No: 26-041

# DAUPHIN COUNTY SUBDIVISION/LAND DEVELOPMENT REVIEW REPORT

| | | | | | |
|---|---|---|---|---|---|
| Municipality | Gratz Borough | Surveyor | Honor Engineering | Engineer/RLA | Kimly-Horn & Associates |

Plat Title: G. Morris Solar LLC C/O Birch Creek Development, LLC

Zoning District: Conservation (C-1), Single family Residential (R-1), Two-Family Residential (R-2) & General Commercial (B-2)

Proposed Land Use: Major Solar Energy System

| | | | | | |
|---|---|---|---|---|---|
| **Plat Status**: | Preliminary | **Plat Type**: | X Subdivision | **Regulations**: | County |
| | X Final | | X Land Development | | X Municipal |
| | P/F | | Combined | | X Zoning |
| | Minor | | | | X S&LD |

| Existing # of Lots | Proposed # of Lots | Proposed # of New DUs | Acreage of New Lots | Total Acres |
|---|---|---|---|---|
| 7 | 9 | 0 | Not Provided | 197.47 |

Date Received: 04/14/2026 Staff Review: 04/21/2026 Official County Review: 04/21/2026

Reviewed by BS Checked by TS Parcel ID: 27-001-007, 27-001-001, 27-001-002, 27-001-012, 27-001-016, 27-002-012, & 27-006-001

- *When applicable, streets, sewer, water, storm drainage, and other infrastructure elements to be verified as adequate by municipal staff/engineer. Any improvement guarantees shall be posted prior to final plat approval.*
- *Registered PA Land Surveyor is required to certify all lot/tract boundary descriptions.*
- *When applicable, zoning compliance to be verified by Municipal Zoning Officer.*
- *Appropriate sewage module component should be processed prior to final plat approval.*
- *Final plats must be recorded within 90 days of approval.*

**Review comment with cited ordinance provisions are based on municipal regulations on file with the *County Planning Commission.***

Purpose: Proposed Major Solar Energy System (MSES) & Two Lot Subdivision

Waivers/Variances Requested:

Comments:

1. Lykens Township should afforded the opportunity to review and comment on the proposed plan as part of the development property is located in their municipality.
2. Major Solar Energy Systems (MSES) are Conditional Use in the Conservation (C-1) Zoning District. The proposed plan shows the MSES use being proposed in the Single Family Residential (R-1), Two Family Residential (R-2), and the General Commercial (B-2) Zoning Districts where the use is not permitted.
3. Tract 1 & Tract 2-A need to be reviewed to determine if §305 of the Gratz Borough Zoning Ordinance is applicable to them since these lots are divided by multiple zoning districts.
4. The following tracts are in an Agricultural Security Area: Tract 2, Tract 2-A, Tract 2-B, and Tract 6. It needs to be determined if the proposed use is allowed in this area.
5. Majority of the proposed development is located on Prime Agricultural Soils and it needs to be determined if additional protections are required.
6. The following Tracts are enrolled in the Clean & Green Program (Act 319), Tract 1, Tract 2-A, Tract 3, Tract 4, Tract 5, and Tract 6. The Dauphin County Conservation District & Assessment

Office needs to be contacted to determine if the proposed use is allowed on these properties and to see if there is going to be a change in assessment.

7. The proposed lot coverage needs to be shown to ensure it is in compliance with §504 of the Zoning Ordinance.
8. Plan Sheet C-051 indicates that tax parcel 27-001-007 is being subdivided by creating Proposed Lot 4 and Proposed Lot 4A. Plan Sheet L-101 shows these lots being combined into one parcel. It needs to be clarified if these lots are being subdivided or combined.
9. The acreages for Proposed Lot 4 and Lot 4-A need to be shown.
10. The existing 20-foot Right of Way for West North Street that extends through tax parcel 27-001-007 and connects to Valley Drive Road (SR 1020) needs to be shown.
11. §433.4 of the Zoning Ordinance prohibits the creation of "Flag Lots". This section needs to be reviewed to see if creation of Proposed Lot 4-A is impacted by this section.
12. Proposed Lot 4-A is a double frontage lot and §504.2 of the Gratz Borough Subdivision and Land Development Ordinance (SALDO) needs to be reviewed to ensure the lot meets the requirements.
13. A proposed access road from Valley Drive Road into tax lot 27-001-007 is shown traveling through Proposed Lot 4-A. An access easement should be considered for this section of road since it is accessing a separate parcel.
14. The proposed Central Water and Sewer connections for Proposed Lot 4-A need to be shown per §604 of the SALDO.
15. It needs to be determined if percolation tests are required per §504.E of the SALDO.
16. It needs to be determined if the BES Substation is allowed use in the Conservation District.
17. Consideration should be given to the development of an Emergency Response Plan for the BES Substation and having it reviewed by the Borough's Emergency Management personnel.
18. The grading and excavation plan should be reviewed by the Borough Engineer to determine if it meets the requirements of §423 of the Zoning Ordinance.
19. The proposed cul-de-sac needs to be reviewed to ensure it meets the requirements of §501.10 of the SALDO as the maximum length allowed is 500 feet.
20. The cartway width of the proposed cul-de-sac needs to be reviewed as the minimum width needs to be 34 feet per §501.9 of the SALDO.
21. The proposed cul-de-sac stream crossing needs to be shown.
22. The proposed cul-de-sac is named West Street. It needs to be clarified if this newly created road is going to be a Borough Road or Privately owned and maintained. If the cul-de-sac is going to be privately owned, then §501.14 of the SALDO needs to be reviewed to ensure it is properly named.
23. The proposed cul-de-sac design needs to be reviewed to ensure it meets the requirements on §603 of the SALDO.
24. The proposed slope of the cul-de-sac should be shown on the plan.
25. It should be shown if there are any steep slope areas impacted by the proposed development.
26. The stormwater management plan should be reviewed to ensure that it meets the requirements of §605 of the SALDO.
27. Bearings and Distances need to be shown for the proposed leased area provided for the BES Substation.
28. The lease holders information for the BES substation should be shown.

29. Bearings and distances for the parcels being developed need to be shown on the Land Development Plans.
30. The cartway widths for all roads need to be shown.
31. There is a proposed utility cut on Spruce Street. The Borough needs to ensure that the roadway is repaired appropriately.
32. The Borough needs to ensure that §602.56.P of the Zoning Ordinance is properly followed and reviewed by the Borough Engineer to ensure the roadways are left in good standard following completion of the proposed development. This report should include all Borough roads impacted by the development.
33. A noise study should be submitted per §602.56.R of the Zoning Ordinance.
34. A decommission plan should be submitted per §602.56.U of the Zoning Ordinance.
35. The proposed fencing needs to be reviewed to ensure it meets the requirements of §419 of the Zoning Ordinance in that a solid fence is required.
36. It needs to be clarified if the Solar Farm is going to be owned by the applicant or leased.
37. Note #13 on Plan Sheet C-051 states that any sign removed or damaged by the contractor will be replaced by the Borough. This note should be changed to stated that the Contractor will replace any removed or damaged sign.
38. §803 of the Zoning Ordinance needs to be reviewed to determine if the proposed roads need to meet the requirements of this section.
39. The design and placement of the proposed solar panels needs to be reviewed to ensure that there is no glare impact to neighboring properties and roadways.
40. The maximum height of the solar panels should be shown.
41. The Borough should verify that the approval blocks for Gratz Borough Council and the Gratz Planning Commission are correct.
42. The Dauphin County Review block needs to be corrected to state "On this day of the Dauphin County Planning Commission **reviewed** this plan".
43. The location, dimensions, and purpose of any easements are required to be displayed on the plan for reference. (S&LDO § 407.4) Furthermore, a minimum 15 foot easement shall be provided for all overhead and underground public utility facilities. (S&LDO § 502.a)
44. A copy of the application for a permit, or an issued and signed permit for earth moving activities is required. (S&LDO § 407.16(e))
45. Ensure the proposed private access road conforms to all applicable street design standards set forth in S&LDO § 501.
46. A drainage easement should be provided for the proposed swale (S&LDO § 502.b)
47. Written confirmation shall be provided to the Borough that the utility company the MSES will be connected to has been informed of and approves of the intent of such connection. (ZO § 602.56.B.5 per Ord No. 050222)
48. Is a solar easement being proposed for this development? If so, the solar easement shall be noted on the plan.
49. Ensure all signatures and certifications are in place before final approval.
50. Consider showing the connection between the proposed substation and the existing substation.

**Plan No.** 26-041

| Plat Specifications | Yes | No | N/A |
|---|---|---|---|
| 1. Name of proposed subdivision/land development shown | ✓ | | |
| 2. Owner/developer name, address & telephone number shown | ✓ | | |
| 3. Municipality name shown | ✓ | | |
| 4. Tax parcel number/Deed reference shown/Instrument # | ✓ | | |
| 5. North point shown | ✓ | | |
| 6. Map scale shown (written/graphic) | ✓ | | |
| 7. Date of plan preparation shown | ✓ | | |
| 8. Certification of surveyor/engineer/landscape architect shown **(NOT SIGNED)** | ✓ | | |
| 9. Location map shown | ✓ | | |
| 10. Total property map (bearings, distances, area, primary control point) shown | ✓ | | |
| 11. Names of adjacent landowners/subdivision shown | ✓ | | |
| 12. Lot numbers shown | ✓ | | |
| 13. Lot dimensions shown | ✓ | | |
| 14. Lot areas shown **(NOT ON PROPOSED LOTS)** | ✓ | | |
| 15. Permanent monuments and markers shown | ✓ | | |
| 16. Building setbacks shown | ✓ | | |
| 17. Existing natural features shown - Wetlands | ✓ | | |
| Floodplains | ✓ | | |
| Woodlands, streams, etc. | ✓ | | |
| 18. Contours at required interval shown | ✓ | | |
| 19. Easements shown and identified | | ✓ | |
| 20. Existing man-made features shown - Building (s) | | | ✓ |
| Storm drainage facilities | ✓ | | |
| Sewer mains | ✓ | | |
| Water mains | ✓ | | |
| 21. Proposed man-made features shown – Building (s) | | | ✓ |
| Storm drainage facilities | ✓ | | |
| Sewer disposal – public(✓) on-lot() | ✓ | | |
| Water supply – public (✓) well () | ✓ | | |
| 22. Existing streets shown - Name | ✓ | | |
| R/W width | ✓ | | |
| Paving width | | ✓ | |
| Dedicated R/W width | | ✓ | |
| 23. Proposed streets shown - Name | ✓ | | |
| R/W width | ✓ | | |
| Paving width | ✓ | | |
| Profiles | | ✓ | |
| 24. Curbs shown | | | ✓ |
| 25. Sidewalks shown | | | ✓ |
| 26. Existing and proposed coverage shown | | ✓ | |
| 27. Parking schedule provided shown | | | ✓ |
| 28. Traffic study completed | | ✓ | |
| 29. Recreation area shown/fee in-lieu-of provided | | | ✓ |
| 30. Erosion and sedimentation control plan shown | ✓ | | |
| 31. Statement of ownership, signature and notarization shown | | ✓ | |
| 32. Dedicatory statement shown | | ✓ | |
| 33. Approval blocks shown | ✓ | | |
| 34. PADOT Highway Occupancy Permit statement shown | ✓ | | |
| 35. Consistency with Future Land Use plans - County plans | | ✓ | |
| Municipal plans | | ✓ | |

# FINAL LAND DEVELOPMENT PLANS

## FOR

# *G. MORRIS SOLAR*

G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

**N 2ND ST**

**GRATZ, PA 17048**

## Sheet List Table

| Sheet Number | Sheet Title |
|---|---|
| C-000 | COVER SHEET |
| C-001 | INDEX SHEET |
| C-051 - C-054 | EXISTING CONDITIONS AND DEMOLITION PLANS |
| C-101 - C-104 | SITE PLANS |
| C-150 - C-151 | SITE NOTES AND DETAILS |
| C-201 - C-204 | EROSION AND SEDIMENT CONTROL PLANS |
| C-250 - C-256 | EROSION AND SEDIMENT CONTROL NOTES AND DETAILS |
| C-301 - C-304 | POST CONSTRUCTION STORMWATER MANAGEMENT PLANS |
| C-350 - C-355 | POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS |
| L-100 - L104 | LANDSCAPE PLAN |
| L-105 | LANDSCAPE NOTES, DETAILS, AND SCHEDULE |

## PROJECT DESCRIPTION NARRATIVE

THIS PROJECT PROPOSES THE INSTALLATION OF A ±17 MW GROUND-MOUNTED PRINCIPAL SOLAR ENERGY SYSTEM ACROSS 7 PARCELS THAT ARE COMPRISED OF A TOTAL OF ±197.47 ACRES. THIS PROJECT INCLUDES THE CONSTRUCTION OF AN SES (SOLAR ENERGY SYSTEM) WITH ASSOCIATED SOLAR ARRAYS, ACCESS ROADS, AND OTHER NECESSARY IMPROVEMENTS TO THE SITE.

## APPLICANT | OWNER | ENGINEER OF RECORD

1. **APPLICANT/OWNER:**

   G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
   2650 LOCUST ST, SUITE 100
   ST. LOUIS, MO 63103

   CONTACT: KATE MICKLE

2. **ENGINEER OF RECORD:**

   KIMLEY-HORN AND ASSOCIATES, INC.
   50 SOUTH 16TH STREET, SUITE 3300
   PHILADELPHIA, PA 19102
   267-687-0150
   CONTACT: PAUL HUGHES, P.E.

## Project Parcels

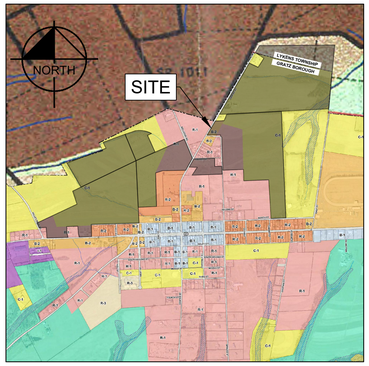
| Map Number | Parcel Number | Property Owner | Property Address |
|---|---|---|---|
| 1 | 27-001-007 | JOHN J. HARTMAN, SR. | 403 W MARKET ST, GRATZ, PA 17048 |
| 2 | 27-001-001 | JOHN J. HARTMAN, SR. | N MARKET ST, GRATZ, PA 17048 |
| 3 | 27-001-002 | AMY L. DANIELS & ISAIAH D. DANIELS, JR. | BELLEVUE ST, GRATZ, PA 17048 |
| 4 | 27-001-012 | ISAIAH D. DANIELS, SR., AMBER S. YERGER, AMY L. DANIELS, AMANDA N. HILEMAN, & ISAIAH D. DANIELS, JR. | CENTER ST, GRATZ, PA 17048 |
| 5 | 27-001-016 | BRUCE R. SCHADEL & TANYA A. SCHADEL | N 2ND ST, GRATZ, PA 17048 |
| 6 | 27-002-012 | HENRY S. BEILER & SARA ANN ZOOK | 399 CENTER ST, GRATZ, PA 17048 |
| 7 | 27-006-001 | DAVID E. WENGERT | 561 N CENTER ST, GRATZ, PA 17048 |

## REQUIRED PERMIT LIST

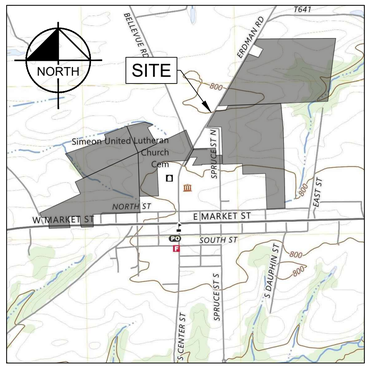
| | SUBMITTED | APPROVED | PERMIT NUMBER | EXPIRATION |
|---|---|---|---|---|
| 1. GRATZ BOROUGH CONDITIONAL USE APPROVAL | 04/28/2024 | 10/24/2025 | N/A | N/A |
| 2. GRATZ BOROUGH PRELIMINARY LAND DEVELOPMENT PLANS | 03/28/2025 | 10/08/2025 | N/A | N/A |
| 3. GRATZ BOROUGH FINAL LAND DEVELOPMENT PLANS | 01/30/2026 | - | N/A | N/A |
| 4. DAUPHIN COUNTY CHAPTER 102 NPDES GENERAL PERMIT | - | - | N/A | N/A |
| 5. DAUPHIN COUNTY CHAPTER 105 GENERAL PERMIT | - | - | N/A | N/A |
| 6. PENNDOT HOP PERMITS | - | - | N/A | N/A |



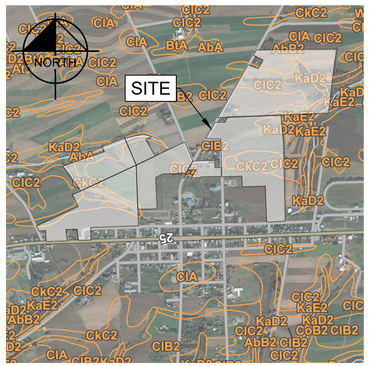

LOCATION MAP
(GOOGLE MAPS)
SCALE: 1" = 1,500'




ZONING MAP
(GRATZ BOROUGH & LYKENS TOWNSHIP)
SCALE: 1" = 1,500'




USGS MAP
(LYKENS, PA)
SCALE: 1" = 1,500'




SOILS MAP
(USGS SOILS MAP AERIAL IMAGERY)
SCALE: 1" = 1,500'

## PLAN REFERENCES

1. ATLA/NSPS LAND TITLE SURVEY PREPARED BY HONOR ENGINEERING CO. AND PROVIDED ON 09/09/2022.
2. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. JURISDICTIONAL WATERS ASSESSMENT PREPARED BY S&ME, INC. AND PROVIDED ON JULY 11, 2022.

**STATEMENT/CERTIFICATION REGARDING NO SEWAGE-RELATED USE**

WE (I), LANDOWNER(S), HEREBY CERTIFY THAT THIS SUBDIVISION IS NOT MADE FOR PURPOSES OF LAND DEVELOPMENT OR IMPROVEMENT FOR ANY USE THAT WOULD INVOLVE CONSTRUCTION OF FACILITIES FOR HUMAN OCCUPANCY INCLUDING RESIDENTIAL, BUSINESS, RECREATIONAL OR INSTITUTIONAL TYPE USES. THE LANDS HAVE NOT BEEN EXAMINED OR TESTED FOR FITNESS FOR SUITABILITY FOR SANITARY SEWAGE SYSTEM OR DISPOSAL PURPOSES. THE LANDS MAY NOT BE SUITABLE FOR AN ON-LOT SEWAGE DISPOSAL SYSTEM, AND MAY NOT QUALIFY FOR ISSUANCE OF THE NECESSARY GOVERNMENTAL APPROVALS AND PERMITS. CONSTRUCTION OF A PROPERLY PERMITTED SEWAGE DISPOSAL SYSTEM ON THE LANDS MAY BE IMPOSSIBLE. WITHOUT PROPER SEWAGE SYSTEM PERMITS AND APPROVALS BY NECESSARY AND APPROPRIATE MUNICIPAL OR GOVERNMENTAL OFFICIALS, NO PERMITS CAN OR SHALL BE ISSUED FOR ANY BUILDING CONSTRUCTION OR IMPROVEMENTS UNLESS DEMONSTRATED TO THE SATISFACTION OF MUNICIPAL OFFICIALS THAT THERE SHALL BE NO HUMAN OCCUPANCY OF THE BUILDING OR OTHER IMPROVEMENT FOR ANY RESIDENTIAL, BUSINESS, RECREATIONAL OR INSTITUTIONAL USE.

[SIGNATURE] [SIGNATURE] [SIGNATURE] [SIGNATURE]

[SIGNATURE] [SIGNATURE] [SIGNATURE] [SIGNATURE] [DATE]

**BOROUGH REVIEW STATEMENT**

ON THIS THE _____ DAY OF _____, 2____ THE GRATZ BOROUGH COUNCIL REVIEWED THIS PLAN.

[CHAIRMAN] [SECRETARY]

**PROFESSIONAL LAND SURVEYOR'S STATEMENT**

I, _____, HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF PENNSYLVANIA, THAT THIS PLAT CORRECTLY REPRESENTS A SURVEY COMPLETED BY ME, THAT ALL MONUMENTS SHOWN HEREON ACTUALLY EXIST, AND THAT THEIR LOCATION AND MATERIAL ARE ACCURATELY SHOWN.

[DATE] [SIGNATURE]

**DAUPHIN COUNTY PLANNING COMMISSION**

ON THIS THE _____ DAY OF _____, 2____ THE DAUPHIN COUNTY PLANNING COMMISSION APPROVES THIS PLAN.

[CHAIRMAN] [SECRETARY]

**GRATZ BOROUGH COUNCIL**

ON THIS THE _____ DAY OF _____, 2____ THE GRATZ BOROUGH COUNCIL APPROVES THIS PLAN.

[PRESIDENT] [SECRETARY]

**OWNERSHIP CERTIFICATION AND ACKNOWLEDGEMENT**

ON THIS THE _____ DAY OF _____, 2____, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED G MORRIS LLC c/o BIRCH CREEK DEVELOPMENT, WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THEY ARE THE OWNERS AND/OR EQUITABLE OWNERS OF THE PROPERTY SHOWN ON THE PLAN, AND THAT THE ACKNOWLEDGE THE SAME TO BE THEIR ACT AND PLAN AND DESIRE THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

OWNER OWNER OWNER

OWNER OWNER OWNER

MY COMMISSION EXPIRES INSTRUMENT NUMBER

DATE SIGNATURE OF NOTARY

[SEAL]

**GRATZ BOROUGH PLANNING COMMISSION**

ON THIS THE _____ DAY OF _____, 2____ THE GRATZ BOROUGH PLANNING COMMISSION APPROVES THIS PLAN.

[CHAIRMAN] [SECRETARY]

**DAUPHIN COUNTY RECORDER OF DEEDS CERTIFICATE**

RECORDED IN THE OFFICE FOR RECORDING OF DEEDS, IN AND FOR DAUPHIN COUNTY, PENNSYLVANIA, IN SUBDIVISION PLAN BOOK _____, VOLUME _____, PAGE _____. WITNESS MY HAND AND SEAL OF OFFICE THIS _____DAY OF _____ A.D.20_____ .

RECORDER

**STATEMENT OF HIGHWAY OCCUPANCY PERMITS**

WHERE VEHICULAR ENTRY TO LOTS WHICH ABUT STATE OR MUNICIPAL MAINTAINED ROADWAYS IS PROPOSED, HIGHWAY OCCUPANCY PERMITS MUST BE OBTAINED FROM PENNDOT OR THE MUNICIPALITY, AS MAY BE REQUIRED. NO BUILDING PERMITS SHALL BE ISSUED BY THE TOWNSHIP AND NO BUILDING CONSTRUCTION SHALL BE INITIATED ON SAID LOTS UNTIL HIGHWAY OCCUPANCY PERMITS ARE OBTAINED. APPROVAL OF THIS PLAT BY THE TOWNSHIP DOES NOT GUARANTEE THAT SAID HIGHWAY OCCUPANCY PERMITS WILL BE ISSUED.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |


Kimley»Horn
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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM


COMMONWEALTH OF PENNSYLVANIA — REGISTERED — PAUL W. HUGHES — ENGINEER PE079251 — PENNSYLVANIA

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

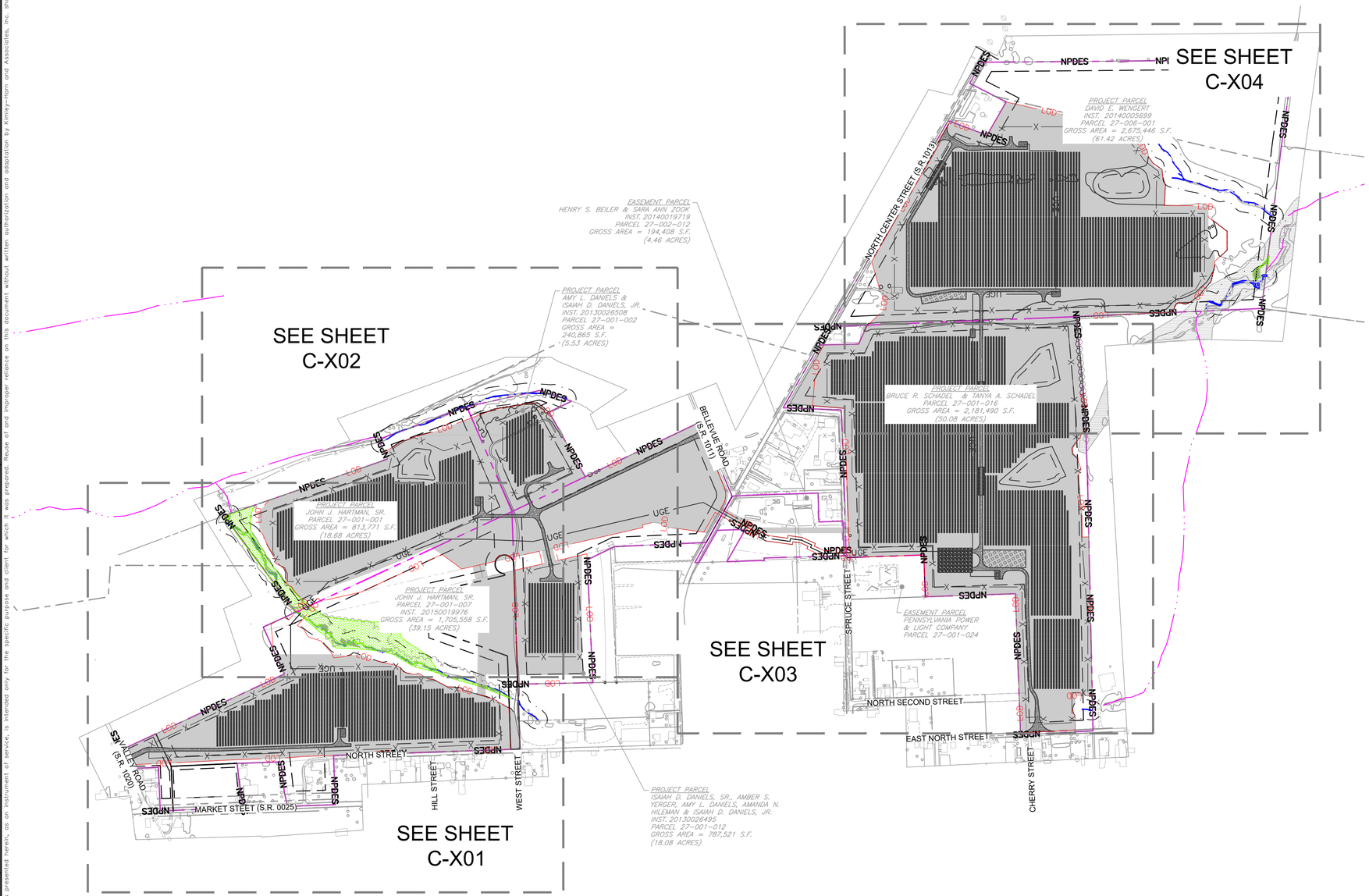
# COVER SHEET

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-000


Plotted By: Zuzki Wolfe Sheet Set: G Morris Solar Layout: C-000 January 29, 2026 01:45:45pm K:\PHL_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-000 COVER SHEET.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.




