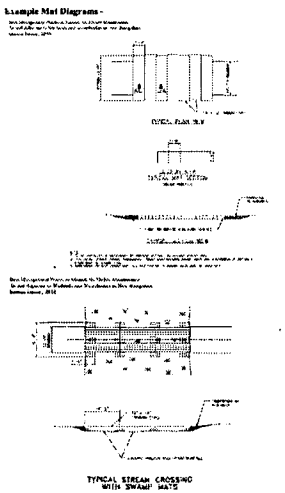
1 GRASS DRAINAGE CHANNEL CROSS SECTION 4" OF LOAM TO BE SEEDED WITH APPROVED SEED MIX. SEED TO BE LIGHTLY RAKED INTO LOAM TO ALLOW FOR PROPER SEED/SOIL CONTACT
2 EROSION CONTROL BLANKET SHALL COVER ALL DRAINAGE CHANNELS AND BE INSTALLED AS PER MANUFACTURES' SPECIFICATIONS
3 TURF REINFORCEMENT MAT (TRM) WILL BE USED FOR ANY SECTION OF THE CHANNEL THAT HAS A SHEAR STRESS GREATER THAN 1LB/FT^2 ROLLMAX VMAX P550 TURF REINFORCEMENT MAT OR APPROVED EQUAL MUST BE USED FOR INSTALLATION
4 INSTALL CHECK DAMS EVERY HUNDRED FEET IN DRAINAGE CHANNEL THAT HAS MORE THAN 5% SLOPE AND AT JOINTS IN THE GEOTEXTILE FABRIC. ANCHOR THE CHECK DAM TWO FEET INTO EITHER SIDE OF THE CHANNEL. SECURE THE FABRIC LAP NEAR THE CHECK DAM SO AS TO HINDER LAP SEPARATION

TABLE 1A DRAINAGE CHANNEL INSTALLATION TABLE

Drainage Channel	Sheer Stress (lbs/ft^2)	Lining
Upper 200 feet of Drainage Channel 2	7.8	Turf Reinforcement Mat
Lower Part of Drainage Channel 2	0.50	Grass
Upper 20 feet of Drainage Channel 3	10.87	Turf Reinforcement Mat
Last 130 feet of Drainage Channel 3	3.31	Turf Reinforcement Mat
First 130 feet of Drainage Channel 4	2.18	Turf Reinforcement Mat
Middle 30 feet of Drainage Channel 4	4.65	Turf Reinforcement Mat
Lower 90 feet of Drainage Channel 4	1.93	Turf Reinforcement Mat
Upper 30 feet of Drainage Channel 5	4.25	Turf Reinforcement Mat
Lower 300 feet of swale 5	0.28	Grass
First 180 feet of Upper Drainage Channel 6	0.25	Grass
180 feet to end of Upper Drainage Channel 6	0.94	Grass
460 feet to 950 feet of Upper Drainage Channel 6	0.81	Grass
Middle Drainage Channel 6 between proposed culverts	3.49	Turf Reinforcement Mat
Lower Drainage Channel 6	4.04	Turf Reinforcement Mat
Drainage Channel 7 first 40 feet and last 40 feet	0.98	Grass
Drainage Channel 7 middle 360 feet	0.22	Grass
Drainage Channel 8 first 200 feet	0.18	Grass
Drainage Channel 8 middle 150 feet	0.97	Grass
Drainage Channel 8 last 150 feet	2.29	Turf Reinforcement Mat
Drainage Channel 9 (roadside)	2.37	Turf Reinforcement Mat
Drainage Channel 10 first 150 feet	0.2	Grass
Drainage Channel 10 from 150 feet to 500 feet	0.71	Grass
Drainage Channel 10 from 500 feet to end	1.98	Turf Reinforcement Mat
Drainage Channel 11	1.07	Turf Reinforcement Mat
Drainage Channel 12	2.17	Turf Reinforcement Mat
Drainage Channel 13	1.09	Turf Reinforcement Mat
Drainage Channel 14	5.31	Turf Reinforcement Mat



ROCK CHECK DAM



TEMPORARY CONSTRUCTION MAT ROAD DETAIL

ACCESS ROAD DETAIL

Westwood

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DATE SIGNED 04/01/2022

Designed	JLB
Checked	MPG
Drawn	JLB
Record Drawing by/date	

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D	04/01/2022	DETAILS AND NOTES UPDATE