## Sheet List Table

| Sheet Number | Sheet Title |
|---|---|
| C-000 | COVER SHEET |
| C-001 | INDEX SHEET |
| C-051 | EXISTING CONDITIONS AND DEMOLITION PLAN 1 |
| C-052 | EXISTING CONDITIONS AND DEMOLITION PLAN 2 |
| C-053 | EXISTING CONDITIONS AND DEMOLITION PLAN 3 |
| C-054 | EXISTING CONDITIONS AND DEMOLITION PLAN 4 |
| C-101 | SITE PLAN 1 |
| C-102 | SITE PLAN 2 |
| C-103 | SITE PLAN 3 |
| C-104 | SITE PLAN 4 |
| C-150 | SITE DETAILS 1 |
| C-151 | SITE DETAILS 2 |
| C-201 | EROSION AND SEDIMENT CONTROL PLAN 1 |
| C-202 | EROSION AND SEDIMENT CONTROL PLAN 2 |
| C-203 | EROSION AND SEDIMENT CONTROL PLAN 3 |
| C-204 | EROSION AND SEDIMENT CONTROL PLAN 4 |
| C-250 | EROSION AND SEDIMENT CONTROL NOTES |
| C-251 | EROSION AND SEDIMENT CONTROL DETAILS 1 |
| C-252 | EROSION AND SEDIMENT CONTROL DETAILS 2 |
| C-253 | EROSION AND SEDIMENT CONTROL DETAILS 3 |
| C-254 | EROSION AND SEDIMENT CONTROL DETAILS 4 |
| C-255 | EROSION AND SEDIMENT CONTROL DETAILS 5 |
| C-256 | EROSION AND SEDIMENT CONTROL DETAILS 6 |
| C-301 | POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 1 |
| C-302 | POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 2 |
| C-303 | POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 3 |
| C-304 | POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 4 |
| C-350 | POST CONSTRUCTION STORMWATER MANAGEMENT NOTES |
| C-351 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 1 |
| C-352 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 2 |
| C-353 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 3 |
| C-354 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 4 |
| C-355 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 5 |
| L-101 | LANDSCAPE PLAN 1 |
| L-102 | LANDSCAPE PLAN 2 |
| L-103 | LANDSCAPE PLAN 3 |
| L-104 | LANDSCAPE PLAN 4 |
| L-105 | LANDSCAPE NOTES AND DETAILS |

## INDEX MAP LEGEND

- PROPERTY LINE
- NPDES — PROJECT SITE AREA LINE
- UGE — PROPOSED UNDERGROUND ELECTRIC LINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- LOD — LIMIT OF DISTURBANCE
- EXISTING DELINEATED STREAM
- EXISTING NWI/NHD STREAM
- EXISTING WETLANDS
- PROJECT SITE AREA

NORTH

GRAPHIC SCALE IN FEET
0 150 300 600

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS' NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1 One Call
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJG |
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| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

Kimley»Horn
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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ENGINEER — PAUL W. HUGHES — PE079231 — PENNSYLVANIA

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJG
CHECKED BY TGK

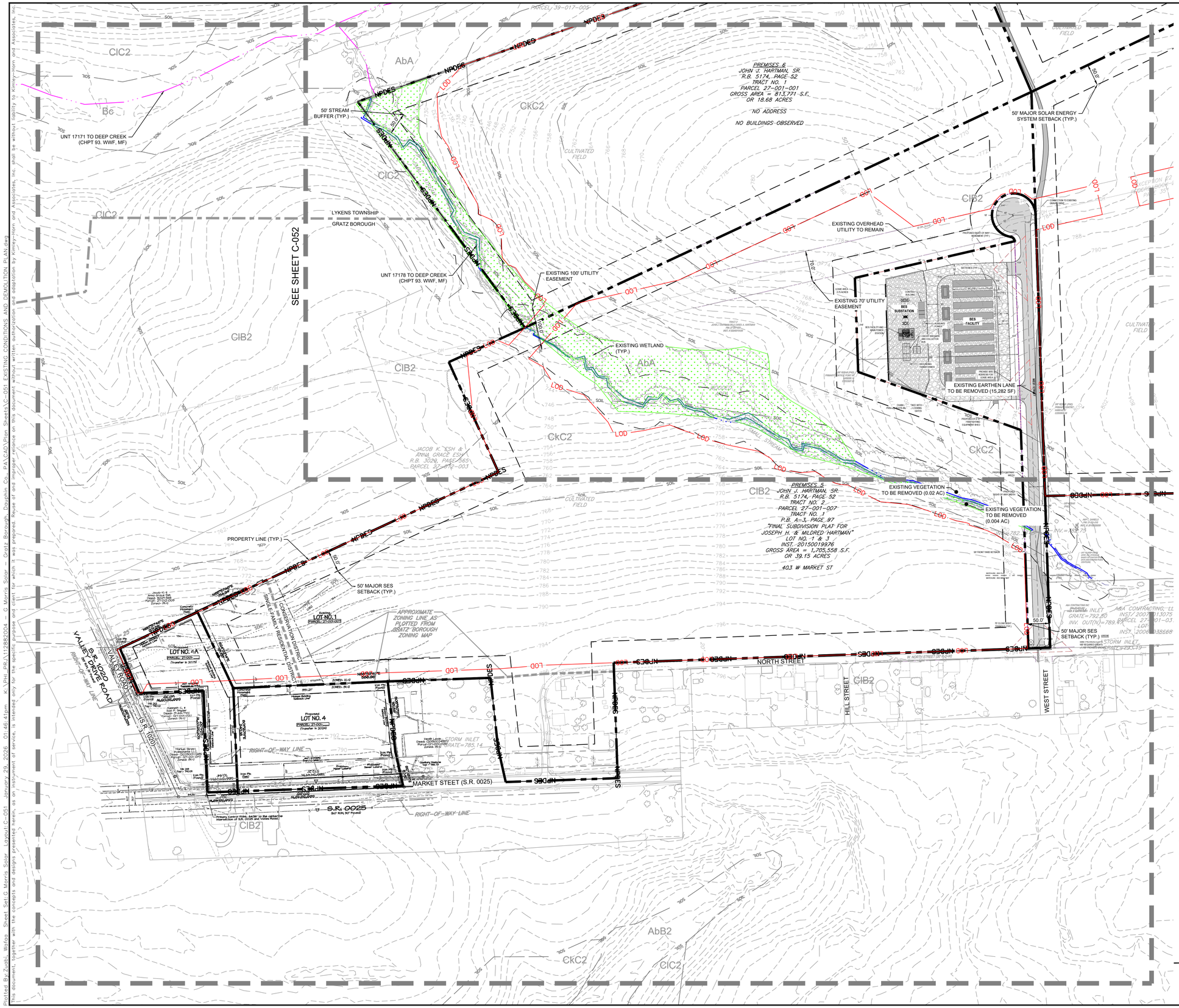
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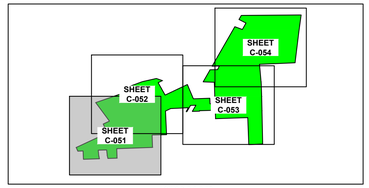
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-001

Plotted By: Zuobi, Wafaa Sheet Set: G Morris Solar Layout: C-001 January 29, 2026 01:46:14pm K:\PHI_PA\112882004 — G Morris Solar — Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-001 INDEX SHEET.dwg
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KEY MAP
SCALE: 1" = 2,000'

## EXISTING CONDITIONS AND DEMOLITION LEGEND

- PROPERTY LINE
- MUNICIPAL BOUNDARY LINE
- LOD — LIMIT OF DISTURBANCE
- NPDES — TOTAL PROJECT SITE BOUNDARY
- *EXISTING* ZONING LINE
- *EXISTING* MINOR CONTOUR
- 680 — *EXISTING* MAJOR CONTOUR
- *EXISTING* WATERCOURSE PER NHD
- *EXISTING* FIELD DELINEATED STREAM
- WATERCOURSE / WETLAND BUFFER
- *EXISTING* EDGE OF PAVEMENT
- *EXISTING* ADJOINING PROPERTY LINE
- *EXISTING* ROAD RIGHT-OF-WAY
- SOIL — SOIL BOUNDARY
- ErB — SOIL TYPE LABEL
- OH — *EXISTING* OVERHEAD ELECTRIC WIRES
- *EXISTING* EASEMENT
- *EXISTING* TREELINE
- X — *EXISTING* FENCE
- FENCE TO BE REMOVED
- *EXISTING* VEGETATION TO BE CLEARED AND GRUBBED
- *EXISTING* IMPERVIOUS TO BE REMOVED
- *EXISTING* WETLAND
- FEMA FLOOD ZONE A (100-YEAR FLOODPLAIN)

## SURVEY NOTES

1. FLOODPLAIN LINES DELINEATED PER FEMA FLOOD MAP 42043C0130D EFFECTIVE 08/02/2012.
2. THE SURVEY PERFORMED BY KHOR ENGINEERING CO. 12/21/2021 THROUGH 06/13/2022 REFERENCES THE NORTH AMERICAN DATUM OF 1983 PENNSYLVANIA STATE PLAN COORDINATE SYSTEM, SOUTH ZONE (P483-SF). THE VERTICAL DATUM REFERENCES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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3. CONTRACTOR TO HIRE CONSULTANT TO INSPECT ALL EXISTING UTILITIES THAT ARE TO REMAIN. FINDINGS ARE TO BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION OR ORDERING SO THAT A DETERMINATION CAN BE MADE AS TO THE CONDITION OF THE EXISTING LINES. ANY UTILITIES THAT ARE IN MARGINAL CONDITION WILL NEED TO BE REPLACED.
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GRAPHIC SCALE IN FEET
0 50 100 200

CALL BEFORE YOU DIG!
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PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
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| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079251 — PENNSYLVANIA

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# EXISTING CONDITIONS AND DEMOLITION PLAN 1

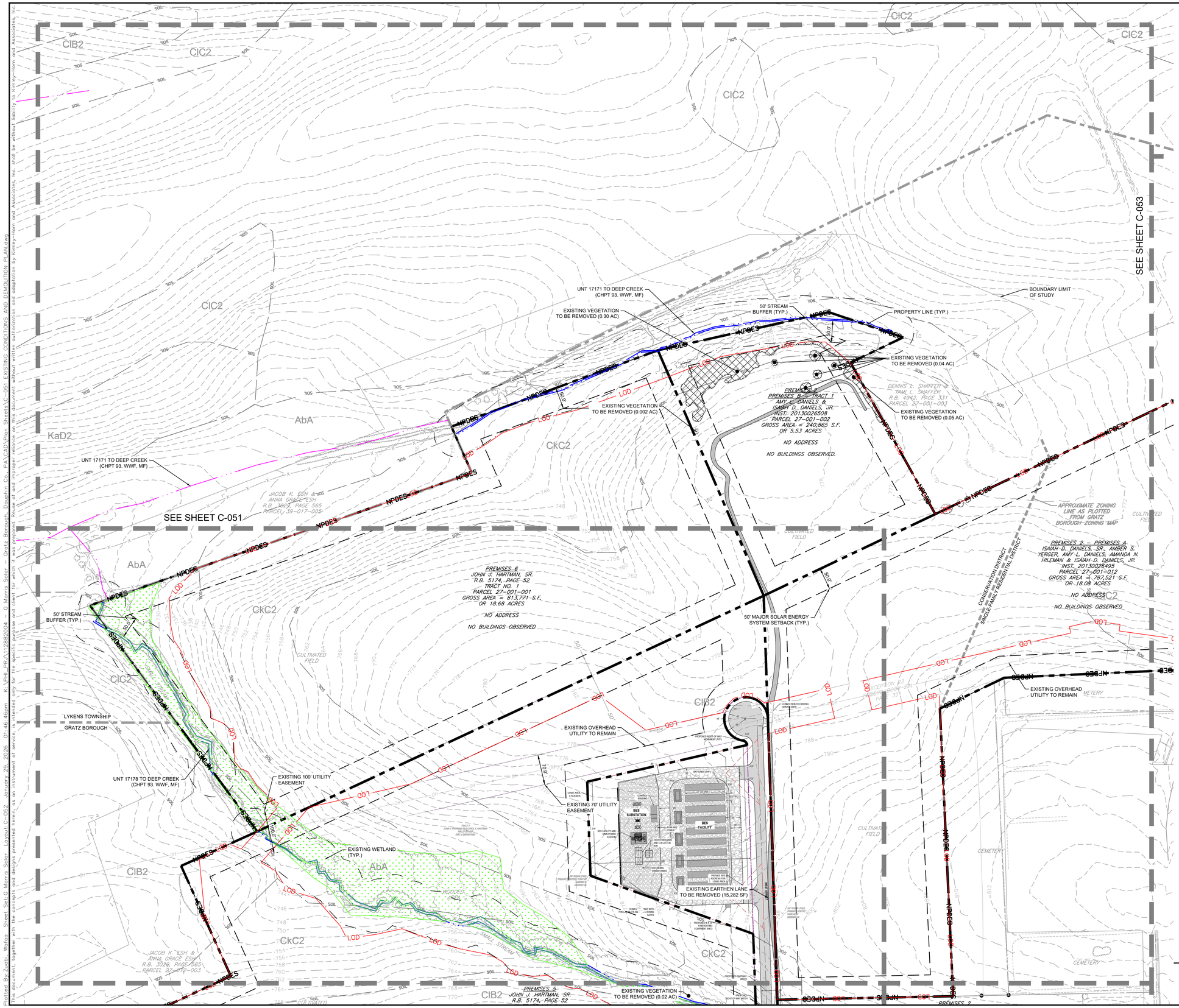
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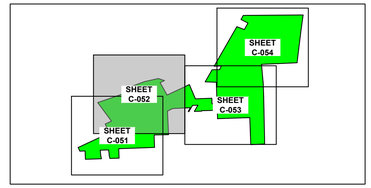
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-051

Plotted By: Zoeb, Mirfan Sheet Set: G Morris Solar Layout: C-051 January 29, 2026 01:46:41pm K:\PHI_ERL\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-051 EXISTING CONDITIONS AND DEMOLITION PLAN.dwg
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0 50 100 200

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1 One Call System, Inc.
Serial Nbr: 20213179
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079231 — PENNSYLVANIA

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# EXISTING CONDITIONS AND DEMOLITION PLAN 2

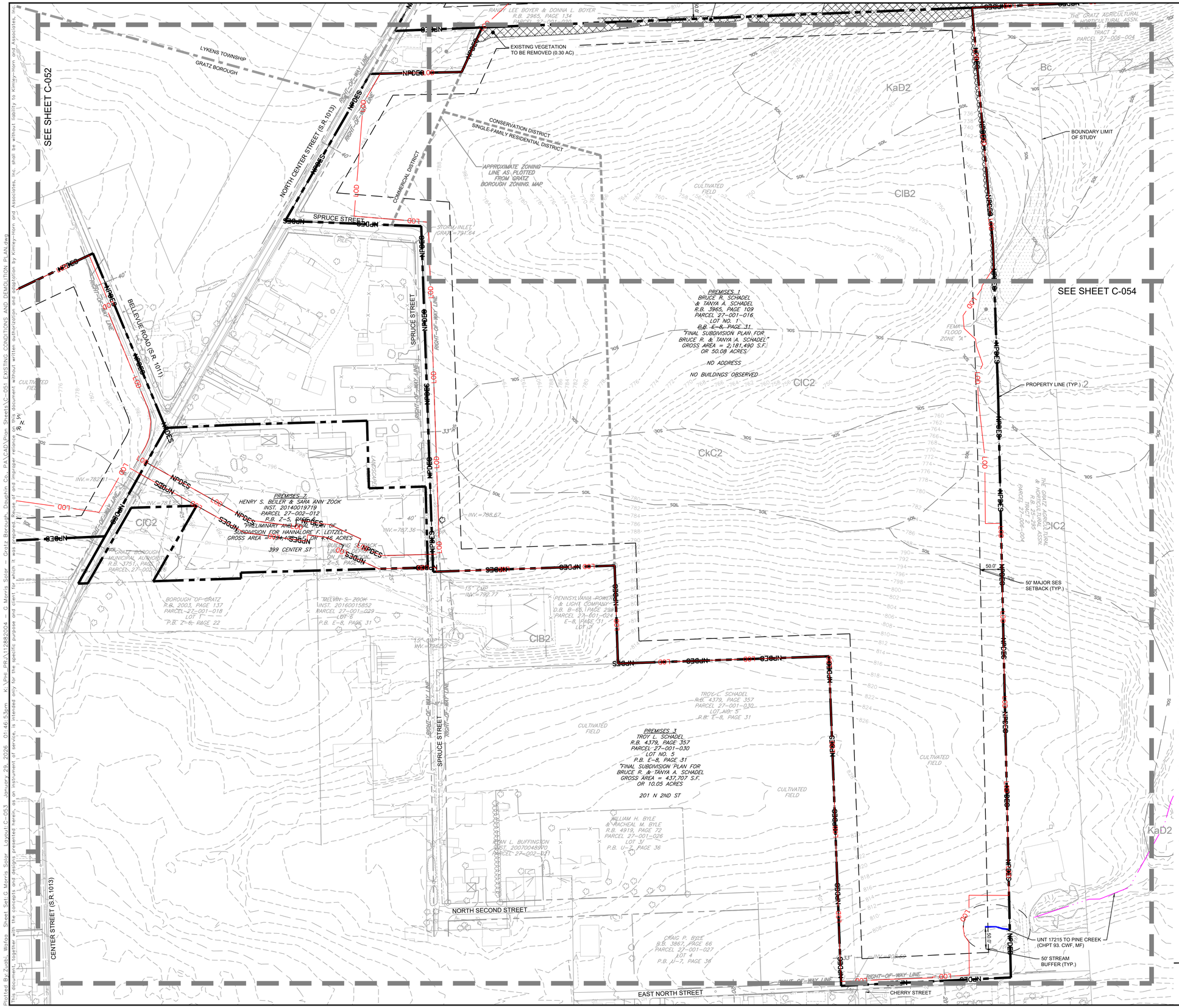
# G. MORRIS SOLAR

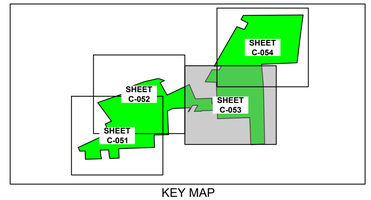
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-052

Plotted By: Zuobi, Wafaa Sheet Set: G Morris Solar Layout: C-052 January 29, 2026 01:46:46pm K:\PHI_PR\112882004 – G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-051 EXISTING CONDITIONS AND DEMOLITION PLAN.dwg
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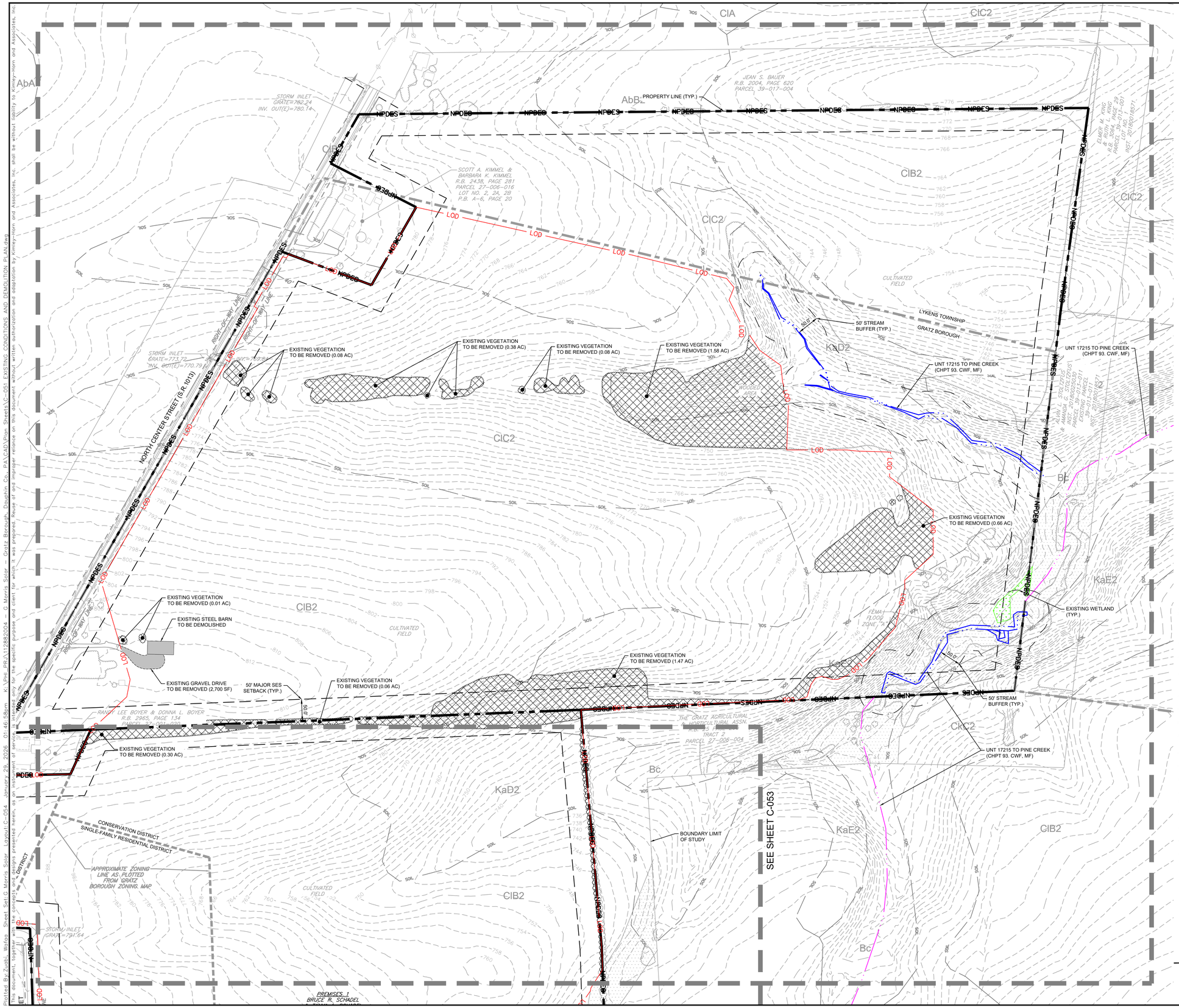
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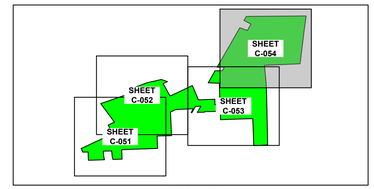
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA.

SHEET NUMBER
C-053

Plotted By:Zuzhi Wang Sheet Set:G Morris Solar Layout:C-053 January 29, 2026 01:46:53pm K:\PHL_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-051 EXISTING CONDITIONS AND DEMOLITION PLAN.dwg
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3. CONTRACTOR TO HIRE CONSULTANT TO INSPECT ALL EXISTING UTILITIES THAT ARE TO REMAIN. FINDINGS ARE TO BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION OR ORDERING SO THAT A DETERMINATION CAN BE MADE AS TO THE CONDITION OF THE EXISTING LINES. ANY UTILITIES THAT ARE IN MARGINAL CONDITION WILL NEED TO BE REPLACED.
4. ALL TEST PITS LOCATING THE EXISTING UTILITIES ARE TO BE COMPLETED PRIOR TO CONSTRUCTION OR ORDERING.
5. CONTRACTOR TO HAVE ALL UTILITIES FIELD MARKED AND THEN LOCATED BY THE SURVEYOR. ALL LOCATIONS ARE TO BE REPORTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION OR ORDERING.
6. ALL DEMOLITION IS TO BE PERFORMED IN STRICT CONFORMANCE WITH ALL APPLICABLE TOWNSHIP, COUNTY, & STATE AND/OR OTHER GOVERNING BODIES STANDARDS.
7. DURING DEMOLITION, ANY HAZARDOUS MATERIAL, SUCH AS ASBESTOS, SHALL BE REMOVED AND REMEDIATED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP) STANDARDS AND ALL OTHER APPLICABLE STANDARDS.
8. THE REMOVAL AND/OR ABANDONMENT OF ANY SUBSURFACE STRUCTURES, INCLUDING STORAGE TANKS, MANHOLES AND PIPES, SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS AND SOIL ENGINEER.
9. HAULING ROUTES AND DISPOSAL SITES FOR THE DISPOSAL OF THE DEMOLISHED MATERIAL SHALL BE PROVIDED TO THE TOWNSHIP PRIOR TO DEMOLITION.
10. ANY DISCREPANCY BETWEEN THIS PLAN AND SITE CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE CIVIL ENGINEER AND GENERAL CONTRACTOR.
11. CONTRACTOR SHALL CONTROL DUST LEAVING THE SITE DURING DEMOLITION AND CONSTRUCTION.
12. CONTRACTOR AND DEVELOPER TO COORDINATE ALL IMPACTS TO ADJACENT PROPERTIES DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
13. ANY STREET SIGN DAMAGED OR TEMPORARILY REMOVED DURING CONSTRUCTION ARE TO BE REPLACED IN KIND OR PER LOCAL MUNICIPALITY AND PENNDOT.
14. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER ANY UNFORESEEN OR ADVERSE CONDITIONS DISCOVERED DURING DEMOLITION OPERATIONS.
15. CONTRACTOR SHALL PROTECT EXISTING PLANT MATERIAL NOT DESIGNATED FOR REMOVAL OR RELOCATION FROM DAMAGE DURING CONSTRUCTION.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY ITEMS DAMAGED DURING THE CONSTRUCTION.

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE. • STOP• CALL
PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PAUL W. HUGHES
ENGINEER
PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# EXISTING CONDITIONS AND DEMOLITION PLAN 4

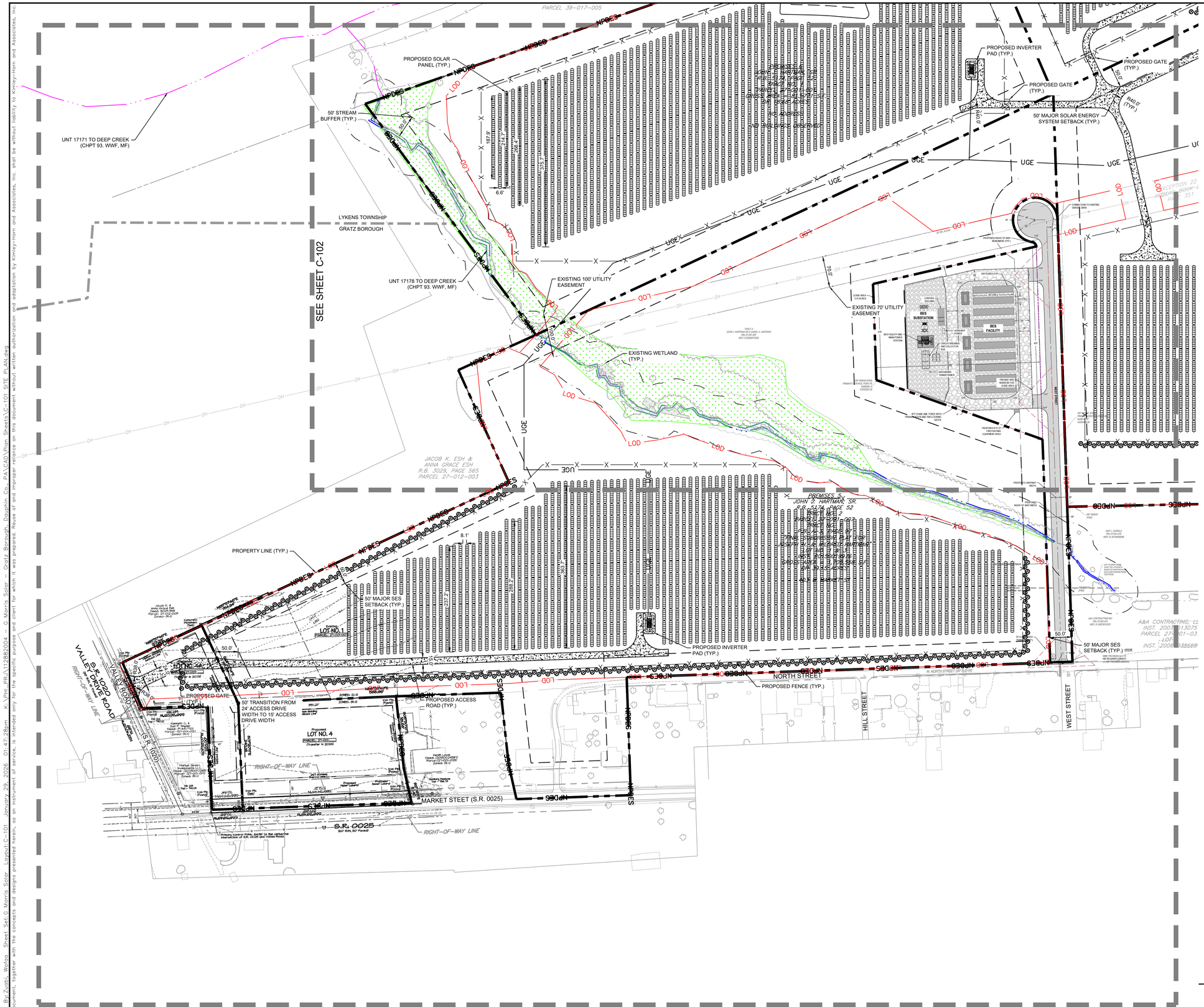
# G. MORRIS SOLAR

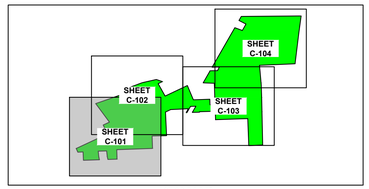
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-054

Plotted By:Zubi Wafeb Sheet Set:G Morris Solar Layout:C-054 January 29, 2026 01:46:58pm K:\PHI_PRJ\112882004 – G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-051 EXISTING CONDITIONS AND DEMOLITION PLAN.dwg
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KEY MAP
SCALE: 1" = 2,000'

## SITE PLAN LEGEND

- PROPERTY LINE
- *EXISTING* ADJACENT PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
- PROPERTY SETBACKS
- *EXISTING* EASEMENT
- *EXISTING* DELINEATED STREAM
- *EXISTING* NWI/NHD STREAM
- *EXISTING* RIGHT-OF-WAY
- OH — *EXISTING* OVERHEAD ELECTRIC WIRES
- UGE — *EXISTING* UNDERGROUND ELECTRIC WIRES
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- FEMA 100-YEAR FLOODPLAIN
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- LAYDOWN YARD
- GRAVEL ACCESS ROAD
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- WATERCOURSE / WETLAND BUFFER
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- UGE — PROPOSED UNDERGROUND ELECTRIC WIRE
- PROPOSED LANDSCAPE BUFFER
- X — X — X — PROPOSED CHAIN LINK FENCE
- PROPOSED SOLAR PANEL

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0 50 100 200

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PA 1 Call Inc.
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

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| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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PHILADELPHIA, PA 19102
PHONE: 267-687-0150
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED — PROFESSIONAL — ENGINEER — PAUL W. HUGHES — PE079231 — PENNSYLVANIA

| KHA PROJECT | 112882004 | | |
|---|---|---|---|
| DATE | 01/30/2026 | | |
| SCALE | AS SHOWN | DESIGNED BY | EJF |
| | | DRAWN BY | PJG |
| | | CHECKED BY | TGK |

# SITE PLAN 1

# G. MORRIS SOLAR

PREPARED FOR

G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-101

Plotted By: Zuzbi Wofob Sheet Set: G Morris Solar Layout: C-101 January 29, 2026 01:47:28pm K:\PHI_PR\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-101 SITE PLAN.dwg
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SEE SHEET C-103

SEE SHEET C-101

UNT 17171 TO DEEP CREEK (CHPT 93. WWF, MF)

UNT 17178 TO DEEP CREEK (CHPT 93. WWF, MF)

50' STREAM BUFFER (TYP.)

50' MAJOR SES SETBACK (TYP.)

50' MAJOR SOLAR ENERGY SYSTEM SETBACK (TYP.)

PROPERTY LINE (TYP.)

BOUNDARY LIMIT OF STUDY

PROPOSED FENCE (TYP.)

PROPOSED ACCESS ROAD (TYP.)

PROPOSED SOLAR PANEL (TYP.)

PROPOSED INVERTER PAD (TYP.)

PROPOSED GATE (TYP.)

EXISTING 100' UTILITY EASEMENT

EXISTING 70' UTILITY EASEMENT

EXISTING WETLAND (TYP.)

LYKENS TOWNSHIP
GRATZ BOROUGH

JACOB K. ESH &
ANNA GRACE ESH
R.B. 3029, PAGE 565
PARCEL 39-017-005

JACOB K. ESH &
ANNA GRACE ESH
R.B. 3029, PAGE 565
PARCEL 27-012-003

DENNIS L. SHAFFER &
TAMI L. SHAFFER
R.B. 4942, PAGE 331
PARCEL 27-001-003

PREMISES 2 — PREMISES A
ISAIAH D. DANIELS, SR., AMBER S. YERGER, AMY L. DANIELS, AMANDA N. HILEMAN & ISAIAH D. DANIELS, JR.
INST. 20130029485
PARCEL 27-001-012
GROSS AREA = 787,521 S.F.
OR 18.08 ACRES
NO ADDRESS
NO BUILDINGS OBSERVED

PREMISES 2
EXCEPTION 22
INSTR. 2020-2031
PAGE 351

PREMISES 3
JOHN D. HARTMAN, SR.
R.B. 5174, PAGE 52

BES SUBSTATION

BES FACILITY

CONTROL BUILDING

BES FACILITY AND MAIN POWER DIVISION

AUXILIARY POWER

CIRCUIT BREAKER AND DISCONNECTION BUS

GROUNDING RISER/CABLES

PROVIDE BES FACILITY LEASE AREA

BES OVERHEAD STRUCTURE WITH GRADE MOUNTED DISCONNECTING SWITCHES

PROPOSED 4.8 KV FIBER/RTU EQUIPMENT BESS

PROPOSED CANTILEVER MESTS

PROPOSED RIGHT-OF-WAY MONUMENT (TYP.)

CONNECTION TO EXISTING OVERHEAD LINE

LEASE AREA = 2.75 ACRES

BATTERIES (TYP.)

BESS FACILITY

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES THREE WORKING DAYS NOTICE FOR CONSTRUCTION PLANS AND 10 WORKING DAYS IN DESIGN STAGE - STOP CALL
PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

KEY MAP
SCALE: 1" = 2,000'

SHEET C-101
SHEET C-102
SHEET C-103
SHEET C-104

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- X — X — X — PROPOSED CHAIN LINK FENCE
- PROPOSED SOLAR PANEL

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|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
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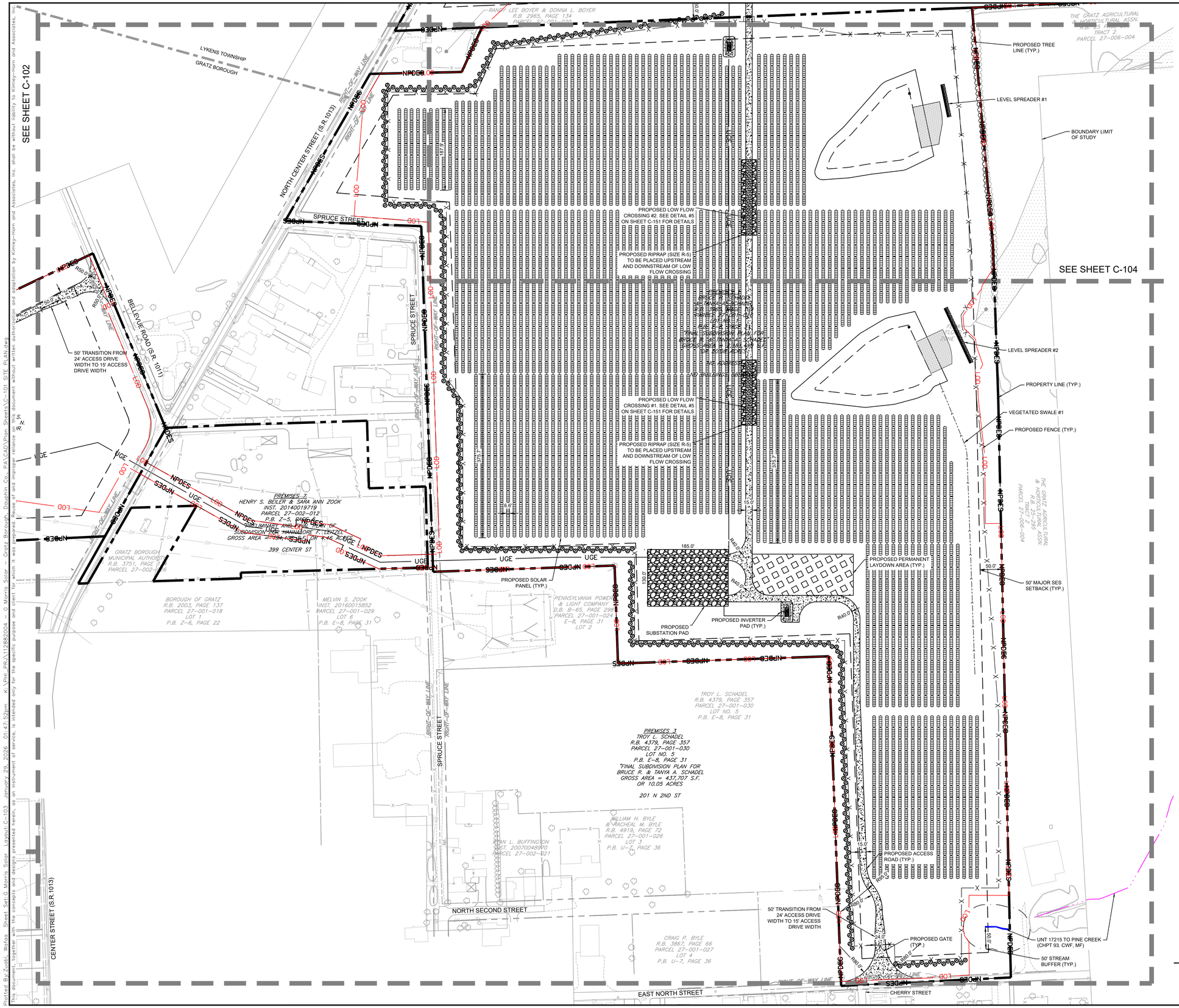
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| KHA PROJECT | 112882004 |
| DATE | 01/30/2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | EJF |
| DRAWN BY | PJQ |
| CHECKED BY | TCK |

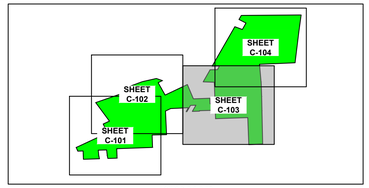
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

# SITE PLAN 2

SHEET NUMBER
C-102




KEY MAP
SCALE: 1" = 2,000'

## SITE PLAN LEGEND

- PROPERTY LINE
- *EXISTING* ADJACENT PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PAUL W. HUGHES
ENGINEER PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJG
CHECKED BY TCK

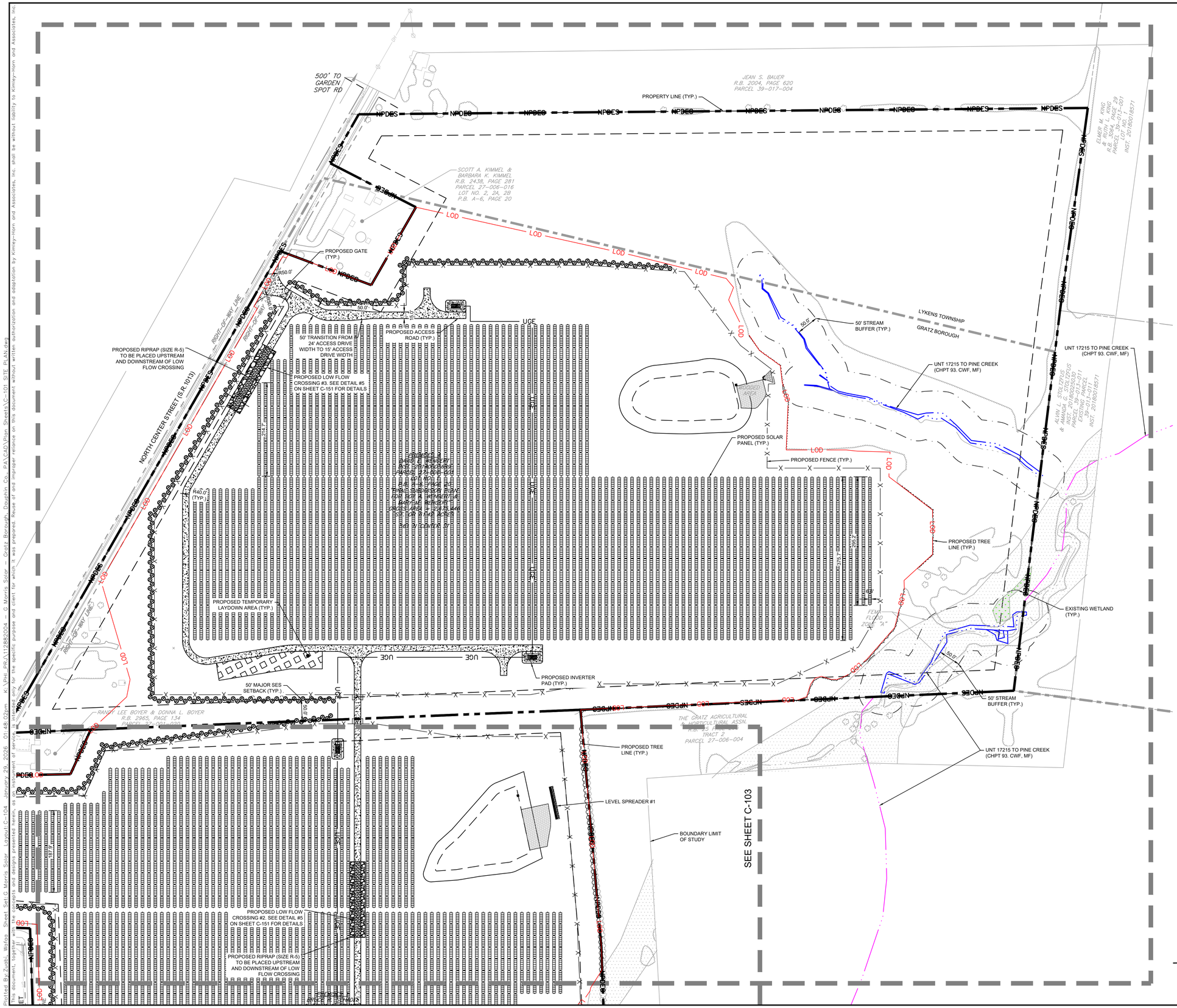
# SITE PLAN 3

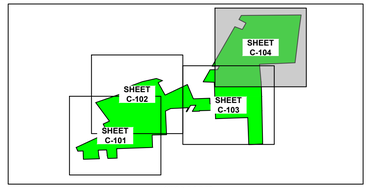
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-103

Plotted By: Zoobi Wraps Sheet Set\G Morris Solar Layout\C-103 January 29, 2026 01:47:52pm K:\Phl_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-101 SITE PLAN.dwg
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KEY MAP
SCALE: 1" = 2,000'

## SITE PLAN LEGEND

- PROPERTY LINE
- *EXISTING* ADJACENT PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
- PROPERTY SETBACKS
- *EXISTING* EASEMENT
- *EXISTING* DELINEATED STREAM
- *EXISTING* NWI/NHD STREAM
- *EXISTING* RIGHT-OF-WAY
- OH — *EXISTING* OVERHEAD ELECTRIC WIRES
- UGE — *EXISTING* UNDERGROUND ELECTRIC WIRES
- PROPOSED EASEMENT LINE
- FEMA 100-YEAR FLOODPLAIN
- SUBSTATION AREA
- LAYDOWN YARD
- GRAVEL ACCESS ROAD
- INVERTER PAD
- TOP OF BASIN
- BOTTOM OF BASIN
- STORM STRUCTURES
- WATERCOURSE / WETLAND BUFFER
- OHE — PROPOSED OVERHEAD ELECTRIC WIRE
- PROPOSED TREELINE
- UGE — PROPOSED UNDERGROUND ELECTRIC WIRE
- PROPOSED LANDSCAPE BUFFER
- X — X — X — PROPOSED CHAIN LINK FENCE
- PROPOSED SOLAR PANEL

## SITE NOTES

1. CONTRACTOR TO VERIFY THAT PROPOSED SITE WORK DOES NOT ENCROACH IN THE BUFFER LIMITS FOR WETLANDS, RIVERS, AND FLOOD ZONES.
2. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945 (P.L.1242, NO.428), KNOWN AS THE "STATE HIGHWAY LAW", BEFORE DRIVEWAY ACCESS TO A STATE HIGHWAY IS PERMITTED. [NUMBER] HIGHWAY OCCUPANCY PERMITS WILL BE REQUIRED.
3. ALL CONSTRUCTION SHALL CONFORM WITH APPLICABLE STATE AND LOCAL CONSTRUCTION STANDARDS AS IDENTIFIED IN THESE PLANS. THE CONTRACTOR SHALL MAINTAIN A CURRENT RELEASE OF THE STATE AND LOCAL LAND DEVELOPMENT STANDARDS MANUAL ON THE PROJECT SITE FOR REFERENCE DURING CONSTRUCTION OF THE PROJECT.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL NOTIFY "PENNSYLVANIA ONE CALL" @ 1-800-242-1776 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE PROJECT SITE.
5. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.
6. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL DEVICES SHOWN ON THE APPROVED PLANS FOR THE DURATION OF CONSTRUCTION OR UNTIL FINAL INSPECTION.
7. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING STORMWATER & UTILITY STRUCTURES. CONTRACTOR SHALL NOTIFY ENGINEER IF EXISTING CONDITIONS DO NOT MATCH INFORMATION ON PLANS.
8. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
9. ALL WORK IN THE RIGHT-OF-WAY REQUIRES A HIGHWAY OCCUPANCY PERMIT FROM PENNDOT AND/OR THE TOWNSHIP. CONTRACTOR SHALL SECURE ALL REQUIRED CONSTRUCTION PERMITS PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
11. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL CONSTRUCTION SHALL BE INCLUDED IN BASE BID.
12. THE TOWNSHIP DRIVEWAY PERMIT SHALL BE REFERENCED WHEN CONSTRUCTING ALL DRIVEWAYS CONNECTING TO TOWNSHIP ROADS.