Prepared for

ecos ENERGY
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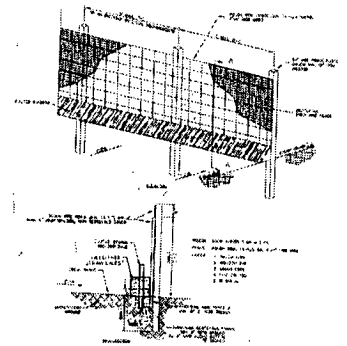
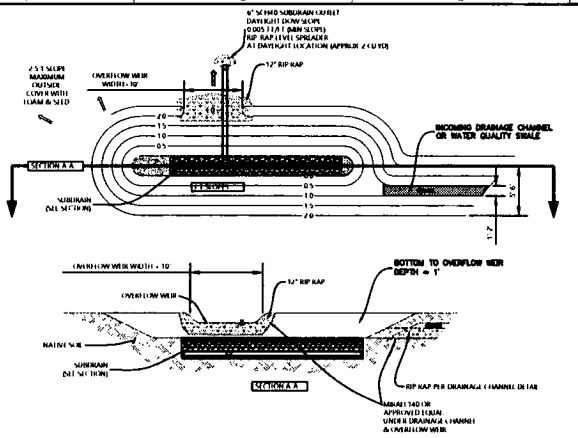
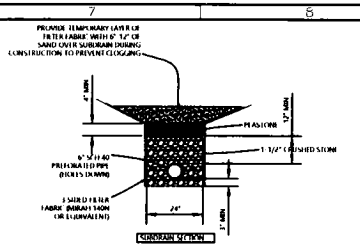


WIREBACKED WITH WEED FREE STRAW BALES SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES
2. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
3. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED
4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE
5. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS INDICATED OTHERWISE
6. WIREBACKED WITH WEED FREE STRAW BALES SILT FENCE TO BE USED AS NEEDED

WIREBACKED WITH HAYBALE SILT FENCE

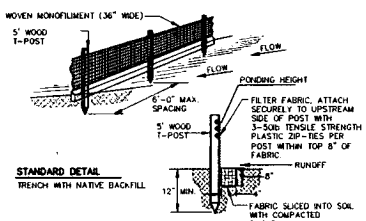




SAND FILTER AND SUB DRAIN DESIGN NOTES

1. THE CONTRACTOR SHOULD ENSURE THAT CARE IS TAKEN DURING EXCAVATION, BY MECHANICAL MEANS, OF THE BOTTOM OF THE SAND FILTER AREAS TO PROMOTE ANY AVAILABLE INFILTRATION
2. THE CONTRACTOR SHALL NOT TO COMPACT OR SMEAR THE SOIL AT THE BOTTOM OF EXCAVATIONS, VEHICULAR TRAFFIC IS NOT ALLOWED WITHIN THE FOOTPRINT OF THE FOREBAY/RECHARGE AREA BOTTOM
3. CONTRACTOR TO INSTALL ORANGE SNOW FENCE AROUND THE FOREBAY/RECHARGE AREA AFTER INITIAL CONSTRUCTION/EXCAVATION OF THE BMP FOR PROTECTION OF THE AREAS DURING CONSTRUCTION OPERATIONS
4. SAND FILTERS SHALL ACT AS TEMPORARY SAND FILTER DURING CONSTRUCTION OF THE PROJECT
5. SUBDRAINS SHALL BE THE LOW POINT OF THE SAND FILTER BOTTOMS

SAND FILTER AND SUBDRAIN DETAIL



NOTE:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN ACCUMULATED TO 1/2 THE HEIGHT OF THE FABRIC OR MORE.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY
4. ALL ENDS OF THE SILT FENCE SHALL BE WRAPPED UPSLOPE SO THE ELEVATION OF THE BOTTOM OF FABRIC IS HIGHER THAN "PONDING HEIGHT"

SILT FENCE

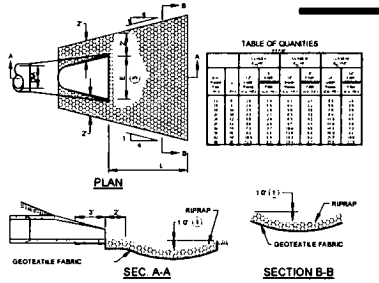


TABLE OF QUANTITIES

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