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE = STOP CALL
PA 1 One Call System, Inc.
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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PHILADELPHIA, PA 19102
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
PAUL W. HUGHES
ENGINEER
PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

SITE PLAN 4

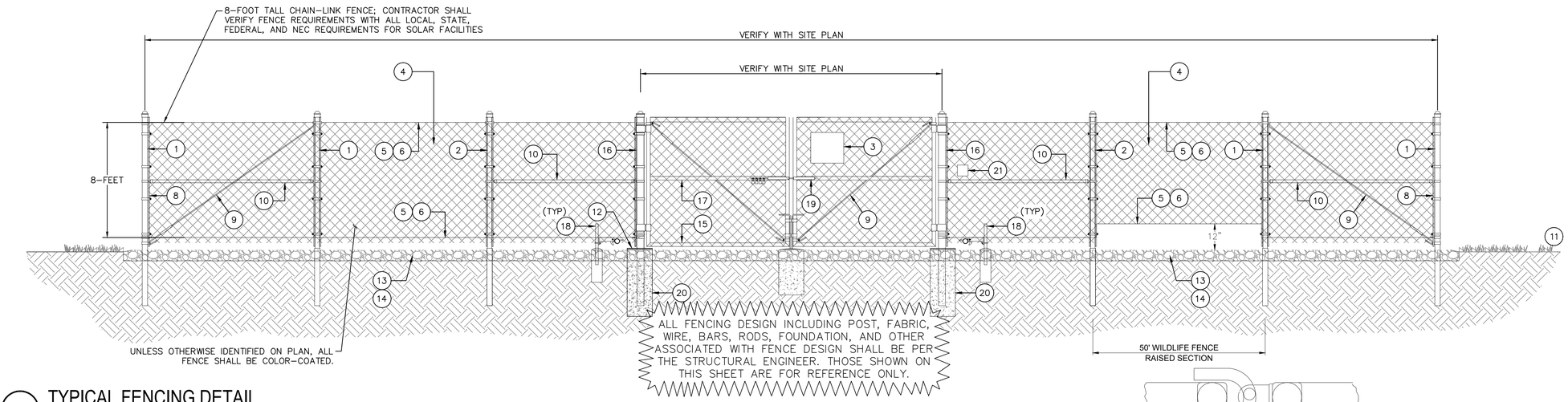
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

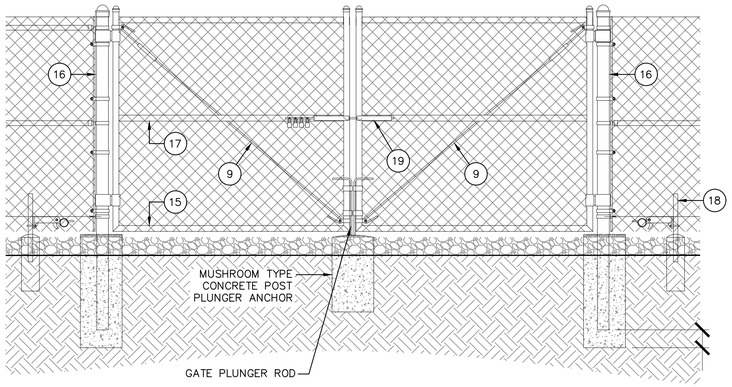
SHEET NUMBER
C-104

Plotted By: Zach Wolpa Sheet Set: G Morris Solar Layout: C-104 January 29, 2026 01:48:02pm K:\Phl_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-101 SITE PLAN.dwg
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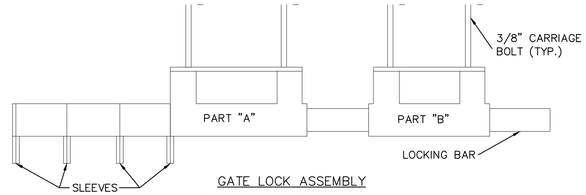

## 1 TYPICAL FENCING DETAIL

Scale: N.T.S.




## 2 DOUBLE SWING GATE DETAIL

Scale: N.T.S.

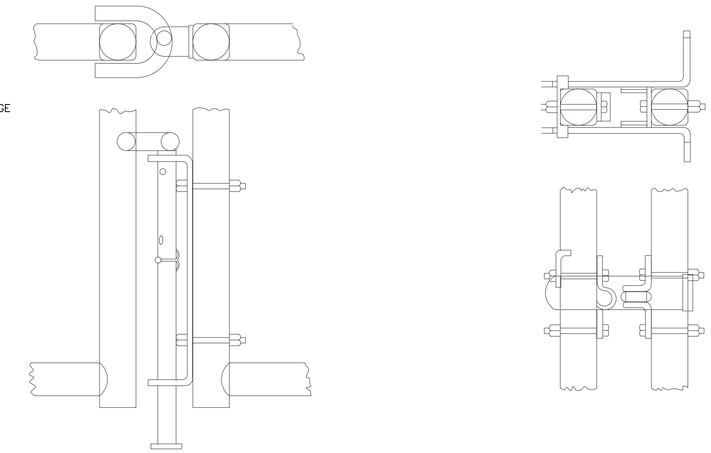



GATE LOCK ASSEMBLY

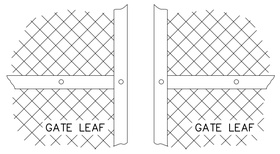
"STYMIELOCK" MULTI LOCKING DEVICE OR APPROVED EQUAL

STYMIELOCK INSTALLATION

1. DRILL 3/8" HOLES IN THE GATE LEAF USING THE GATE DIMENSIONS PROVIDED.
2. SLIDE THE CARRIAGE BOLTS IN THE SLOTS ON THE BACK OF PART "B" AND PUSH THE BOLTS THROUGH THE HOLES DRILLED IN THE GATE FIGURE. PUT THE NUT AND THE LOCKNUT ON AND TIGHTEN AND CUT THE EXCESS BOLT OFF. DO THE SAME WITH PART "A".
3. ADD THE NUMBER OF SLEEVES NEEDED FOR THE NUMBER OF LOCKS AND SLIDE THE LOCKING BAR INTO PLACE THROUGH BOTH PART "A" AND PART "B". NOW INSTALL THE LOCKS.
4. IF THE GATE HAS NO CENTER BAR IN THE GATE LEAF YOU MAY NEED TO MOUNT THE STYMIELOCK VERTICALLY USING THE SAME DIMENSIONS GIVEN ON THE GATE FACE.
5. VERTICAL APPLICATION MAY ALSO BE USED ON SLIDING GATES WITH MULTIPLE LOCKS.

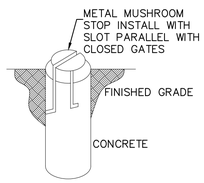






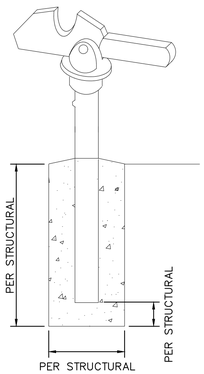

## 3 GATE FACE DETAIL

Scale: N.T.S.




## 4 MUSHROOM STOP DETAIL

Scale: N.T.S.




## 5 GATE HOLDER FOUNDATION DETAIL

Scale: N.T.S.

## 6 GATELOCK ASSEMBLY DETAIL

Scale: N.T.S.

GENERAL NOTES

1. ALL FENCING DESIGN INCLUDING POST, FABRIC, WIRE, BARS, RODS, FOUNDATION, AND OTHER ASSOCIATED WITH FENCE DESIGN SHALL BE PER THE STRUCTURAL ENGINEER. THOSE SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY.
2. UNLESS OTHERWISE IDENTIFIED ON PLAN, ALL FENCE SHALL BE COLOR-COATED.
3. STATE AND LOCAL STANDARDS AND SPECIFICATIONS PERTAINING TO A SPECIFIC SITE TAKE PRECEDENCE OVER THIS DRAWING.
4. ALL OPEN POSTS SHALL HAVE END-CAPS.
5. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC.
6. MUSHROOM ANCHOR & PLUNGER REQUIRED FOR GATE.
7. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.
8. THE KNOX BOX SHALL BE LOCATED AT OR NEAR THE RECOGNIZED PUBLIC ENTRANCE TO THE PROPERTY.
9. IN NO CASE SHALL THE KNOX BOX BE LOCATED AT A HEIGHT OF LESS THAN FOUR (4) FEET FROM THE GROUND OR MORE THAN SIX (6) FEET FROM THE GROUND; ALL OTHER LOCATIONS FOR THE KNOX BOX SHALL BE APPROVED BY THE FIRE MARSHALL.
10. A "KNOX BOX" OR COMPARABLE SET-UP WILL BE INSTALLED TO ALLOW EMS TO ACCESS THE SITE IF NECESSARY.
11. PROVIDE ACCESS KEYS TO THE FIRE MARSHALL TO BE SECURED INTO THE KNOX BOX. A SEPARATE KEY SHALL BE PROVIDED TO THE POLICE CHIEF, AND A SEPARATE SUB-MASTERED KEY SHALL BE PROVIDED TO THE CHIEF OF POLICE, AND A SEPARATE KEY TO THE DIRECTOR OF THE EMERGENCY MEDICAL SERVICES.
12. REFER TO ELECTRICAL PLANS FOR GROUNDING DETAILS.

## 7 DROP ROD ASSEMBLY DETAIL

Scale: N.T.S.

## 8 LATCH ASSEMBLY DETAIL

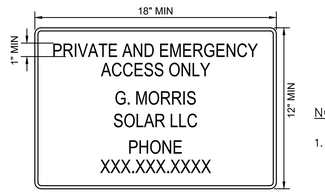
Scale: N.T.S.

## 9 NOTES

Scale: N.T.S.

REFERENCE NOTES

1. CORNER, END OR PULL POST:
2. LINE POST
   LINE POSTS SHALL BE EQUALLY SPACED
3. SITE IDENTIFICATION SIGN PER DETAIL 10 THIS PAGE
4. FABRIC
5. TIE WIRE
6. TENSION WIRE
7. BARBED WIRE
8. FULL HEIGHT STRETCHER BAR
9. DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD
10. BRACE POST
11. 2" MAXIMUM CLEARANCE FROM FINISH GRADE
12. FENCE POST FOUNDATION TO BE 1" FINISH ABOVE FINISHED GRADE
13. COMPACTED BASE OR SUBGRADE MATERIAL
14. FINISH GRADE SHALL BE UNIFORM AND LEVEL
15. WELDED GATE FRAME
16. GATE POST
17. GATE FRAME BRACE RAIL
18. DUCKBILL GATE HOLDER. VERIFY LOCATION IN FIELD PRIOR TO INSTALLATION
19. STYMIE LOCK MULTI-TENANT LOCKING DEVICE, SEE DETAIL 7 ON THIS SHEET
20. CONCRETE FOUNDATION
21. KNOX BOX




## 10 GATE SIGNAGE DETAIL

Scale: N.T.S.




NOTES:

1. ALL SIGNAGE SHALL BE POWER OWNER, DEVELOPER, UTILITY COMPANY, AND JURISDICTIONAL REQUIREMENTS. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE PARTIES FOR SITE SIGNAGE.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES ENGINEER PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

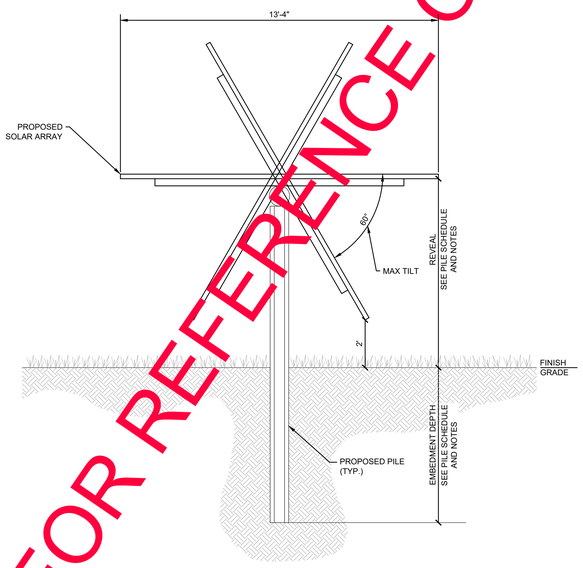
SITE DETAILS 1

G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER C-150

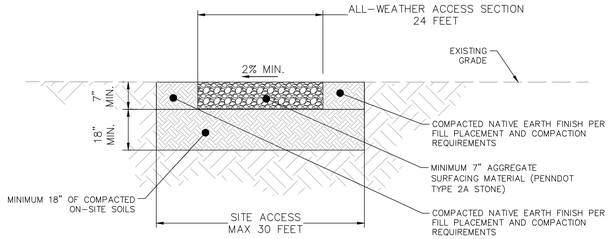
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FOR REFERENCE ONLY




## 1 TYPICAL SOLAR PANEL

Scale: N.T.S.

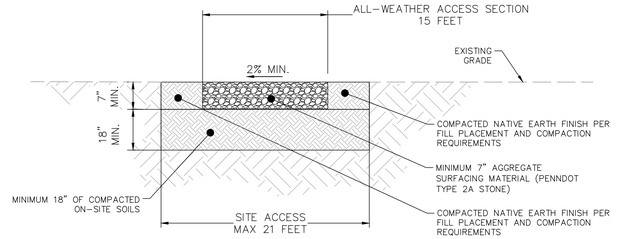



NOTES:

1. IMPROVEMENTS SHALL FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFER TO THE PROJECT GEOTECHNICAL REPORT AND RECOMMENDATIONS PER THE GEOTECHNICAL ENGINEER.
2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

## 2 ROAD SECTION - ENTRANCE ACCESS ROAD

N.T.S.

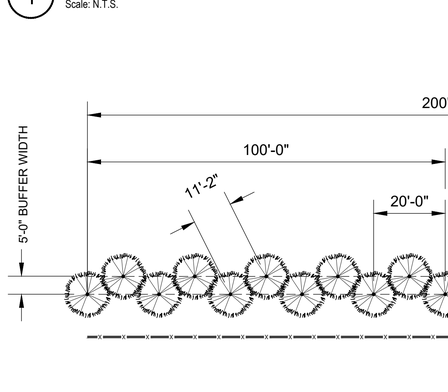



NOTES:

1. IMPROVEMENTS SHALL FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFER TO THE PROJECT GEOTECHNICAL REPORT AND RECOMMENDATIONS PER THE GEOTECHNICAL ENGINEER.
2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

## 3 ROAD SECTION - INTERNAL ACCESS ROAD

N.T.S.

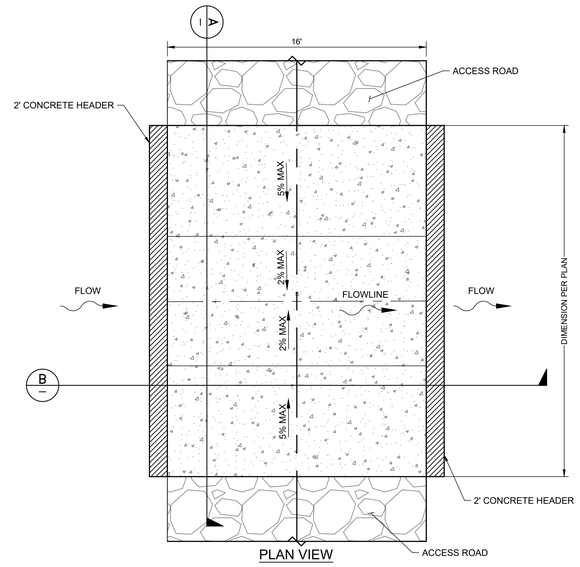



PLANT SCHEDULE

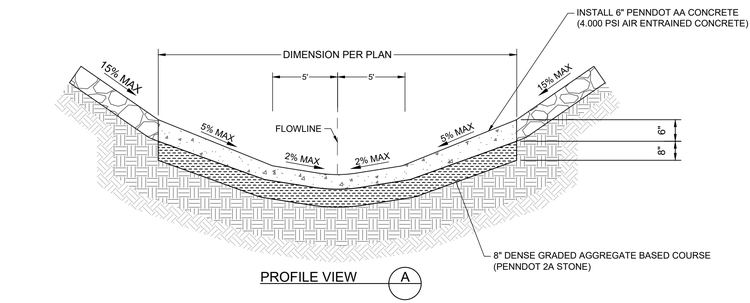
| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE AT PLANTING | ROOT |
|---|---|---|---|---|---|---|
| TREES | | | | | | |
| | | 1,074 | BUFFERING TREES | | | |
| | AB | | Abies balsamea | Balsam Fir | 6' Ht. | B&B |
| | PA | | Picea abies | Norway Spruce | 6' Ht. | B&B |
| | PG | | Picea glauca | White Spruce | 6' Ht. | B&B |
| | PC | | Picea pungens | Colorado Spruce | 6' Ht. | B&B |
| | PS | | Pinus strobus | White Pine | 6' Ht. | B&B |
| | PD | | Pseudobsuga menziesii | Douglas Fir | 6' Ht. | B&B |
| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE / TYPE | QTY / RATE |
| GROUND COVERS | | | | | | |
| | E186 | 3,441,531 sf | ERNST MIX 186 | SOLAR FARM SEED MIX | --- | 4 LBS PER 1000 SF |

## 4 BUFFER PLANTING DETAIL

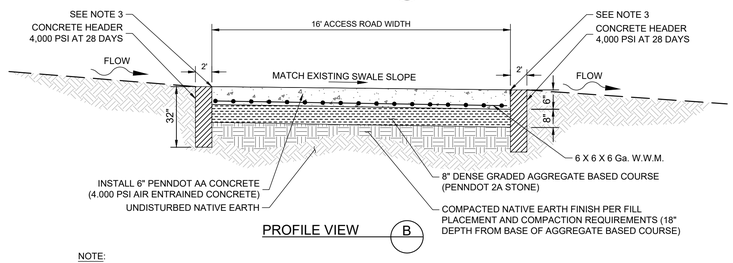
Scale: 1" = 20'




PLAN VIEW




PROFILE VIEW A




PROFILE VIEW B

NOTE:

1. ALL IMPROVEMENTS SHALL ADHERE TO THE GEOTECHNICAL ENGINEERING REPORT.
2. MAXIMUM 15'-0" TO MINIMUM 4'-0" JOINT SPACING FOR THE CONCRETE DRIVE.
3. PLACE PREMOLDED EXPANSION JOINT FILLER MATERIAL 1/2" THICK OR POLYSTYRENE BONDBREAKER 1/4" THICK BETWEEN THE HEADER AND CONCRETE ACCESS ROAD. ALL JOINTS AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 705.4.

## 5 LOW WATER CROSSING DETAIL

Scale: N.T.S.

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|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
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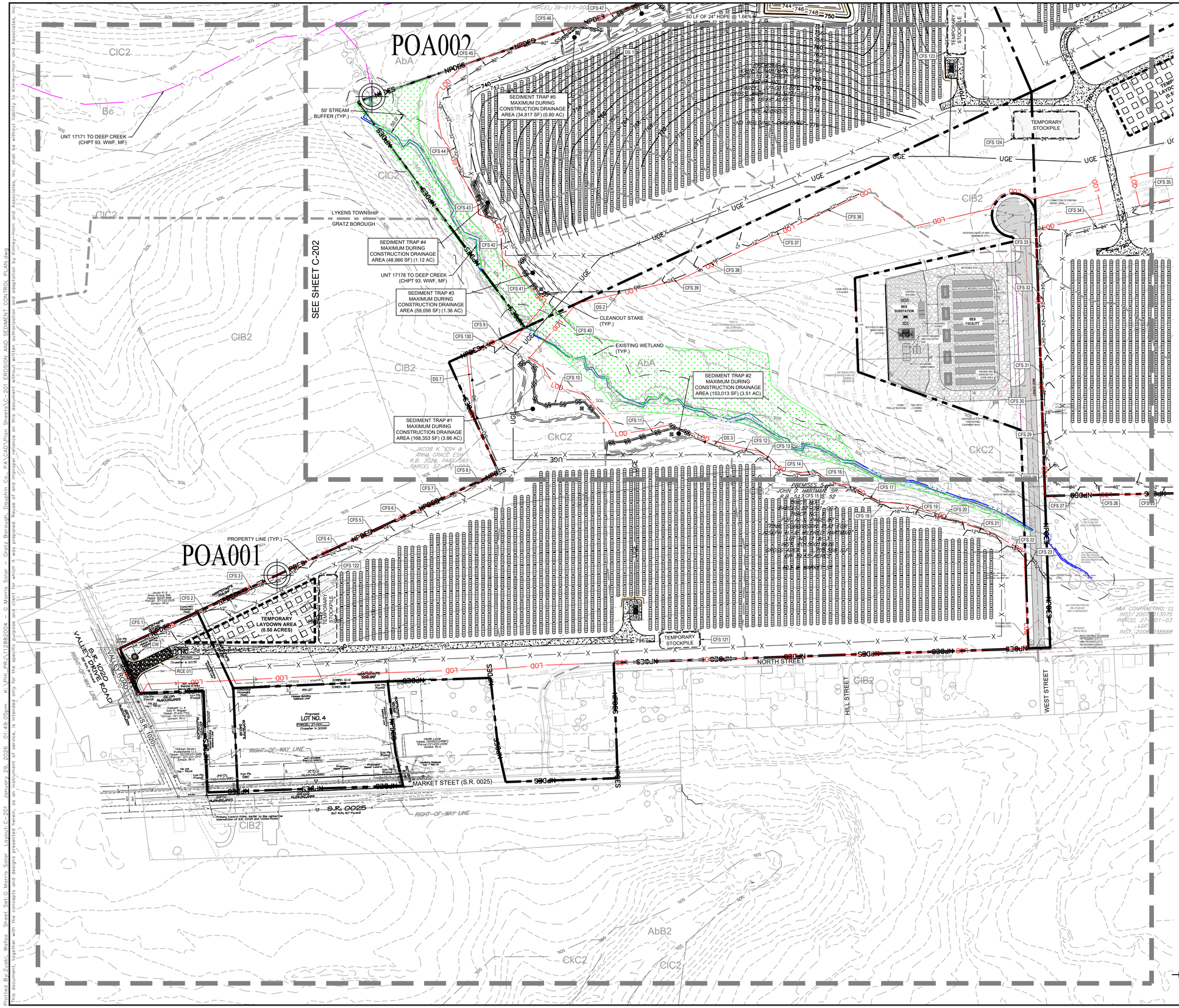
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

# SITE DETAILS 2

SHEET NUMBER
C-151

Plotted By: Zuabi, Wafaa Sheet Set: G Morris Solar Layout: C-151 January 29, 2026 01:48:21pm K:\PHI_PR\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-150 SITE DETAILS.dwg
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KEY MAP
SCALE: 1" = 2,000'

## EROSION & SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- NPDES — PROJECT SITE AREA
- PROPERTY LINE
- *EXISTING* ADJOINING PROPERTY LINE
- RCE XX — ROCK CONSTRUCTION ENTRANCE
- GRAVEL ACCESS ROAD
- TEMPORARY GRAVEL
- 12" / 18" / 24" / 32" — CFS XX — 12" Ø, 18" Ø, 24" Ø, 32" Ø COMPOST FILTER SOCK
- PROPOSED COMPOST FILTER SOCK SEDIMENT TRAP
- EROSION CONTROL MATTING
- CW — CONCRETE WASHOUT
- DS — DS XX — DIVERSION SOCK
- PROPOSED CHAIN LINK FENCE
- UGE — PROPSED UNDERGROUND ELECTRIC
- *EXISTING* MINOR CONTOUR
- 680 — *EXISTING* MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 680 — PROPOSED MAJOR CONTOUR
- ROAD RIGHT-OF-WAY
- SOIL — SOIL BOUNDARY
- Dbd — SOIL TYPE LABEL
- PROPSED TREELINE
- *EXISTING* WATERCOURSE PER NWI/NHD
- *EXISTING* FIELD DELINEATED STREAM
- WATERCOURSE / WETLAND BUFFER
- *EXISTING* TREELINE
- CLEANOUT STAKE
- POA000 — POINT OF ANALYSIS
- RRA XX — RIPRAP APRON
- B0 — PROPOSED PIPE IDENTIFICATION LABEL
- PROPOSED SWALE CENTERLINE
- PROPOSED BAFFLES
- PROPOSED CONCRETE CRADLE
- SEDIMENT BASIN SKIMMER
- SEDIMENT TRAP/BASIN DRAINAGE AREA BOUNDARY
- EMERGENCY SPILLWAY MATTING
- TEMPORARY STOCKPILE AREA
- TEMPORARY LAYDOWN AREA
- *EXISTING* WETLANDS
- FEMA FLOOD ZONE A (100-YEAR FLOODPLAIN)

## NOTES

- THE TOTAL SITE AREA IS 197.47 ACRES
- THE TOTAL LIMIT OF DISTURBANCE FOR THE SITE IS 144.06 ACRES
- THIS PLAN IS INTENDED FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY.
- SURVEY PROVIDED BY HONOR ENGINEER CO.
- EXISTING/DESIGNATED USE OF UNT 17171 TO DEEP CREEK AND UNT 17178 TO DEEP CREEK:
  - PA CH. 93 CLASSIFICATION: WWF, MF.
- EXISTING/DESIGNATED USE OF UNT 17215 TO PINE CREEK:
  - PA CH. 93 CLASSIFICATION: CWF, MF.

NORTH
GRAPHIC SCALE IN FEET
0 50 100 200

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE. - STOP CALL
811 PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |


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PHILADELPHIA, PA 19102
PHONE: 267-687-0150
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079251

| KHA PROJECT | 112882004 |
|---|---|
| DATE | 01/30/2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | EJF |
| DRAWN BY | PJQ |
| CHECKED BY | TGK |

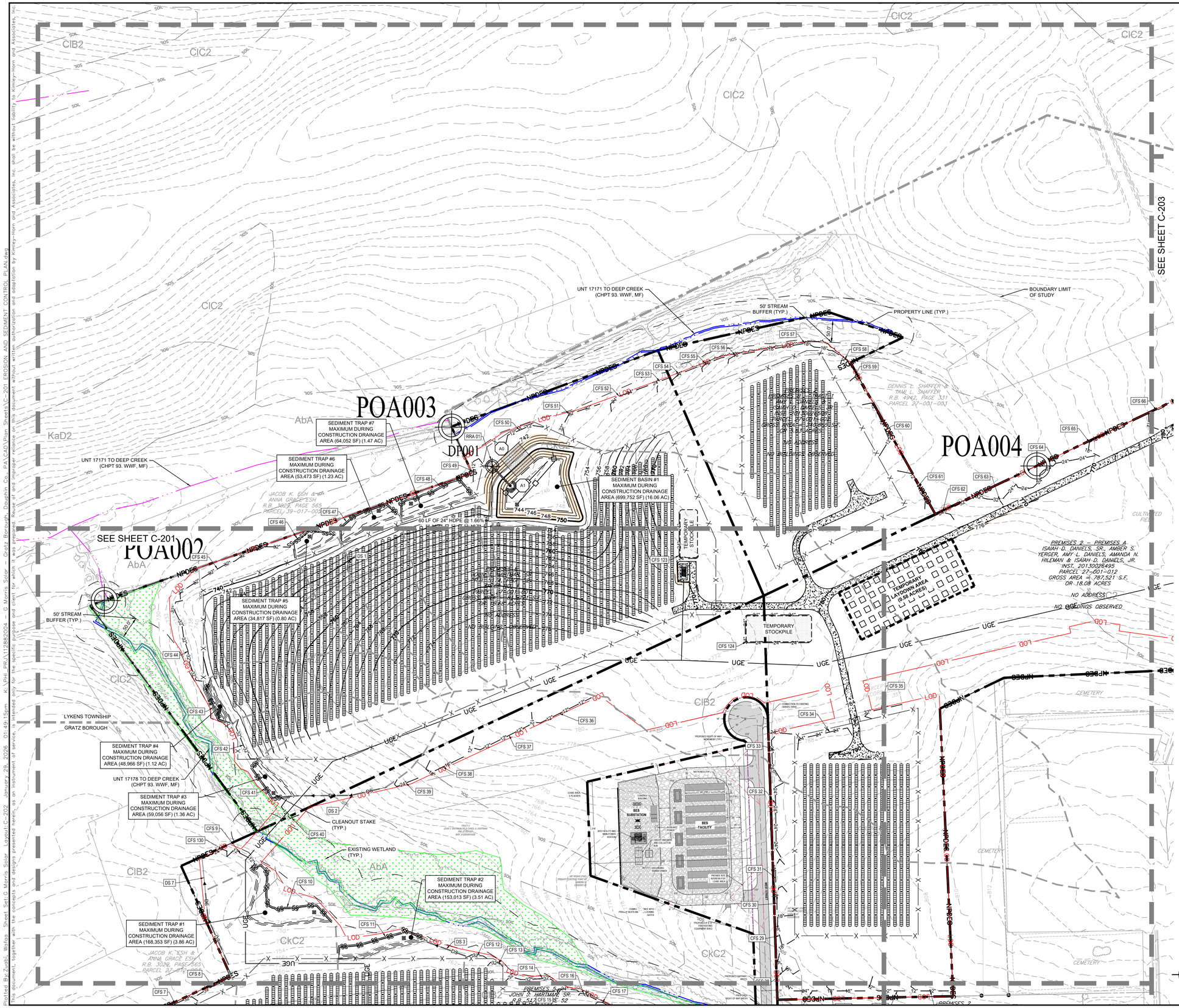
# EROSION AND SEDIMENT CONTROL PLAN 1

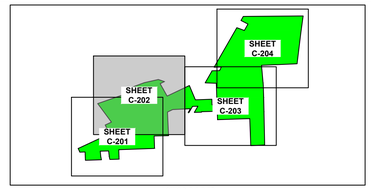
## G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-201


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KEY MAP
SCALE: 1" = 2,000'

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- PROPERTY LINE
- *EXISTING* ADJOINING PROPERTY LINE
- RCE XX — ROCK CONSTRUCTION ENTRANCE
- GRAVEL ACCESS ROAD
- TEMPORARY GRAVEL
- 12"—12"—12" CFS XX — 12" Ø COMPOST FILTER SOCK
- 18"—18"—18" CFS XX — 18" Ø COMPOST FILTER SOCK
- 24"—24"—24" CFS XX — 24" Ø COMPOST FILTER SOCK
- 32"—32"—32" CFS XX — 32" Ø COMPOST FILTER SOCK
- PROPOSED COMPOST FILTER SOCK SEDIMENT TRAP
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- CW — CONCRETE WASHOUT
- DS — DS XX — DIVERSION SOCK
- X X X — PROPOSED CHAIN LINK FENCE
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  PA CH. 93 CLASSIFICATION: WWF, MF.
- EXISTING/DESIGNATED USE OF UNT 17215 TO PINE CREEK:
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NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

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| | |
|---|---|
| KHA PROJECT | 112882004 |
| DATE | 01/30/2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | EJF |
| DRAWN BY | PJQ |
| CHECKED BY | TCK |

# EROSION AND SEDIMENT CONTROL PLAN 2

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-202

Plotted By: Zoobi, Wahaj Sheet Set: G Morris Solar Layout: C-202 January 29, 2026 01:49:15pm K:\Phl_PRV\112882004 - G Morris Solar – Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-201 EROSION AND SEDIMENT CONTROL PLAN.dwg
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SEE SHEET C-202

SEE SHEET C-204

LYKENS TOWNSHIP
GRATZ BOROUGH

RANDY LEE BOYER & DONNA L. BOYER
R.B. 2965, PAGE 134
PARCEL 27-001-029

NORTH CENTER STREET (S.R.1013)
RIGHT-OF-WAY LINE

SPRUCE STREET

BELLEVUE ROAD (S.R. 1011)

CULTIVATED FIELD

PREMISES 2
HENRY S. BELER & SARA ANN ZOOK
INST. 20140019719
PARCEL 27-002-012
R.B. Z-5, PAGE 87
"PRELIMINARY AND FINAL PLAN OF SUBDIVISION FOR HANNAMORE T. LEITZEL"
GROSS AREA = 4.46 AC.
OR 4.46 AC.
399 CENTER ST

GRATZ BOROUGH MUNICIPAL AUTHORITY
R.B. 4375, PAGE 1
PARCEL 27-002-...

BOROUGH OF GRATZ
R.B. 2003, PAGE 137
PARCEL 27-001-018
LOT 1
P.B. Z-6, PAGE 22

MELVIN L. ZOOK
INST. 20160015852
PARCEL 27-001-029
LOT 2
P.B. E-8, PAGE 31

PENNSYLVANIA POWER & LIGHT COMPANY
D.B. B-65, PAGE 298
PARCEL 27-001-032
E-8, PAGE 31
LOT 2

TROY L. SCHADEL
R.B. 4379, PAGE 357
PARCEL 27-001-030
LOT NO. 5
P.B. E-8, PAGE 31

PREMISES 3
TROY L. SCHADEL
R.B. 4379, PAGE 357
PARCEL 27-001-030
LOT NO. 5
P.B. E-8, PAGE 31
"FINAL SUBDIVISION PLAN FOR BRUCE R. & TANYA A. SCHADEL
GROSS AREA = 437,707 S.F.
OR 10.05 ACRES
201 N 2ND ST

WILLIAM J. BYLE & MICHEAL M. BYLE
R.B. 4918, PAGE 72
PARCEL 27-001-026
LOT 3
P.B. U-7, PAGE 36

JOAN L. BUFFINGTON
INST. 20070048970
PARCEL 27-002-...

CRAIG P. BYLE
R.B. 3867, PAGE 66
PARCEL 27-001-027
LOT 4
P.B. U-7, PAGE 36

CENTER STREET (S.R.1013)
NORTH SECOND STREET
EAST NORTH STREET
CHERRY STREET

TEMPORARY STOCKPILE
TEMPORARY LAYDOWN AREA (0.52 ACRES)
PERMANENT LAYDOWN AREA (0.49 ACRES)
TEMPORARY LAYDOWN AREA (0.60 ACRES)
TEMPORARY STOCKPILE
TEMPORARY STOCKPILE
TEMPORARY GRAVEL ROAD
20' TEMPORARY GRAVEL ROAD

SEDIMENT BASIN #3
MAXIMUM DURING CONSTRUCTION DRAINAGE AREA (1,084,501 SF) (24.90 AC)

SEDIMENT BASIN #4
MAXIMUM DURING CONSTRUCTION DRAINAGE AREA (1,554,539 SF) (35.69 AC)

SEDIMENT TRAP #12
MAXIMUM DURING CONSTRUCTION DRAINAGE AREA (54,577 SF) (1.25 AC)

SEDIMENT TRAP #11
MAXIMUM DURING CONSTRUCTION DRAINAGE AREA (33,144 SF) (0.76 AC)

PROPOSED LOW FLOW CROSSING #2. SEE DETAIL #3 ON SHEET C-256 FOR DETAILS

PROPOSED RIPRAP (SIZE R-5) TO BE PLACED UPSTREAM AND DOWNSTREAM OF LOW FLOW CROSSING

PROPOSED LOW FLOW CROSSING #1. SEE DETAIL #3 ON SHEET C-256 FOR DETAILS

PROPOSED RIPRAP (SIZE R-5) TO BE PLACED UPSTREAM AND DOWNSTREAM OF LOW FLOW CROSSING

76 LF OF 30" HDPE @ 9.91%
92 LF OF 36" HDPE @ 7.58%

LEVEL SPREADER #1
LEVEL SPREADER #2

DP003
DP004

POA008
POA009
POA010
POA011

BOUNDARY LIMIT OF STUDY

PROPERTY LINE (TYP.)

UNT 17215 TO PINE CREEK (CHPT 93. CWF, MF)

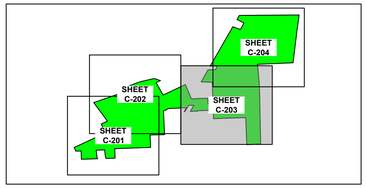
50' STREAM BUFFER (TYP.)

CFS 66 CFS 95 CFS 96 CFS 97 CFS 98 CFS 99 CFS 100 CFS 101 CFS 102 CFS 103 CFS 104 CFS 105 CFS 106 CFS 107 CFS 108 CFS 109 CFS 110 CFS 111 CFS 112 CFS 113 CFS 114 CFS 115 CFS 116 CFS 117 CFS 118 CFS 119 CFS 120 CFS 127 CFS 128 CFS 129

DS 5 DS 6 D0 D1 C0 C1 C2

CW RCE 02 RCE 04

SOIL TYPE LABELS: CbB2, CbC2, CIB2, CIC2, CrC2, KaD2, SOIL




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- TEMPORARY GRAVEL
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- CFS XX — 24" Ø COMPOST FILTER SOCK
- CFS XX — 32" Ø COMPOST FILTER SOCK
- PROPOSED COMPOST FILTER SOCK SEDIMENT TRAP
- EROSION CONTROL MATTING
- CW — CONCRETE WASHOUT
- DS — DS XX — DIVERSION SOCK
- PROPOSED CHAIN LINK FENCE
- UGE — PROPSED UNDERGROUND ELECTRIC
- *EXISTING* MINOR CONTOUR
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- POA000 — POINT OF ANALYSIS
- RRA XX — RIPRAP APRON
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- PROPOSED SWALE CENTERLINE
- PROPOSED BAFFLES
- PROPOSED CONCRETE CRADLE
- SB — SEDIMENT BASIN SKIMMER
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NORTH
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0 50 100 200

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SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJG |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJG |
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJG |


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KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJG
CHECKED BY TCK

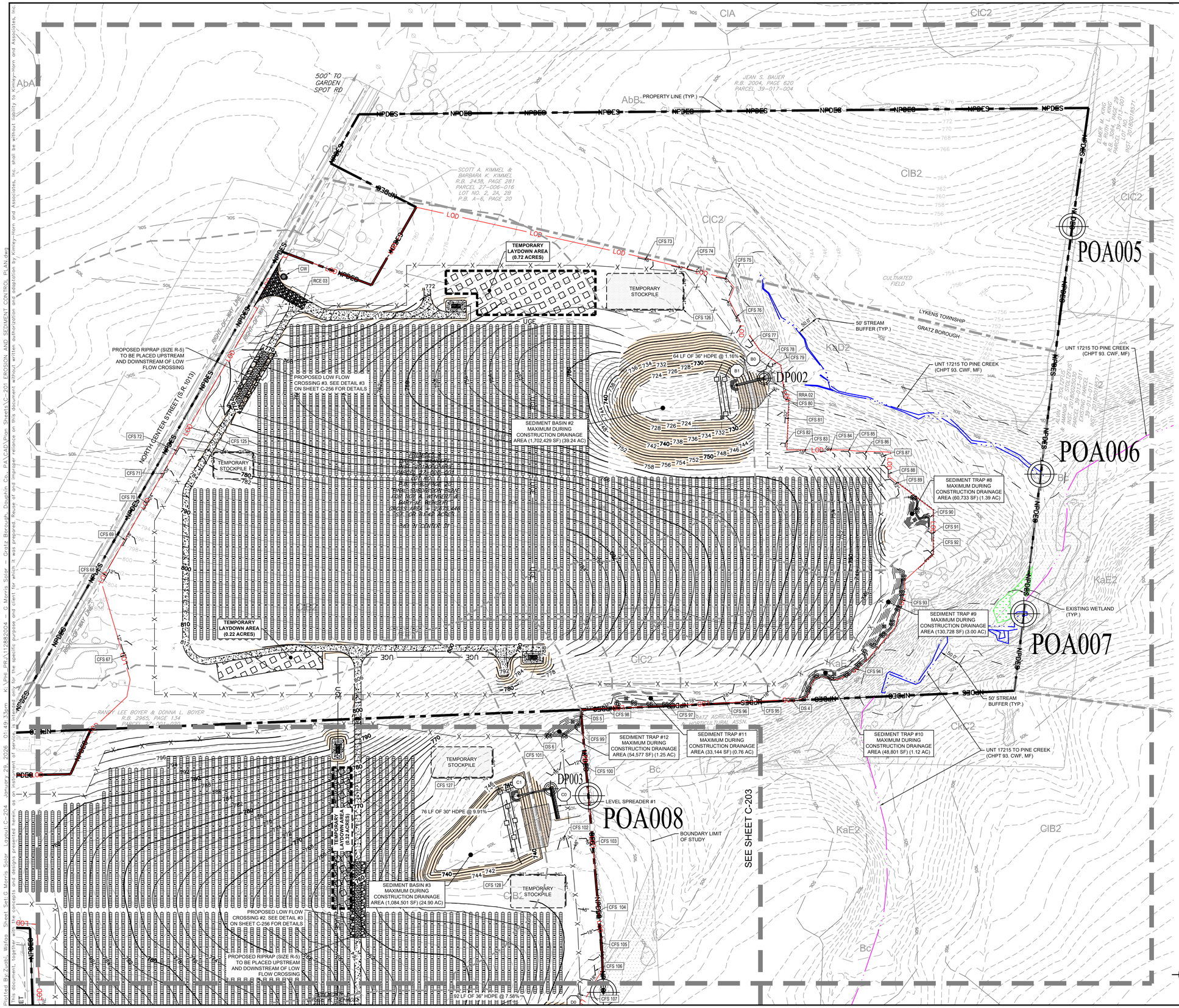
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY PA

# EROSION AND SEDIMENT CONTROL PLAN 3

SHEET NUMBER
C-203


Plotted By: Zoobi Wraps Sheet Set: G Morris Solar Layout: C-203 January 29, 2026 01:49:23pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-201 EROSION AND SEDIMENT CONTROL PLAN.dwg
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# EROSION AND SEDIMENT CONTROL PLAN 4

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-204


Plotted By: Pablo Wong Sheet Set: G Morris Solar Layout: C-204 January 29, 2026 01:49:32pm K:\EIH_PRA\112882004 – G Morris Solar – Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-201 EROSION AND SEDIMENT CONTROL PLAN.dwg
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## CONSTRUCTION INSPECTION & MAINTENANCE PROGRAM

THE FOLLOWING MAINTENANCE PROGRAM HAS BEEN DEVELOPED TO PROVIDE FOR THE INSPECTION OF BMPS ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RUNOFF EVENT, AND TO INCLUDE THE REPAIR OF THE BMPS TO ENSURE THEIR EFFECTIVE AND EFFICIENT OPERATION:

CONTRACTOR SHALL MAINTAIN AND MAKE AVAILABLE TO THE MUNICIPALITY COMPLETE, WRITTEN INSPECTION LOGS OF THE ABOVE NOTED INSPECTION AND MAINTENANCE.

UNTIL THE SITE IS STABILIZED AND DURING CONSTRUCTION ACTIVITIES, ALL BMPS MUST BE MAINTAINED PROPERLY BY THE CONTRACTOR. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY AND IN ACCORDANCE WITH THESE PROCEDURES, PLANS AND DETAILS. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS. ALL SITE INSPECTIONS MUST BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INDICATING THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG MUST BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

**RESPONSIBLE PARTY: G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC**
**2650 LOCUST ST, SUITE 100**
**ST. LOUIS, MO 63103**

1. **ALTERNATIVE ROCK CONSTRUCTION ENTRANCE** - ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
2. **COMPOST FILTER SOCKS -** INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS AND/OR AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF THE SOCK. THE SEDIMENT SHALL BE DISPOSED OF ON-SITE AND/OR IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
3. **SWALES** - CHANNELS SHOULD BE MAINTAINED TO ENSURE THAT THE SPECIFIED DESIGN DIMENSIONS AND PROTECTIVE LINING ARE AVAILABLE AT ALL TIMES. A CHANNEL SHOULD BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. DAMAGED CHANNEL LININGS SHOULD BE REPAIRED OR REPLACED IMMEDIATELY.
4. **SEDIMENT BASIN** - INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS AND/OR AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. WHEN SEDIMENT HAS ACCUMULATED TO THE CLEAN-OUT ELEVATION INDICATED ON THE STAKE, THE SEDIMENT MUST BE REMOVED TO RESTORE DESIGN CAPACITIES. THE SEDIMENT SHALL BE DISPOSED OF ON-SITE AND/OR IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR MAY BE REQUIRED TO TREAT OR DRAIN THE SEDIMENT BASINS AND/OR TRAPS SEVEN (7) DAYS AFTER A STORM EVENT IF DIRECTED BY THE LOCAL COUNTY HEALTH DEPARTMENT IN DEALING WITH WEST NILE VIRUS.
5. **VEGETATIVE SURFACE STABILIZATION -** SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY
6. **COMPOST SOCK CONCRETE WASHOUT FACILITY** - ALL FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 50% CAPACITY. PLASTIC LINERS SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.
7. **TEMPORARY STOCKPILES** - NEEDED MAINTENANCE SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.
8. **PUMPED WATER FILTER BAG (IF WARRANTED)** - A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
9. **COMPOST FILTER SOCK SEDIMENT TRAP** - INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS AND/OR AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF THE SOCK. THE SEDIMENT SHALL BE DISPOSED OF ON-SITE AND/OR IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
10. **VEGETATIVE SURFACE STABILIZATION** - SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY
11. **RIPRAP APRON** - ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
12. SEEDING, MULCHING AND FERTILIZING SHALL BE IN ACCORDANCE WITH THE SEEDING AND MULCHING SCHEDULE.
13. SHOULD THE TREE PROTECTION FENCING BE DISTURBED AT ANY POINT, IT SHALL BE REPLACED IMMEDIATELY.
14. THE CONTRACTOR SHALL HAVE AVAILABLE WATER TRUCKS OR OTHER MEANS OF CONTROLLING EXCESSIVE DUST AND AIRBORNE DEBRIS.
15. ALL DRAINAGE SWALES SHALL BE SEEDED AND MULCHED, AND PROTECTED WITH TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN, AS INDICATED ON PLANS. IF SWALES ARE TO BE SODDED, TURF REINFORCEMENT IS NOT REQUIRED.
16. ALL AREAS OF CONCENTRATED SURFACE DRAINAGE SHALL BE SEEDED AND MULCHED, AND PROTECTED WITH TEMPORARY TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN, AS INDICATED ON PLANS. IF AREAS ARE TO BE SODDED, TURF REINFORCEMENT IS NOT REQUIRED.
17. AFTER THE STORM CONVEYANCE SYSTEM IS CONSTRUCTED, MONTHLY INSPECTIONS FOR EACH DEVICE WILL BE MADE. AN INSPECTION OF ALL FACILITIES WILL BE MADE AFTER EVERY STORM TO DETERMINE THEIR RESISTANCE TO DRIVING RAINS AND ACCUMULATED RUNOFF.
18. SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY. STRAW WILL BE ANCHORED IMMEDIATELY BY ONE OF THE FOLLOWING METHODS:
    - 18.1. "CRIMPED" INTO THE SOIL USING TRACTOR DRAWN EQUIPMENT (STRAIGHT BLADED COULTER OR SIMILAR). THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. MACHINERY SHOULD BE OPERATED ON THE CONTOUR.
    - 18.2. ASPHALT, EITHER EMULSIFIED OR CUT-BACK, CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE, UNIFORMLY APPLIED AT THE RATE OF 31 GALLONS PER 1,000 SQUARE FEET
    - 18.3. SYNTHETIC BINDERS (CHEMICAL BINDERS) MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THAT IT IS NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES
    - 18.4. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS
19. THE ABOVE PROCEDURE SHALL BE REPEATED AFTER EACH SIZABLE STORM UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT. AT MONTHLY INTERVALS THEREAFTER, INSPECTIONS AND NECESSARY CLEANING WILL BE DONE. TRASH THAT IS REMOVED FROM ANY OF THE CONTROL DEVICES SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL AREA. SILT THAT HAS ACCUMULATED SHALL BE REMOVED AND ALLOWED TO DRY AND USED AS FILL WHEREVER REQUIRED ON THE SITE.
20. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE MEASURES TO ADDRESS SAID CIRCUMSTANCES.

**FOR ALL POST CONSTRUCTION STORMWATER MANAGEMENT SCM INSPECTION AND MAINTENANCE NOTES REFER TO SHEET C-350.**

## PROJECT CONSTRUCTION WASTES

1. TREES - CHIPPED AND REMOVED OFFSITE FOR MULCH.
2. BUILDING MATERIALS - SHALL BE REMOVED AND DISPOSED OF AT PROPER RECYCLING FACILITY AS PER NOTE #10 OF THE GENERAL EROSION & SEDIMENT CONTROL NOTES.
3. ROCK WASTE - ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON SITE OR AT ANOTHER FACILITY.
4. SOIL WASTE - ALL EXCAVATED SOIL SHALL BE USED ON SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF EROSION AND SEDIMENTATION CONTROLS DEVICES WILL BE INCORPORATED INTO THE FINE GRADING UPSTREAM FROM A SEDIMENT CONTROL DEVICE. EXCESS MATERIAL THAT IS REMOVED FROM EROSION AND SEDIMENTATION CONTROL MEASURES AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.
5. SEDIMENT REMOVAL FROM ALL SEDIMENT BMP'S TO BE RETURNED TO SITE UPSTREAM OF ALL PROPOSED BMP'S.
6. ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

## STANDARD EROSION CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 3H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT SCMS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
34. UPON REQUEST, THE APPLICANT OR THEIR CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
35. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
36. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

| BOTANICAL NAME | COMMON NAME |
|---|---|
| 34.00% FESTUCA RUBRA | CREEPING RED FESCUE |
| 33.00% FESTUCA OVINA, VARIETY NOT STATED | SHEEP FESCUE, VARIETY NOT STATED |
| 10.00% FESTUCA BREVIPLA, 'BEACON' | HARD FESCUE, 'BEACON' |
| 5.00% FESTUCA OVINA VAR. DURIUSCULA, GLADIATOR | HARD FESCUE, GLADIATOR |
| 5.00% FESTUCA OVINA VAR. GLAUCA, AZURE | BLUE FESCUE, AZURE |
| 5.00% POA PRATENSIS, 'KELLY' | KENTUCKY BLUEGRASS, 'KELLY' |
| 5.00% POA PRATENSIS, 'SHAMROCK' | KENTUCKY BLUEGRASS, 'SHAMROCK' |
| 3.00% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE | AUTUMN BENTGRASS, ALBANY PINE BUSY-NY ECOTYPE |
| **100.00%** | |

1 ERNMX 186-1 - NATIVE SOLAR FARM MIX
N.T.S.

## SUBSTATION SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL CONTACT ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DAUPHIN COUNTY CONSERVATION DISTRICT TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATION.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 E. SEQ. AND 287.1 ET SEQ.

BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS.

PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-253.

**FOR SUBSTATION SITE**

0. **THIS SEQUENCE IS INTENDED FOR SPECIFICALLY THE SUBSTATION SITE. EACH TRACT CAN BE CONSTRUCTED SIMULTANEOUSLY AND/OR INDEPENDENT OF ONE ANOTHER.**
1. FIELD MARK LIMIT OF DISTURBANCE AS DEPICTED ON THIS PLAN USING TEMPORARY CONSTRUCTION FENCING AND/OR PAINT.
2. INSTALL THE FOLLOWING EROSION AND SEDIMENT POLLUTION CONTROL BMP'S AS SHOWN ON THE PLAN:
   - MOBILIZE AND CONSTRUCT STAGING AREA.
   - PERFORM INITIAL CLEARING AND GRUBBING WHICH SHALL BE LIMITED TO THE AREAS NEEDED TO INSTALL THE PROPOSED PERIMETER BMP'S.
   - INSTALL ALTERNATIVE ROCK CONSTRUCTION ENTRANCE #1-4 AND TRACKING PADS WITH ASSOCIATED CONCRETE WASHOUT AREAS.
   - INSTALL COMPOST FILTER SOCKS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. PROVIDE IMMEDIATE STABILIZATION FOR TEMPORARY STOCKPILES.
   - INSTALL DIVERSION SOCKS #1-6.
3. INSTALL SEDIMENT BASINS #1-4, AS PER PLAN AND DETAILS
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALL OF THE BMP.**
   - ONLY LIMITED CLEARING AND GRUBBING IS PERMITTED FOR CONSTRUCTION OF ACCESS TO SEDIMENT BASIN.
   - INSTALL PERMANENT OUTFALL STRUCTURE, CONCRETE CRADLE, AND ASSOCIATED OUTFALL PIPE WITH ANTI-SEEP COLLAR AND OUTFALL STRUCTURE.
   - CONCRETE CRADLES SHALL BE INSTALLED ON OUTLET BARRELS FOR ALL SEDIMENT BASINS WITH GREATER THAN 10 ACRES OF CONTRIBUTING DRAINAGE AREA.
   - INSTALL SKIMMER WITH STONE LANDING BERM, SEDIMENT STORAGE DEWATERING FACILITY, CLEAN OUT STAKE, AND ASSOCIATED BAFFLES.
   - CONSTRUCT SEDIMENT BASIN EMBANKMENT WITH EMERGENCY SPILLWAY AND EXCAVATE TO GRADES ON PLAN, STABILIZE IMMEDIATELY WITH EROSION CONTROL MATTING AS INDICATED ON THE PLAN. PROVIDE TEMPORARY AND PERMANENT STABILIZATION AS NECESSARY.
   - THE BASIN IS TO BE FUNCTIONING PROPERLY PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS THE BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.
4. INSTALL VEGETATED SWALE #1 (SCM NO. 8 - POA009) (REFER TO PCSM DETAILS FOR SPECIFIC SCM SEQUENCE)
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE FINAL GRADING OF THE SWALE AND PRIOR TO STABILIZATION TO ENSURE PROPER DESIGN.**
   - CONSTRUCT SWALE FROM DOWNSTREAM TO UPSTREAM.
   - INSTALL EROSION CONTROL MATTING AS SHOWN ON THE PLAN IMMEDIATELY AFTER INSTALLATION IS COMPLETED.
5. GENERAL CONTRACTOR TO PERFORM UTILITY DIGS IN ORDER TO CONFIRM EXISTING DEPTHS/LOCATIONS PRIOR MAJOR EARTH DISTURBANCE ACTIVITIES, INCLUDING BUT NOT LIMITED TO EXISTING ELECTRIC, GAS, SANITARY SEWERS, STORM SEWERS AND WATER MAINS.
6. STRIP SITE. DEMOLISH REMAINING ITEMS NOTED TO BE REMOVED. (REFERENCE EXISTING CONDITIONS AND DEMOLITION PLANS)
   - OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE. ANY WATER TRAPPED IN LOW LYING AREA MUST BE PUMPED THROUGH A FILTER BAG.
   - AS SOON AS SLOPES AND OTHER DISTURBED AREAS REACH FINAL GRADE THEY MUST BE STABILIZED. PROVIDE TEMPORARY STABILIZATION UPON COMPLETION OR TEMPORARY CESSATION OF ALL EARTH DISTURBANCE ACTIVITIES OF AT LEAST FOUR (4) DAYS. TO AVOID AIRBORNE PARTICLE ISSUES, DUST CONTROL MEASURES SHOULD BE ENACTED. SPRINKLING AND IRRIGATION IS RECOMMENDED.
7. ROUGH GRADE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN, PROVIDE TEMPORARY STABILIZATION (FOR TEMPORARY STABILIZATION REQUIREMENTS REFER TO GENERAL CONSERVATION NOTES AND SPECIFICATIONS ON SHEET C-250 AND INSTALL EROSION CONTROL MATTING ON ALL AREAS GREATER THAN 3:1 AS PER DETAILS AND MANUFACTURES SPECIFICATIONS.
   - GRADING ACTIVITIES SHOULD BE AVOIDED DURING EXTREMELY WET CONDITIONS TO MINIMIZE SOIL COMPACTION, DEEP RUTTING AND SOIL SMEARING.
8. INSTALL STORM SEWERS A0-D1
   - CONSTRUCT NEW STORM SEWERS FROM DOWN STREAM TO UPSTREAM.
   - TRENCH ONLY AS FAR IN ONE DAY AS PIPE CAN BE INSTALLED IN THAT SAME PERIOD.
   - PLACE SOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY.
   - INSTALL RIPRAP APRONS #1-2.

10. EXCAVATE AND INSTALL REQUIRED ELECTRICAL UTILITIES.
11. INSTALL STONE DRIVES AND STONE EQUIPMENT PAD AREAS WITH ASSOCIATED EQUIPMENT AND SECURITY FENCING.
12. INSTALL INFILTRATION BASINS #1-4 (REFER TO PCSM DETAILS FOR SPECIFIC SCM SEQUENCE).
    - PRIOR TO THE INSTALLATION OF THE STORMWATER FACILITY, THE ENTIRE DRAINAGE AREA MUCH ACHIEVE A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA BEFORE PROCEEDING. DAUPHIN COUNTY CONSERVATION DISTRICT IS TO BE CONTACTED PRIOR TO THE INSTALLATION OF THE INFILTRATION BASIN.
    - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALLATION OF THE SCM.**
    - INSTALL PROPOSED STORM SEWER, CONCRETE CRADLE, AND HEADWALL AS SHOWN ON THE PLAN.
    - CONSTRUCT NEW STORM SEWERS FROM DOWN STREAM TO UPSTREAM. TRENCH ONLY AS FAR IN ONE DAY AS PIPE CAN BE INSTALLED IN THAT SAME PERIOD. PLACE SPOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY. INSTALL ASSOCIATED RIPRAP APRONS #1-2.
    - AFTER INSTALLATION OF PERMANENT SCM FACILITY, INSTALL COMPOST FILTER SOCK AROUND THE ENTIRE FACILITY, AS SHOWN ON THE PLAN.
13. PERFORM FINAL GRADING. STABILIZE IMMEDIATELY.
    - RESPREAD TOPSOIL. SEED AREAS AS DESIGNATED PER THE SEEDING SPECIFICATIONS. PERMANENT SEEDING WITH NATIVE SEED WILL BE APPLIED BY BROADCASTING.
    - TO ASSURE RAPID STABILIZATION, ADDITIONAL SUPPLEMENTAL SEEDING SHALL BE PLACED WHERE COVERAGE IS LESS THAN 70%.
    - INSTALL FINAL VEGETATION INCLUDING SOD, LANDSCAPING AND TREES.

15. UPON STABILIZATION (ONCE ALL AREAS ARE COVERED WITH A STAND OF GRASS AT LEAST 70 PERCENT PERENNIAL/VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION) AND BEFORE ANY TEMPORARY BMPS ARE REMOVED, THE DAUPHIN COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED. UPON APPROVAL FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL FACILITIES AND DEMOBILIZE. IMMEDIATELY REPAIR AND STABILIZE ANY DISTURBANCE ASSOCIATED WITH SEDIMENT CONTROL REMOVAL.
16. **CLEAR SITE OF ALL UNWANTED MATERIAL. OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL ONSITE MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE.**

| BOTANICAL NAME | COMMON NAME |
|---|---|
| 20.00% PANICUM CLANDESTINUM, TIOGA | DEERTONGUE, TIOGA |
| 20.00% PUCCINELLIA DISTANS, FULTS | ALKALIGRASS, FULTS |
| 18.00% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE | VIRGINIA WILDRYE, MADISON-NY ECOTYPE |
| 15.00% AGROSTIS STOLONIFERA, 'PENNCROSS' | CREEPING BENTGRASS, 'PENNCROSS' |
| 15.00% POA PALUSTRIS | FOWL BLUEGRASS |
| 10.00% CAREX VULPINOIDEA, PA ECOTYPE | FOX SEDGE, PA ECOTYPE |
| 1.00% CAREX SCOPARIA, PA ECOTYPE | BLUNT BROOM SEDGE, PA ECOTYPE |
| 1.00% JUNCUS EFFUSUS | SOFT RUSH |
| **100.00%** | |

2 ERNMX 126 - RETENTION BASIN FLOOR MIX
N.T.S.

## GENERAL ON-SITE SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL CONTACT ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DAUPHIN COUNTY CONSERVATION DISTRICT TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATION.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT.

LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF ELECTRIC UTILITY LINE PLACEMENT AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.

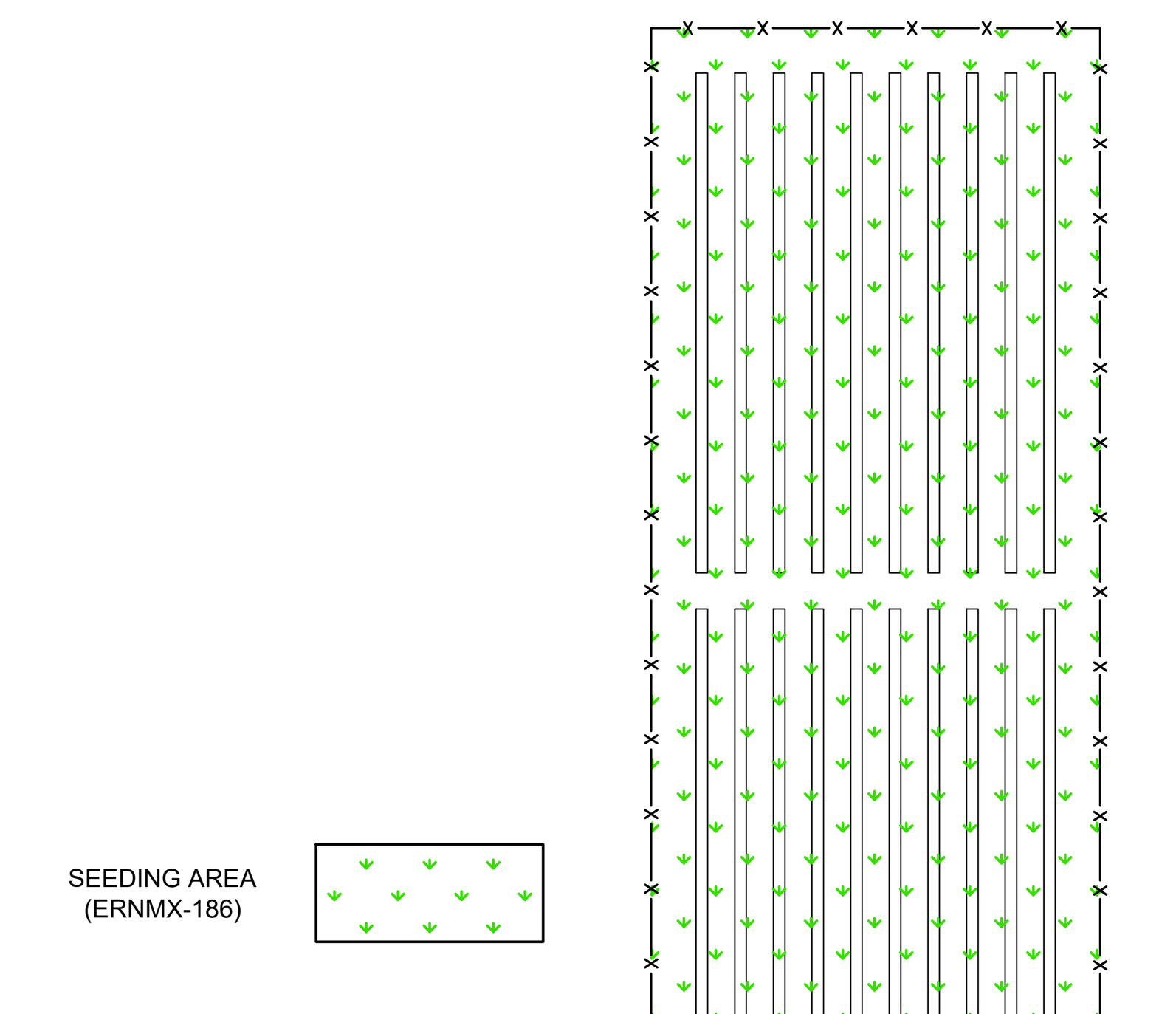
THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 E. SEQ. AND 287.1 ET SEQ.

BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS.

PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-253.

**STAGE**

0. **THIS SEQUENCE IS INTENDED FOR EACH TRACK THAT WILL BE IMPROVED WITH SOLAR PANELS. EACH TRACT CAN BE CONSTRUCTED SIMULTANEOUSLY AND/OR INDEPENDENT OF ONE ANOTHER. GC TO MAKE SURE TO REVIEW PNDI AVOIDANCE MEASURES TO ENSURE ALL TIME FRAMES OF WHEN CERTAIN TYPES OF WORK CAN AND CANNOT BE PERFORMED.**
1. FIELD MARK LIMIT OF DISTURBANCE AS DEPICTED ON THIS PLAN USING TEMPORARY CONSTRUCTION FENCING AND/OR PAINT.
   - FIELD MARK THE WETLANDS WITHIN LOD WITH ORANGE CONSTRUCTION FENCE.
2. INSTALL THE FOLLOWING EROSION AND SEDIMENT POLLUTION CONTROL BMP'S AS SHOWN ON THE PLAN:
   - INSTALL ALTERNATE ROCK CONSTRUCTION ENTRANCES #1-4 AND TRACKING PADS WITH ASSOCIATED CONCRETE WASHOUT AREAS.
   - MOBILIZE AND CONSTRUCT STAGING AREA.
   - PERFORM INITIAL CLEARING AND GRUBBING WHICH SHALL BE LIMITED TO THE AREAS NEEDED TO INSTALL THE PROPOSED PERIMETER BMP'S.
   - INSTALL COMPOST FILTER SOCKS AND COMPOST FILTER SOCK SEDIMENT TRAPS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS LOCATED ON SHEET C-255. CONSTRUCT COMPOST FILTER SOCK SEDIMENT TRAPS AS SHOWN PER PLANS AND DETAILS LOCATED ON SHEET C-255. PROVIDE IMMEDIATE STABILIZATION FOR TEMPORARY STOCKPILES.
   - INSTALL DIVERSION PIPES, OUTLETS (IF APPLICABLE) AND CONCRETE CRADLES ON ALL TEMPORARY PIPING (OR APPROVED EQUIVALENT)
   - INSTALL DIVERSION SOCKS #1-7.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS TO BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.
3. GC TO PERFORM UTILITY DIGS IN ORDER TO CONFIRM EXISTING DEPTHS/LOCATIONS PRIOR MAJOR EARTH DISTURBANCE ACTIVITIES, INCLUDING BUT NOT LIMITED TO EXISTING ELECTRIC, GAS, SANITARY SEWERS, STORM SEWERS AND WATER MAINS.
4. CONSTRUCT TEMPORARY SEDIMENT BASINS #1-4 AS SHOWN PER PLANS AND DETAILS
   - ONLY LIMIT CLEARING AND GRUBBING AREAS TO ALLOW FOR INSTALLATION OF BMP FACILITIES.
   - EXCAVATE TO GRADES AS SHOWN ON THE PLANS AND CONSTRUCT BASIN EMBANKMENT WITH EMERGENCY SPILLWAYS. STABILIZE IMMEDIATELY.
   - INSTALL PERMANENT RISERS, PIPING , AND RIPRAP.
   - --- INSTALL ANTI-SEEP COLLARS FOR SEDIMENT BASINS #1 AND #4 ONLY.
   - CONCRETE CRADLES SHALL BE INSTALLED ON OUTLET BARRELS FOR ALL SEDIMENT BASINS WITH GREATER THAN 10 ACRES OF CONTRIBUTARY DRAINAGE AREA.
   - INSTALL SKIMMER WITH STONE LANDINGS BERM, SEDIMENT STORAGE DEWATERING FACILITY, TURBIDITY BARRIERS AND CLEAN OUT STAKE.
   - THE TEMPORARY SEDIMENT BASINS ARE TO BE STABILIZED AND FUNCTIONING PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS THE BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.
5. ROUGH GRADE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN, PROVIDE TEMPORARY STABILIZATION (FOR TEMPORARY STABILIZATION REQUIREMENTS REFER TO GENERAL CONSERVATION NOTES AND SPECIFICATIONS AND SEEDING SPECIFICATIONS ON SHEET C-250 AND INSTALL EROSION CONTROL MATTING ON CRITICAL AREAS WHERE SHOWN AS PER PLANS, DETAILS AND MANUFACTURES SPECIFICATIONS.
   - IF EXISTING FIELD TILES ARE ENCOUNTERED DURING CONSTRUCTION, GC TO WORK WITH LOCAL TILE CONTRACTOR TO REPAIR ANY DAMAGED TILES AS NECESSARY TO PRE-EXISTING CONDITIONS.
   - EXISTING ROW CROP FIELDS WILL BE TREATED THE SAME AS ALL OTHER SITES AND PREPARED FOR SOLAR PANELS IN SIMILAR FASHION.
   - ALL AREAS WITHIN LOD WILL BE STABILIZED WITH THE SPECIFIED PERMANENT SEED MIXTURES.
   - ALL NON-GRADED, BUT UN-STABILIZED AREAS, INCLUDING PAST AGRICULTURAL AREAS WITHIN THE SITE BOUNDARY WILL BE STABILIZED WITH PERMANENT SEED MIX.
6. GRADING ACTIVITIES SHOULD BE AVOIDED DURING EXTREMELY WET CONDITIONS TO MINIMIZE SOIL COMPACTION, DEEP RUTTING AND SOIL SMEARING AS DETERMINED BY THE FIELD PROJECT MANAGER.
7. AS NECESSARY, USE DISKS, TILLERS, OR HARROWS TO BREAK UP THE SURFACE WHERE SOIL HAS BECOME COMPACTED DURING CONSTRUCTION ACTIVITIES IN ORDER TO CREATE VIABLE SEED BEDS AS DETERMINED BY THE FIELD PROJECT MANAGER TO ENSURE SEED WILL TAKE PROPERLY.
8. AS SOON AS ANY CONSTRUCTION ACTIVITY IS COMPLETE (APPLY A COVER CROP) OR WORK IN AN AREA IS PUT ON HOLD (APPLY STRAW MULCH VIA CRIMPING) TO REDUCE THE RISK OF SOIL EROSION ON THE SITE TO AREAS THAT WILL NOT BE ACTIVELY GRADED. ALLOW FOR A MINIMUM ESTABLISHMENT PERIOD OF FOUR DAYS. REFER TO THE SEEDING SPECIFICATIONS ON SHEET C-250. THIS COVER CROP WILL ESTABLISH QUICKLY, PROVIDING ADDITIONAL EROSION CONTROL THROUGHOUT CONSTRUCTION, ALONG WITH PROTECTION OF FINAL NATIVE VEGETATION DURING ITS ESTABLISHMENT PERIOD.
9. INSTALL THE PERIMETER FENCING LEAVING SECTIONS OPEN FOR INGRESS/EGRESS.
10. FOUNDATION PILE DRIVING AND TRENCHING FOR UNDERGROUND UTILITIES SHALL BE STAGED TO CONCENTRATE WORK IN PHASES, TO REDUCE SITE DISTURBANCE. THE STAGING WILL DEPEND ON SITE PROGRESS AND WILL EXCLUDE ALL TEMPORARY SEDIMENT BASIN AREAS WHERE PROPOSED ARRAYS ARE LOCATED. TYPICALLY PILES WILL BE INSTALLED IN THE FOLLOWING MANNER:
    - PILES TO BE LAID OUT PRIOR TO INSTALLATION.
    - EACH PILE IS FIELD VERIFIED FOR LOCATION AND ORIENTATION PRIOR TO INSTALL.
    - EQUIPMENT WILL THEN COMMENCE PILE DRIVING INSTALLATION.
    - AFTER PILE INSTALLATION COMPLETE INSTALL UNDERGROUND ELECTRIC CONDUIT.
    - -- TRENCH ONLY AS FAR IN ONE DAY AS ELECTRIC CONDUIT CAN BE INSTALLED IN THAT SAME PERIOD.
    - -- PLACE SOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY.
    - MOUNT THE PANELS
    - REFER TO OFF-SITE SEQUENCE OF CONSTRUCTION FOR OFF-SITE CABLE INSTALLATION/TIE IN TO PROPOSED ARRAY AREAS.
11. THROUGHOUT CONSTRUCTION OF THE ARRAY, CONTINUOUSLY SEED WITH COVER CROP IN AREAS WHERE WORK IS PAUSED OR COMPLETED.
12. PERFORM FINAL GRADING AND STABILIZATION FOR EACH PROPERTY AS FINAL CONSTRUCTION ACTIVITIES ARE COMPLETED (I.E. NOT AS A WHOLE FOR THE PROJECT AT ONE TIME, EACH PROPERTY PHASED AS THEY ARE COMPLETED) EXCLUDING ALL TEMPORARY SEDIMENT BASIN AREAS WHERE PROPOSED ARRAYS ARE LOCATED.
    - RESPREAD TOPSOIL A MIN. OF 6". REFER TO TOPSOIL APPLICATION NOTES ON SHEET C-350.
    - INSTALL AMENDED SOILS. REFERENCE THE POST CONSTRUCTION STORMWATER MANAGEMENT PLANS ON SHEET C-350 FOR AMENDED SOIL SPECIFIC SEQUENCE OF CONSTRUCTION.
    - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALLATION OF THE BMP.**
    - SEED AREAS AS DESIGNATED PER THE SEEDING SPECIFICATIONS INSTALLATION INSTRUCTIONS.
    - TO ASSURE RAPID STABILIZATION, ADDITIONAL SUPPLEMENTAL SEEDING SHALL BE PLACE WHERE COVERAGE IS LESS THAN 70%.
    - INSTALL FINAL VEGETATION LANDSCAPING AND TREES ASSOCIATED WITH THE REVEGETATE USING NATIVE SPECIES BMP.
    - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO VERIFY THAT THE PROPOSED TREES/PLANTINGS USED FOR THE LANDSCAPE RESTORATION CREDITS HAVE BEEN PLANTED.**
13. REMOVE TEMPORARY SEDIMENT BASINS AND GRADE TO FINAL DESIGN AS SHOWN ON THE PCSM PLANS.
    - PRIOR TO THE REMOVAL, THE ENTIRE DRAINAGE AREA ASSOCIATED WITH EACH BASIN SHALL MUST ACHIEVE A MINIMUM OF 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA BEFORE PROCEEDING.
    - DEWATER THE SEDIMENT BASIN USING THE SEDIMENT DEWATERING FACILITY.
    - REMOVE ALL ACCUMULATED SEDIMENT FROM THE BASIN. SEDIMENT SHOULD BE SPREAD OUT AND INCORPORATED INTO THE ON-SITE SOILS.
    - REMOVE ALL TEMPORARY BMP'S ASSOCIATED WITH THE FACILITY INCLUDING (BUT NOT LIMITED TO) BAFFLES, CLEAN OUT STAKE, SKIMMER WITH STONE LANDING BERM, DIVERSION SOCK. SEDIMENT DEWATERING FACILITY, CMP RISER, TEMPORARY STORMWATER PIPE, CONCRETE CRADLES, AND RIPRAP ARPON.
    - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE DECOMMISSIONING OF THE TEMPORARY BMP.**
    - PERFORM FINAL GRADING, SEEDING AND STABILIZATION.
    - INSTALL REMAINING ARRAY PILE, PANELS AND SITE PERIMETER FENCING.
14. REMOVE TEMPORARY STORMWATER BYPASS FACILITIES AND RESTORE GRADING TO FINAL DESIGN AS SHOWN ON THE PCSM PLANS
    - PRIOR TO THE REMOVAL, THE ENTIRE DRAINAGE AREA ASSOCIATED WITH EACH TEMPORARY STORM SYSTEM MUST ACHIEVE A MINIMUM OF 70% PERENNIAL VEGETATIVE COVER OVER THE DISTURBED AREA BEFORE PROCEEDING
    - REMOVE ALL TEMPORARY DIVERSION SOCKS ASSOCIATED WITH THE HEADWALLS FOR EACH TEMPORARY STORM SYSTEM. STABILIZE IMMEDIATELY AS NECESSARY
    - TEMPORARY PIPES FOR EACH FACILITY SHALL BE REMOVED. LIMIT ADVANCED TRENCHING, PIPE REMOVAL AND BACKFILLING THAT CAN BE COMPLETED IN THE SAME DAY
    - DISTURBED AREAS SHALL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
    - SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING BACKFILLING.
15. UPON SITE STABILIZATION (ONCE ALL AREAS ARE COVERED WITH A STAND OF GRASS AT LEAST 70 PERCENT PERENNIAL/VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION) AND BEFORE ANY TEMPORARY BMP'S ARE REMOVED, THE DAUPHIN COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED. UPON APPROVAL FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL FACILITIES AND DEMOBILIZE. IMMEDIATELY REPAIR AND STABILIZE ANY DISTURBANCE ASSOCIATED WITH SEDIMENT CONTROL REMOVAL.
16. **CLEAR SITE OF ALL UNWANTED MATERIAL. OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL ONSITE MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT R, E, GULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE.**
17. **FINAL SITE INSPECTION WITH ENGINEER OF RECORD AND PERMITTEE TO BE PERFORMED. AFTER FINAL INSPECTION AND ONCE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED, A NOTICE OF TERMINATION APPLICATION SHALL BE SUBMITTED TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP).**




3 TYPICAL SEEDING DETAIL FOR SOLAR ARRAYS AREAS
N.T.S.

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

Kimley»Horn
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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PAUL W. HUGHES
PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# EROSION AND SEDIMENT CONTROL NOTES

# G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY PA

SHEET NUMBER
C-250

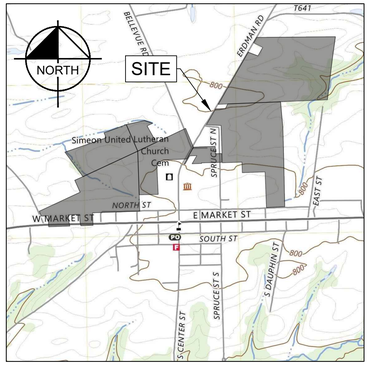
Plotted By: Zuabi, Wafaa Sheet Set: G Morris Solar Layout: C-250 January 29, 2026 01:49:52pm K:\PHI_PRJ\112882004 – G Morris Solar – Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-250 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

| Soil Type | Map Unit Symbol | Depth to Saturated Zone / Seasonal High Water Table (in.) | Depth to Bedrock - Fragipan (in.) | Depth to Bedrock - Lithic (in.) | Hydrologic Soils Group | Cutbanks Cave | Corrosive To Concrete\Steel | Droughty | Easily Erodible | Flooding | Hydric / Hydric Inclusions | Low Strength / Landslide Prone | Slow Percolation | Piping | Poor Source of Topsoil | Frost Action | Shrink - Swell | Potential Sinkhole | Ponding | Wetness |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albrights silt loam, 0 to 3 percent slopes | AbA | 17 | 17 | 60 | C/D | X | C/S | X | X | | X | X | X | X | X | X | | | | X |
| Albrights silt loam, 3 to 10 percent slopes, moderately eroded | AbB2 | 17 | 17 | 60 | C/D | X | C/S | X | X | | X | X | X | X | X | X | | | | X |
| Atkins silt loam | At | 0 | >80 | 60 | B/D | X | C/S | | | X | X | X | X | X | X | X | | | | X |
| Basher silt loam | Bc | 18 | >80 | 72 | B/D | X | C/S | | | X | X | X | X | X | X | X | | | | X |
| Brinkerton and Armagh silt loams, 0 to 3 percent slopes | BtA | 0 | 11 | 40 | C/D | X | C/S | X | X | | X | X | X | X | X | X | X | | | X |
| Brinkerton and Armagh silt loams, 3 to 8 percent slopes, moderately eroded | BtB2 | 0 | 11 | 40 | C/D | X | C/S | X | X | | X | X | X | X | X | X | X | X | X | X |
| Calvin-Klinesville shaly silt loams, 8 to 15 percent slopes, moderately eroded | CkC2 | >80 | >80 | 10 | B/D | X | C | X | X | | X | | | X | | X | | | | X |
| Calvin-Klinesville shaly silt loams, 15 to 25 percent slopes, moderately eroded | CkD2 | >80 | >80 | 10 | B/D | X | C | X | X | | X | | | X | | X | | | | X |
| Calvin-Leck Kill shaly silt loams, 0 to 3 percent slopes | ClA | >80 | >80 | 20 | A/B | X | C | X | X | | X | | | X | | X | | | | X |
| Calvin-Leck Kill shaly silt loams, 3 to 8 percent slopes, moderately eroded | ClB2 | >80 | >80 | 20 | A/B | X | C | X | X | | X | | | X | | X | | | | X |
| Calvin-Leck Kill shaly silt loams, 8 to 15 percent slopes, moderately eroded | ClC2 | >80 | >80 | 20 | A/B | X | C | X | X | | X | | | X | | X | | | | X |
| Comly silt loam, 2 to 8 percent slopes, moderately eroded | CoB2 | 18 | 20 | 44 | C | X | C/S | X | X | | X | | | X | X | X | | | | |
| Dekalb channery sandy loam, 3 to 8 percent slopes, moderately eroded | DcB2 | >80 | >80 | 20 | A | X | C | X | | | | X | X | X | X | X | | | | |
| Dekalb and Lehew very stony sandy loams, 25 to 80 percent slopes | DlF | >80 | >80 | 20 | A | X | C | X | | | | X | X | X | X | X | | | | |
| Klinesville shaly silt loam, 15 to 25 percent slopes, moderately eroded | KaD2 | >80 | >80 | 10 | D | X | C/S | X | X | | X | | X | | X | X | | | | |
| Klinesville shaly silt loam, 25 to 50 percent slopes, moderately eroded | KaE2 | >80 | >80 | 10 | D | X | C/S | X | X | | X | | X | | X | X | | | | |
| Laidig gravelly loam, 3 to 8 percent slopes, moderately eroded | LaB2 | 28 | 30 | >80 | B | X | C/S | X | X | | X | X | X | X | X | X | | | | |
| Laidig very stony loam, 0 to 8 percent slopes | LdB | 30 | 28 | >80 | B | X | C/S | X | X | | X | X | X | X | X | X | | | | |
| Laidig very stony loam, 8 to 25 percent slopes | LdD | 30 | 28 | >80 | B | X | C/S | X | X | | X | X | X | X | X | X | | | | |

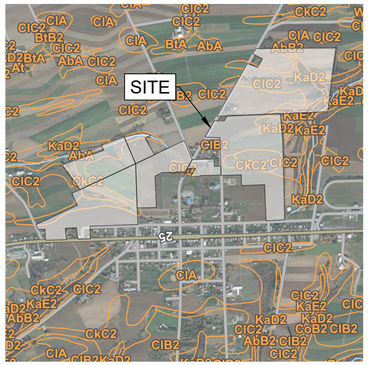
* SOIL INFORMATION HAS BEEN OBTAINED FROM THE WEB SOIL SURVEY WHICH IS OPERATED BY THE USDA NATIONAL RESOURCES CONSERVATION SERVICE.

## SOIL LIMITATIONS AND RESOLUTIONS

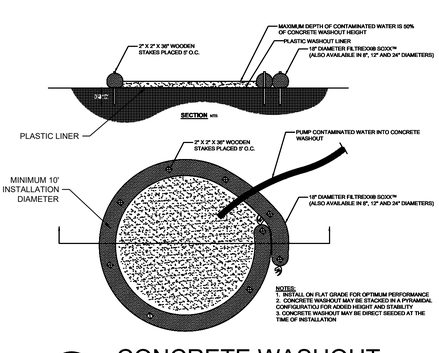
1. SEASONAL HIGH WATER TABLE LIMITATION - DURING CONSTRUCTION PONDING WATER NEEDS TO BE PUMPED TO A SEDIMENT FILTER BAG OR OTHER SEDIMENT CONTROL BMP.
2. BEDROCK LIMITATION - INFORM CONTRACTOR
3. CUTBANKS CAVE - GC TO USE CAUTION WHEN TRENCHING. ALL APPLICABLE OSHA STANDARDS AND REGULATIONS MUST BE IMPLEMENTED AT ALL TIMES.
4. CORROSIVE TO CONC./STEEL - GC TO PROVIDE TREATMENT TO ALL MATERIALS TO PREVENT CORROSION. (INCLUDING BUT NOT LIMITED TO: PAINTS, TARS, ETC..)
5. DROUGHTY - PROVIDE WATER TRUCK FOR IRRIGATION.
6. EASILY ERODIBLE - PROVIDE TEMPORARY/PERMANENT STABILIZATION MEASURES AS NEEDED.
7. FLOODING - DURING CONSTRUCTION PONDING WATER NEEDS TO BE PUMPED TO A SEDIMENT FILTER BAG OR OTHER SEDIMENT CONTROL BMP.
8. HYDRIC - UTILIZE PUMPED WATER FILTER BAG WHEN WET SOILS ARE ENCOUNTERED.
9. LOW STRENGTH/LANDSLIDE PRONE - GC TO PROVIDE EROSION CONTROL MATTING ON SLOPES GREATER THAN 3:1 AND TAKE PRECAUTION TO AVOID OVERLOADING THE SOILS.
10. SLOW PERCOLATION - GC TO FENCE OFF INFILTRATION AREAS TO AVOID EXCESSIVE COMPACTION DURING CONSTRUCTION.
11. PIPING - GC TO PROVIDE SUMP PUMP OR INSTALL UNDERDRAIN TO CONVEY PIPING FLOWS TO A BMP.
12. POOR SOURCE OF TOPSOIL - GC TO PROVIDE TOPSOIL AS NEEDED.
13. FROST ACTION - WHEN SOILS WARRANT, PROVIDE UNDERDRAIN TO REMOVE EXCESSIVE WATER.
14. SHRINK\SWELL - CONTRECTOR TO IMPORT/EXPORT MATERIAL AS NEEDED. REFER TO ALL REGULATIONS FOR CLEAN FILL AND EXPORT REQUIREMENTS.
15. POTENTIAL SINKHOLE - INFORM ENGINEER IMMEDIATELY AND FILL SINKHOLE PER CHAPTER 17 OF PA E&S MANUAL.
16. PONDING - UTILIZE PUMPED WATER FILTER BAG WHEN PONDING IS ENCOUNTERED.
17. WETNESS - WHEN WET SOILS ARE ENCOUNTERED UTILIZE PUMPED WATER FILTER BAG TO DEWATER.



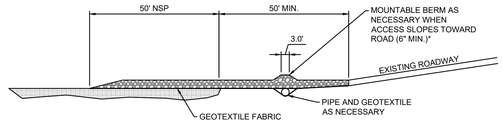

USGS MAP
(LYKENS, PA)
SCALE: 1" = 1,500'



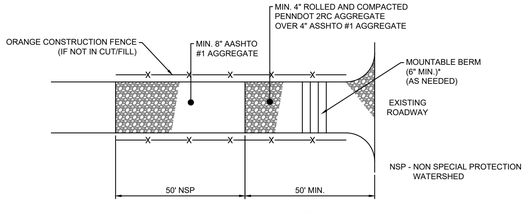

SOILS MAP
(USGS SOILS MAP AERIAL IMAGERY)
SCALE: 1" = 1,500'




1 CONCRETE WASHOUT
Scale: N.T.S.




PROFILE VIEW




* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

PLAN VIEW

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ALTERNATIVE ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

# VEGETATIVE STABILIZATION SPECIFICATIONS

THE SPECIFICATIONS NOTED BELOW ARE INTENDED TO REPRESENT STANDARD E&S WORKSHEET #21 FROM THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012.

**(TEMPORARY)**

| | SPRING | FALL | WINTER |
|---|---|---|---|
| | *MARCH 16 - AUGUST 15* | *AUGUST 16 - OCTOBER 15* | *OCTOBER 16 - MARCH 15* |
| SPECIES: | ANNUAL RYEGRASS | ANNUAL RYEGRASS | WINTER RYE |
| % PURE LIVE SEED (PLS): | 81% | 81% | 83% |
| APPLICATION RATE: | 40 LB/ACRE | 40 LB/ACRE | 168 LB/ACRE |

| | |
|---|---|
| SPECIES: | SPRING OATS / WINTER WHEAT |
| % PURE LIVE SEED (PLS): | 83% / 83% |
| APPLICATION RATE: | 96 LB/ACRE / 180 LB/ACRE |
| FERTILIZER TYPE: | COMMERCIAL 10-10-10 |
| FERTILIZER APPL. RATE: | 500 LB/ACRE (NOT REQUIRED FOR STOCKPILES) |
| LIMING RATE: | 1 TON/ACRE (NOT REQUIRED FOR STOCKPILES) |
| MULCH TYPE: | GRASS HAY OR CEREAL STRAW |
| MULCHING RATE: | 3 TONS/ACRE |

**(PERMANENT - ALL AREAS OUTSIDE OF SCM TO THE LIMIT OF DISTURBANCE)**

TOPSOIL PLACEMENT DEPTH: 4-6 INCHES MINIMUM

**SEED MIXTURE: ERNST MIX**

| | |
|---|---|
| ERNST MIX: | 186-1 |
| % PURE LIVE SEED (PLS): | (PER SUPPLIER) |
| APPLICATION RATE: | 4 LBS/1,000 SF |
| FERTILIZER TYPE: | COMMERCIAL 10-20-20 |
| FERTILIZER APPL. RATE: | 1,000 LB/ACRE (OR AS PER SOIL TEST) |
| LIMING RATE: | 6 TONS/ACRE (OR AS PER SOIL TEST) |
| MULCH TYPE: | GRASS HAY OR CEREAL STRAW |
| MULCHING RATE: | 3 TONS/ACRE |
| ANCHOR MATERIAL: | NOT APPLICABLE |
| ANCHORING METHOD: | CRIMPING |
| RATE OF ANCHOR MATERIAL APPL.: | NOT APPLICABLE |

| SEEDING SEASON DATES: | SPRING | FALL |
|---|---|---|
| | *MARCH 15 - JUNE 1* | *AUGUST 15 - OCTOBER 15* |

**(PERMANENT - SCM SEEDING)**

TOPSOIL PLACEMENT DEPTH: REFER TO SCM CROSS SECTION DETAIL

**SEED MIXTURE:** **NURSE CROP** *(PICK ONE)* + **ERNST MIX** *(PICK ONE)*

| | SPRING/SUMMER[1] | SPRING/SUMMER[2] | FALL |
|---|---|---|---|
| NURSE CROP SPECIES [1]: | BARNYARD GRASS | JAPANESE MILLET | GRAIN RYE |
| % PURE LIVE SEED (PLS): | 78% | 78% | 83% |
| APPLICATION RATE: | 10 LBS/AC | 10 LBS/AC | 30 LBS/AC |

| | |
|---|---|
| ERNST MIX: | 126 |
| % PURE LIVE SEED (PLS): | (PER SUPPLIER) |
| APPLICATION RATE: | 20-40 LBS/AC |
| FERTILIZER TYPE: | COMMERCIAL 10-20-20 |
| FERTILIZER APPL. RATE: | 1,000 LB/ACRE (OR AS PER SOIL TEST) |
| LIMING RATE: | 6 TONS/ACRE (OR AS PER SOIL TEST) |
| MULCH TYPE: | EROSION CONTROL BLANKET (REFER TO PLANS FOR TYPE) |
| MULCHING RATE: | NOT APPLICABLE |
| ANCHOR MATERIAL: | STEEL |
| ANCHORING METHOD: | STAPLE |
| RATE OF ANCHOR MATERIAL APPL.: | STAPLE PATTERN "D" (REFER TO STANDARD CONSTRUCTION DETAIL #11-1) |

| SEEDING SEASON DATES: | SPRING/SUMMER[1] | SPRING/SUMMER[2] | FALL |
|---|---|---|---|
| | *MAY 1 - AUGUST 31* | *MAY 1 - AUGUST 10* | *SEPT. 1 - OCTOBER 31* |

[1] NURSE CROP SPECIES TO BE SELECTED BASED ON TIME OF PLANTING SEEDING SEASON

NOTES:

1. ALTERNATE TEMPORARY SEEDING MIXTURES MAY BE PROVIDED IN ACCORDANCE WITH THE SEED MIXTURES FOR SITE CONDITIONS SPECIFIED IN TABLE 11.5 OF THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."
2. SEEDING RATES ARE STATED AS POUNDS PER ACRE (LB/A) OF PURE LIVE SEED (PLS). PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES THE PERCENTAGE OF GERMINATION DIVIDED BY 100. SEED SHOULD NOT BE USED LATER THAN ONE YEAR AFTER THE TEST DATE THAT APPEARS ON THE LABEL. USE OF SEED OLDER THAN ONE YEAR COULD RESULT IN LESS THAN SATISFACTORY VEGETATIVE COVERAGE AND THE NEED TO RE-SEED THE DISTURBED AREA.
3. A COMPOST BLANKET WHICH MEETS THE STANDARDS OF CHAPTER 11 MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN TABLE 11.2 OF THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."

**TEMPORARY/COVER CROP SPECIFICATIONS:** AREAS TO BE SEEDED WITH ERNMX 186-1 SHOULD NOT REQUIRE A COVER CROP AT THE TIME OF PERMANENT SEEDING. IMMEDIATE STABILIZATION SHALL OCCUR ON ALL DISTURBED AREAS WHEN THERE IS A TEMPORARY CESSATION OF ACTIVITY (FOUR (4) DAYS OR MORE). IF THE DISTURBED AREA REACHES FINAL GRADE, TEMPORARY STABILIZATION IS NOT REQUIRED, AND PERMANENT STABILIZATION CAN OCCUR.

**SEEDING INSTALLATION INSTRUCTIONS**

**HERBICIDE TREATMENT FOR PA NOXIOUS & PA INVASIVE PLANTS**

**SPRING APPLICATION:** THE FIRST APPLICATION WILL BE PERFORMED WHEN EXISTING VEGETATION HAS REACHED 6 INCHES OF NEW GROWTH. THE SECOND APPLICATION WILL BE PERFORMED NO SOONER THAN TWO WEEKS FOLLOWING THE FIRST APPLICATION (IF NECESSARY). BOTH HERBICIDE TREATMENTS WILL INCLUDE A NON-SELECTIVE HERBICIDE SUCH AS GLYPHOSATE AND POSSIBLY A SELECTIVE BROADLEAF HERBICIDE SUCH AS 2-4,D IF SUBSTANTIAL BROADLEAF WEEDS ARE PRESENT. SEEDING CAN TAKE PLACE ONE WEEK FOLLOWING LAST HERBICIDE APPLICATION.

**FALL APPLICATION:** FIRST HERBICIDE APPLICATION WILL NEED TO BE PERFORMED DURING THE GROWING SEASON TO BE EFFECTIVE. HERBICIDE APPLICATION #2 CAN BE PERFORMED NO SOONER THAN TWO WEEKS FOLLOWING THE FIRST APPLICATION BUT WHILE LATE SEASON WEEDS ARE STILL ACTIVE. SEEDING CAN TAKE PLACE WITHIN ONE WEEK FOLLOWING SECOND APPLICATION BUT NOT UNTIL THE DORMANT SEASON (END OF OCTOBER AT EARLIEST). BOTH HERBICIDE TREATMENTS WILL INCLUDE A NON-SELECTIVE HERBICIDE SUCH AS GLYPHOSATE AND POSSIBLY A SELECTIVE BROADLEAF HERBICIDE SUCH AS 2-4,D IF SUBSTANTIAL BROADLEAF WEEDS ARE PRESENT.

**SEEDING APPLICATION INSTRUCTIONS:**

- SEED WILL BE PLANTED USING A WARM SEASON NO TILL DRILL TO PROMOTE BEST SEED TO SOIL CONTACT IN OPEN AREAS TO BE SEEDED. OPEN AREAS BETWEEN PANEL ROWS MAY ALSO BE DRILL SEEDED OR BROADCAST SEED DEPENDING ON BEST APPLICATION DUE TO SITE CONDITIONS.
- AREAS UNDER THE PANELS WILL BE BROADCAST SEED AS IT IS THE ONLY WAY TO GET THE SEED UNDER THE PANELS ONCE ERECTED.
- BROADCAST SEEDED AREAS WILL BE SCARIFIED AS FAR AS SITE CONDITIONS WILL ALLOW TO ENSURE BEST SEED TO SOIL CONTACT. EXTENT OF SCARIFICATION UNDER ARRAY PANELS WILL BE SUBJECT TO PANEL SUPPORT SYSTEM AND PANEL HEIGHT. SINGLE POST SUPPORT ALLOWS FOR OFFSET EQUIPMENT TO REACH UNDER PANELS TO SCARIFY THE SOIL (IF PANEL HEIGHT ALLOWS). DOUBLE POST SUPPORTS INHIBIT ACCESS UNDER THE PANELS FOR SCARIFICATION.

# VEGETATIVE STABILIZATION STANDARDS

**TEMPORARY VEGETATIVE STABILIZATION**

1. ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY HAS OR WILL CEASE FOR MORE THAN FOUR (4) DAYS SHALL BE IMMEDIATELY TEMPORARY STABILIZED.
2. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES – PREDOMINANTLY PERENNIAL GRASSES.
3. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED. CRITICAL AREAS -- ERODIBLE SOILS, WITHIN 50 FEET OF A SURFACE WATER, ETC. – SHOULD BE BLANKETED.
4. BEFORE SEEDING, APPLY LIME AND FERTILIZER IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS, AND WORK IN WHERE POSSIBLE.
5. FOR BEST RESULTS, TEMPORARY SEED MIXES SHOULD BE CHOSEN BASED ON THE PROPER MIX FOR THE TIME OF THE YEAR.
6. ALL SEED SHALL BE LABELED AND DATED IN ACCORDANCE WITH U.S.D.A. RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT, AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
7. IMMEDIATELY AFTER SEEDING, APPLY MULCH IN ACCORDANCE WITH SECTION 3.
8. ALL AREAS STABILIZED WITH TEMPORARY MULCHING ONLY SHALL BE LIMED, FERTILIZED AND PERMANENTLY SEEDED AND MULCHED IMMEDIATELY AT THE START OF THE NEW GROWING SEASON.

**PERMANENT VEGETATIVE STABILIZATION**

1. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE.
2. BEFORE THE SEEDING BEGINS, TOPSOIL SHOULD BE APPLIED IN ACCORDANCE WITH THE TOPSOIL APPLICATION STANDARDS AND ANY REQUIRED SOIL AMENDMENTS WORKED INTO THE SOIL TO A DEPTH OF 4 TO 6 INCHES. IF COMPOST IS TO BE ADDED TO THE TOPSOIL, IT SHOULD BE WORKED INTO THE SOIL WITH THE OTHER SOIL AMENDMENTS UNLESS IT IS BEING APPLIED AS AN EROSION CONTROL BMP.
3. AFTER SPREADING AND RAKING THE TOPSOIL, SPREAD AND WORK AGRICULTURAL GRADE LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES AT THE RATE SPECIFIED IN THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS OR AT A RATE ESTABLISHED BY REPRESENTATIVE SOIL TESTS (MINIMUM 1 TEST PER 20 ACRES).
4. IMMEDIATELY BEFORE SEEDING, FERTILIZER SHALL BE SPREAD AND WORKED INTO THE TOPSOIL TO A DEPTH OF 1" AT THE RATE SPECIFIED IN THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS OR AT A RATE ESTABLISHED BY REPRESENTATIVE SOIL TESTS (MINIMUM 1 TEST PER 20 ACRES). SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDROSEEDER. COVER SEEDS WITH ¼ INCH OF TOPSOIL WITH SUITABLE EQUIPMENT.
5. FOR BEST RESULTS, PERMANENT SEED MIXES SHOULD BE CHOSEN BASED ON THE PROPER MIX FOR THE TYPE OF SLOPE.
6. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH U.S.D.A. RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE. SEEDING SHALL BE DONE DURING PERIODS FROM MARCH 15 TO OCTOBER 15, UNLESS OTHERWISE DIRECTED, AND GRASS SEED SHALL NOT BE PLANTED AFTER A HEAVY RAIN OR WATERING.
7. SOD MAY BE INSTALLED IN LIEU OF TOPSOIL AND SEEDING AT THE OWNER'S DISCRETION. GRADED AREAS RECEIVING SOD SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES AND SHOULD RECEIVE A MINIMUM OF 2 INCHES OF TOPSOIL PRIOR TO SOD PLACEMENT. SOD SHALL BE INSTALLED PER THE SPECIFICATIONS ON PAGES 148 AND 277-279 IN THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."

**MULCHING**

1. AFTER TEMPORARY OR PERMANENT SEEDING, MULCH SHALL BE IMMEDIATELY PLACED, ANCHORED AND MAINTAINED ON THE SEEDED AREAS UNTIL A MINIMUM **UNIFORM 90% VEGETATIVE COVER** HAS BEEN ACHIEVED.
2. MULCH MATERIAL SHALL BE FREE FROM FOREIGN MATERIAL, COARSE STEMS, MOLD, SUBSTANCES TOXIC TO PLANT GROWTH, AND MATURE SEED BEARING STALKS OR ROOTS OF PROHIBITED AND NOXIOUS WEEDS, AS DEFINED BY LAW. GRASS HAY AND CEREAL STRAW ARE PREFERRED MULCHES AND SHOULD BE APPLIED TO PRODUCE A LOOSE LAYER .75 TO 1 INCH DEEP.
3. STRAW OR HAY SHOULD NOT BE CHOPPED OR FINELY BROKEN DURING APPLICATION. LONG STRAWS AND STEMS ARE MORE READILY ANCHORED IN PLACE AND AFFORD SEEDLING PLANTS MORE PROTECTION THAN DOES CHOPPED STRAW OR HAY.
4. MULCH SHALL BE APPLIED AT THE RATE SPECIFIED IN THE TEMPORARY AND PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS. MULCH SHALL BE KEPT MOIST BY WATERING TO PREVENT BLOWING AWAY, AND SHALL BE CRIMPED INTO THE SOIL ON SLOPES FLATTER THAN 3H:1V.
5. IF MULCH IS USED AS AN ALTERNATIVE TO EROSION CONTROL BLANKET ON SLOPES 3H:1V OR STEEPER, IT SHALL BE HELD IN PLACE BY ONE OF THE FOLLOWING METHODS:
   - SYNTHETIC BINDERS SUCH AS CURASOL, DCA-70, PETROSET, TERRA-TACK, OR APPROVED EQUAL APPLIED AS RECOMMENDED BY THE MANUFACTURER.
   - NETTING MADE OF LIGHTWEIGHT BIODEGRADABLE PAPER, PLASTIC OR COTTON PLACED OVER MULCH AND ANCHORED PER MANUFACTURER'S SPECIFICATIONS.

**HYDROSEEDING**

1. WHEREVER SEED AND MULCH IS APPLIED BY HYDROSEEDING METHODS, THE SEED AND MULCH SHOULD BE APPLIED IN SEPARATE APPLICATIONS WITH THE SEED BEING APPLIED FIRST AND THE MULCH SPRAYED ON TOP OF THE SEED.
2. LIME, FERTILIZE AND SEED IN ACCORDANCE WITH THE TEMPORARY AND PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS. IF FERTILIZER IS COMBINED WITH INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN HALF AN HOUR TO AN HOUR; IF INOCULANT REMAINS IN THE TANK FOR MORE THAN 1 HOUR, ADD NEW SUPPLY OF INOCULANT. USE FIVE (5) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE WHEN SEEDING WITH A HYDROSEEDER.
3. IMMEDIATELY AFTER HYDROSEEDING, APPLY HAY OR STRAW MULCH IN ACCORDANCE WITH SECTION 3.
4. HYDROSEEDING SHALL BE DONE DURING PERIODS FROM MARCH 15 THROUGH OCTOBER 15, UNLESS OTHERWISE DIRECTED, AND SHALL NOT BE DONE AFTER A HEAVY RAIN OR WATERING.

**TOPSOIL APPLICATION NOTES**

1. GRADED AREAS SHOULD BE SCARIFIES OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE
2. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREAS TO A DEPTH OF 4 TO 6 INCHES MINIMUM (2 INCHES ON FILL SLOPES). SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OF TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
3. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG THE CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.
4. FIELD EXPLORATION OF THE SITE SHALL BE MADE TO DETERMINE IF THERE IS SUFFICIENT SURFACE SOIL OF GOOD QUALITY TO JUSTIFY STRIPPING. TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM). IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND NOXIOUS WEEDS, AND SHALL GIVE EVIDENCE OF BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE THAT IS POTENTIALLY TOXIC TO PLANT GROWTH.
5. ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR THE FOLLOWING CRITERIA:
   - **ORGANIC MATTER** CONTENT SHALL BE NOT LESS THAN 1.5% BY WEIGHT
   - **PH RANGE** SHALL BE FROM 6.0 - 7.5. IF PH IS LESS THAN 6.0, LIME SHALL BE ADDED IN ACCORDANCE WITH SOIL TEST RESULTS OR IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
   - **SOLUBLE SALTS** SHALL NOT EXCEED 500 PPM.
6. IF ADDITIONAL OFF-SITE TOPSOIL IS NEEDED, IT MUST MEET THE STANDARDS STATED ABOVE.
7. **GC TO TEST SOIL PRIOR TO TOPSOIL REDISTRIBUTION.**

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE = STOP CALL
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1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
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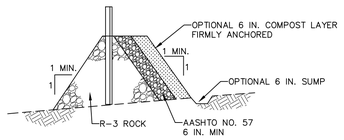
KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

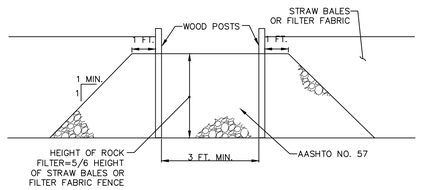
# EROSION AND SEDIMENT CONTROL DETAILS 1

SHEET NUMBER
C-251

Plotted By: Zoobi Wraps Sheet Set: G Morris Solar Layout: C-251 January 29, 2026 01:49:57pm K:\PHL_PRJ\112882004 - G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-250 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
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OUTLET CROSS-SECTION




UP-SLOPE FACE

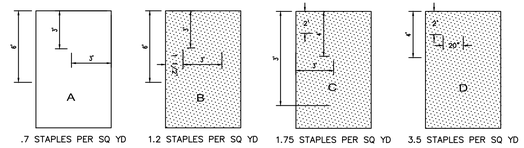
NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

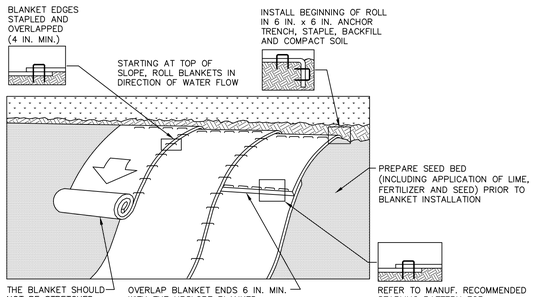
## STANDARD CONSTRUCTION DETAIL #4-6
## ROCK FILTER OUTLET

NOT TO SCALE




NOTE:
STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS WILL VARY DEPENDING UPON APPLICATION TYPE, SLOPE LENGTH, SLOPE GRADE, SOIL TYPE AND ANNUAL RAINFALL. THE FOLLOWING ARE GENERAL STAPLE RECOMMENDATIONS BASED ON SLOPE LENGTH, SLOPE GRADE, AND ESTIMATED RUNOFF. SPECIFIC STAPLE PLACEMENT PATTERNS ARE ILLUSTRATED IN DIAGRAMS A,B,C,D, AND E. INCREASED STAPLE RATES MAY BE NECESSARY DEPENDING UPON SITE CONDITIONS. FOR DETAILED SPECIFIC RECOMMENDATIONS, CONTACT YOUR NEAREST AUTHORIZED NORTH AMERICAN GREEN DISTRIBUTOR OF CALL NORTH AMERICAN GREEN TECHNICAL SERVICES.

EROSION CONTROL BLANKET STAPLE PATTERN GUIDE
(NOT TO SCALE)




NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

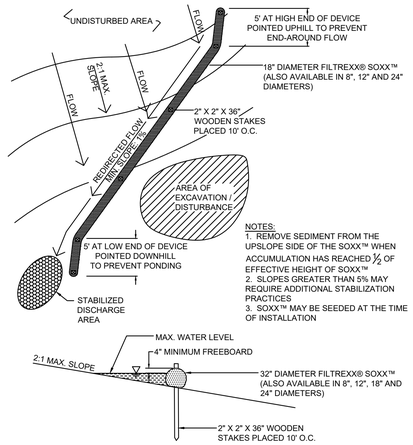
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 90% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

## STANDARD CONSTRUCTION DETAIL #11-1
## EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE




NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE SOXX™ WHEN ACCUMULATION HAS REACHED ½ OF EFFECTIVE HEIGHT OF SOXX™
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES
3. SOXX™ MAY BE SEEDED AT THE TIME OF INSTALLATION

ALL DIVERSION SOCKS FOR THE PROJECT SHALL BE 32" DIAMETER

TABLE 6.2
Filtrexx Runoff Diversion Performance and Design Specifications Summary

| DESIGN DIAMETER / DESIGN & PERFORMANCE | 8 IN | 12 IN | 18 IN | 24 IN | 32 IN | TESTING LAB/ REFERENCE | PUBLICATION(S) |
|---|---|---|---|---|---|---|---|
| EFFECTIVE HEIGHT | 6.5 IN | 9.5 IN | 14.5 IN | 19.0 IN | 26.0 IN | The Ohio State University, Ohio Agricultural Research and Development Center | Transactions of the American Society of Agricultural & Biological Engineers, 2006 |
| EFFECTIVE CIRCUMFERENCE | 25 IN | 38 IN | 57 IN | 75 IN | 100 IN | - | - |
| DENSITY | 20 lbs/ft | 48 lb/ft | 110 lbs/ft | 200 lbs/ft | 300 lbs/ft | Filtrexx International Field Lab | - |
| AIR SPACE | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Soil Control Lab, Inc | - |
| STAKING REQUIREMENTS | 10 ft | 10 ft | 10 ft | 10 ft | 10 ft | - | - |
| MAINTENANCE REQUIREMENT (SEDIMENT REMOVAL AT X HEIGHT) | 3.25 IN | 4.75 IN | 7.25 IN | 9.50 IN | 13.00 IN | - | - |
| FUNCTIONAL LONGEVITY* | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | Filtrexx International Field Lab | - |
| PERCENT VEGETATIVE COVER | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Filtrexx International Field Lab | - |
| HYDRAULIC FLOW THROUGH RATE (SEDIMENT-LADEN WATER) | < 1 gpm/lf | < 1 gpm/lf | < 1 gpm/lf | < 1 gpm/lf | < 1 gpm/lf | Soil Control Lab, Inc | - |
| MAX RUNOFF FLOW HEIGHT | 3 IN | 6 IN | 11 IN | 15 IN | 22 IN | The Ohio State University, Ohio Agricultural Research and Development Center | Transactions of the American Society of Agricultural & Biological Engineers, 2006 |

* FUNCTIONAL LONGEVITY IS DEPENDENT ON MESH MATERIAL TYPE, UV EXPOSURE, FREEZE/THAW FREQUENCY, REGION OF US/CANADA, RUNOFF-SEDIMENT FREQUENCY/DURATION/LOADING, AND ADHERENCE TO SPECIFIED MAINTENANCE REQUIREMENT. FUNCTIONAL LONGEVITY RANGES ARE ESTIMATES ONLY. SITE SPECIFIC ENVIRONMENTAL CONDITIONS MAY RESULT IN SIGNIFICANTLY SHORTER OR LONGER TIME PERIODS.

## 1 DIVERSION SOCK DETAIL

Scale: N.T.S.




NOTES:

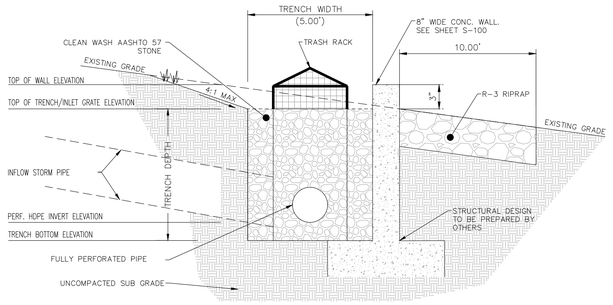
ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

## STANDARD CONSTRUCTION DETAIL #7-16
## CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE

| E&S BASIN OR TRAP NO. | PIPE SIZE (IN) | S (IN) | NO. OF COLLARS | COLLAR SPACING (FT) | RISER TO FIRST COLLAR (FT) |
|---|---|---|---|---|---|
| Sed. Basin #1 | 24.00 | 57.60 | 2.00 | 8.00 | 12.00 |
| Sed. Basin #4 | 36.00 | 68.16 | 4.00 | 7.00 | 7.00 |



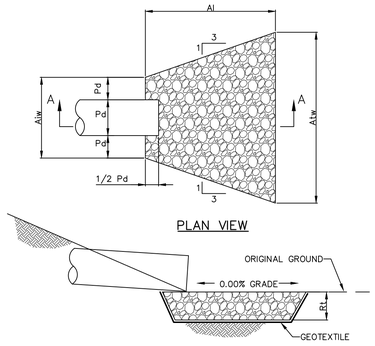

| TRENCH BOTTOM ELEV. (FT.) | PERF. HDPE DIAMETER (IN.) | PERF. HDPE ELEVATION (FT.) | TRENCH DEPTH (FT.) | TRENCH TOP ELEV. (FT.) | INLET GRATE ELEV. (FT.) | TOP OF WALL ELEV. (FT.) | TRENCH LENGTH (FT.) |
|---|---|---|---|---|---|---|---|
| 730.00 | 30.00 | 730.50 | 6.00 | 736.00 | 736.00 | 736.25 | 55.00 |
| 735.50 | 36.00 | 736.00 | 6.50 | 742.00 | 742.00 | 742.25 | 100.00 |

## 2 CROSS SECTION OF LEVEL SPREADER DETAIL

SCALE: N.T.S.

### LEVEL SPREADER CONSTRUCTION SEQUENCE

1. EXCAVATE TRENCH BOTTOM TO A UNIFORM, UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS AND AT A SLOPE OF 0.0% FROM THE STORM INLET.
2. INSTALL STRUCTURAL CONCRETE CURB/EDGE TO ACT AS LEVEL SPREADER.
3. PLACE NONWOVEN GEOTEXTILE FABRIC ALONG THE BOTTOM AND SIDES OF THE TRENCH. FOLD BACK GEOTEXTILE FABRIC AND TIE INTO ADJACENT SUBGRADE.
4. INSTALL 8" BED BOTTOM STONE. PLACE PERFORATED HDPE PIPE IN THE CENTER OF THE TRENCH.
5. PLACE REMAINING STONE IN 8 INCH LIFTS, LIGHT COMPACTING BETWEEN LIFTS. 3
6. INSTALL R-3 RIPRAP FOR A MINIMUM OF 5 FEET DOWNSLOPE FROM THE EDGE OF LEVEL SPREADER.
7. STABILIZE SURROUNDING AREA IMMEDIATELY.




SECTION A-A

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

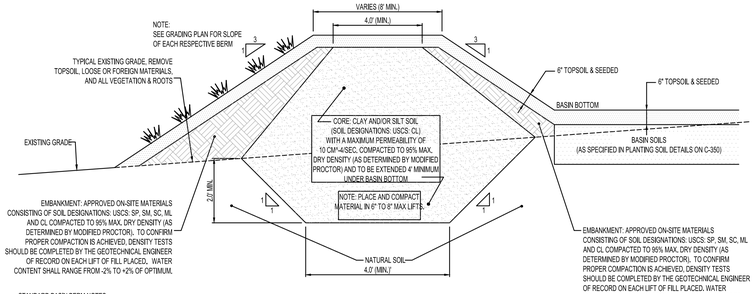
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

## STANDARD CONSTRUCTION DETAIL #9-2
## RIPRAP APRON AT PIPE OUTLET NO FLARED ENDWALL

NOT TO SCALE

| APRON NO. | OUTLET NO. | PIPE DIA Pd (IN) | RIPRAP SIZE R-_ | RIPRAP THICK. Ri (IN) | APRON LENGTH Al (FT) | APRON INITIAL WIDTH Aiw (FT) | APRON TERMINAL WIDTH Atw (FT) |
|---|---|---|---|---|---|---|---|
| 1 | A0 | 24 | R-4 | 18 | 13.00 | 6.00 | 19.00 |
| 2 | B0 | 36 | R-5 | 27 | 20.00 | 9.00 | 29.00 |




STANDARD BASIN BERM NOTES:

1.) PRIOR TO PLACEMENT OF FILL MATERIAL, THE EXISTING GROUND BENEATH THE EMBANKMENT SHALL BE CLEARED OF ALL TREE STUMPS, BRUSH, ROOTS, AND OTHER ORGANIC MATERIAL SUBJECT TO DECOMPOSITION, OVERSIZED STONES, AND ANY OTHER OBJECTIONABLE MATERIAL. FOLLOWING CLEARING, THE SURFACE ON OR AGAINST WHERE THE FILL IS TO BE PLACED SHALL BE SCARIFIED (BROKEN TO A DEPTH OF SIX (6) INCHES), MOISTURE CONDITIONED AS NECESSARY, AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY, PRIOR TO PLACEMENT OF FILL. THE CUT-OFF TRENCH SHALL BE EXCAVATED TO A DEPTH OF FOUR (4) FEET BELOW EXISTING GRADE. THE EXCAVATION SHALL BE DONE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT. THE MINIMUM BOTTOM WIDTH OF THE CUT-OFF TRENCH SHALL BE EIGHT (8) FEET BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING THE BACKFILL OPERATIONS.

2.) ALL FILL SHALL BE TAKEN FROM SELECT BORROW AREAS. IT SHALL BE FREE FROM BRUSH, ROOTS, AND OTHER ORGANIC MATERIAL SUBJECT TO DECOMPOSITION, OVERSIZED STONES, AND ANY OTHER OBJECTIONABLE MATERIAL.

4.) FILL MATERIAL IN ALL EMBANKMENTS SHALL BE PLACED IN 6 TO 8 INCH LIFTS AND SHALL BE CONTINUOUS OVER THE ENTIRE LENGHT OF THE FILL. FILL MATERIAL SHALL BE BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED FROM THE COMPACTION TESTS PERFORMED BY THE APPROPRIATE METHOD IN ASTM D1557. COMPACTION SHALL BE OBTAINED BY USING MECHANICAL SHEEP FOOT ROLLERS.

5.) THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 5% HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

6.) NO ROCK FILL AND/OR GRAVEL SHALL BE PLACED BELOW THE CLAY CORE.

## 3 BERM & CUTOFF TRENCH DETAIL (FOR BERMS IN FILL CONDITION)

Scale: N.T.S.

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE - STOP CALL
PA 1 One Call
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| | DATE | BY |
|---|---|---|
| 5 | 01/30/26 | PJQ |
| 4 | 01/12/26 | PJQ |
| 3 | 12/11/25 | PJQ |
| 2 | 10/08/25 | JK |
| 1 | 6/13/25 | JK |
| No. | REVISIONS | |
| 5 | FINAL LD INITIAL SUBMISSION | |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | |

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PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL PAUL W. HUGHES ENGINEER PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# EROSION AND SEDIMENT CONTROL DETAILS 2

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

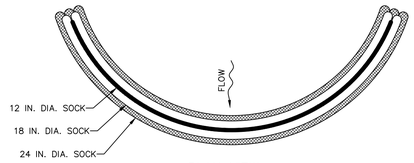
SHEET NUMBER
C-252

Plotted By: Zubb, Wotja Sheet Set: G Morris Solar Layout: C-252 January 29, 2026 01:50:00pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-250 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
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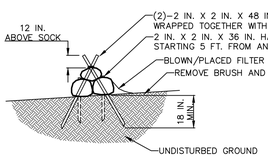
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| EFFECTIVE CIRCUMFERENCE | 25 IN | 38 IN | 57 IN | 75 IN | 100 IN | - | - |
| DENSITY | 20 lbs/ft | 48 lb/ft | 110 lbs/ft | 200 lbs/ft | 300 lbs/ft | Filtrexx International Field Lab | - |
| AIR SPACE | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Soil Control Lab, Inc | - |
| STAKING REQUIREMENTS | 10 ft | 10 ft | 10 ft | 10 ft | 10 ft | - | - |
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| FUNCTIONAL LONGEVITY* | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | 6 MO - 5 YR | Filtrexx International Field Lab | - |
| PERCENT VEGETATIVE COVER | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Testing in Progress | Filtrexx International Field Lab | - |
| HYDRAULIC FLOW THROUGH RATE (SEDIMENT-LADEN WATER) | < 1 gpm/sf | < 1 gpm/sf | < 1 gpm/sf | < 1 gpm/sf | < 1 gpm/sf | Soil Control Lab, Inc | - |
| MAX RUNOFF FLOW HEIGHT | 3 IN | 6 IN | 11 IN | 15 IN | 22 IN | The Ohio State University, Ohio Agricultural Research and Development Center | Transactions of the American Society of Agricultural & Biological Engineers, 2006 |

* FUNCTIONAL LONGEVITY IS DEPENDENT ON MESH MATERIAL TYPE, UV EXPOSURE, FREEZE/THAW FREQUENCY, REGION OF US/CANADA, RUNOFF-SEDIMENT FREQUENCY/DURATION/LOADING, AND ADHERENCE TO SPECIFIED MAINTENANCE REQUIREMENT. FUNCTIONAL LONGEVITY RANGES ARE ESTIMATES ONLY. SITE SPECIFIC ENVIRONMENTAL CONDITIONS MAY RESULT IN SIGNIFICANTLY SHORTER OR LONGER TIME PERIODS.




PLAN VIEW




STAKING DETAIL

DESIGN NOTES:

1. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

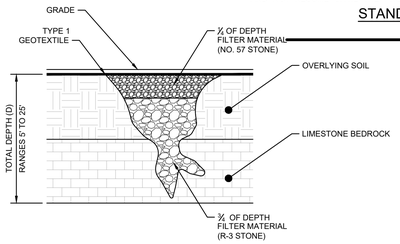
PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

## STANDARD CONSTRUCTION DETAIL #3-11
## COMPOST SOCK SEDIMENT TRAP

NOT TO SCALE

## PROCEDURE FOR INSTALLING AN INVERTED FILTER TO TREAT SINKHOLES

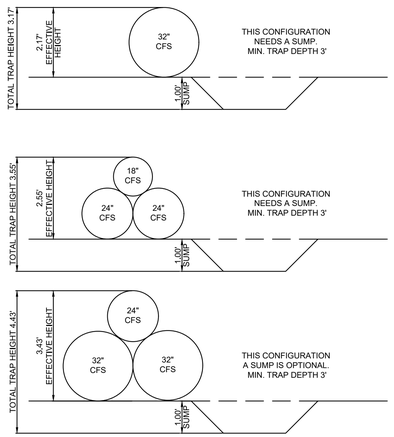
1. REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE SINKHOLE.
2. EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. ENLARGE THE SINKHOLE, AS NECESSARY TO ALLOW FOR INSTALLATION OF THE FILTER MATERIALS. THE THROAT OF THE SINKHOLE OR SOLUTION CHANNEL SHOULD THEN BE CLEANED OUT SUCH THAT THE SOLUTION CAVITY AND SURROUNDING ROCK IS EXPOSED.
3. FOR REVERSE GRADE FILTER, PLACE LARGER STONE OR BOULDERS WITHIN THE THROAT OF THE SINKHOLE. THE DIAMETER SHOULD BE AT LEAST ONE-HALF THE DIAMETER OF THE SINKHOLE THROAT.
4. IF IMMEDIATE THROAT CANNOT BE FULLY EXPOSED OR IF A SIGNIFICANTLY LARGE THROAT IS ENCOUNTERED. LARGE BOULDERS COMBINED WITH LEAN-MIX CONCRETE MAY BE REQUIRED IN THE EXCAVATION BOTTOM.
5. AFTER PLACEMENT OF LARGER STONE/BOULDERS AND POSSIBLE LEAN-MIX CONCRETE, THE FILTER SHOULD CONSIST OF SEQUENTIALLY SMALLED GRADED STONE.
6. THE FILTER SHOULD ALSO BE SURROUNDED WITH A NON-WOVEN GEOTEXTILE FABRIC.
7. UPON COMPLETION OF THE FILTER, THE REMAINDER OF THE EXCAVATED AREA SHOULD BE BACKFILLED WITH LOW PERMEABILITY CLAYEY SOIL COMPACTED TO NOT LESS THAN 95% OF MAX DRY DENSITY BASED ON THE STANDARD PROCTOR MOISTURE-DENSITY TEST (ASTM D698)
8. FILL MATERIALS SHOULD BE PLACED IN LOOSE LIFTS NOT MORE THAN 6" FOR LIGHT COMPACTION EQUIPMENT AND 10" FOR HEAVY COMPACTION EQUIPMENT.
9. MOISTURE CONTENTS OF THE FILL MATERIALS SHOULD BE ADJUSTED, AS NECESSARY, TO ACHIEVE THE REQUIRED COMPACTION AND COMPACTION TESTING SHOULD BE PERFORMED ON EACH LIFT OF MATERIAL PLACED.




1 SINKHOLE - INVERTED FILTER TREATMENT

Scale: N.T.S.

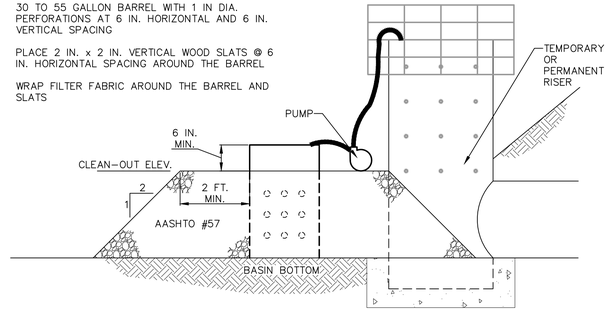
## COMPOST FILTER SOCK TRAP CONFIGURATION GUIDE




30 TO 55 GALLON BARREL WITH 1 IN DIA. PERFORATIONS AT 6 IN. HORIZONTAL AND 6 IN. VERTICAL SPACING

PLACE 2 IN. x 2 IN. VERTICAL WOOD SLATS @ 6 IN. HORIZONTAL SPACING AROUND THE BARREL

WRAP FILTER FABRIC AROUND THE BARREL AND SLATS




NOTES:

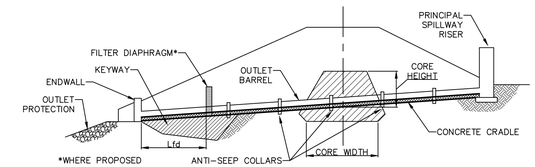
DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

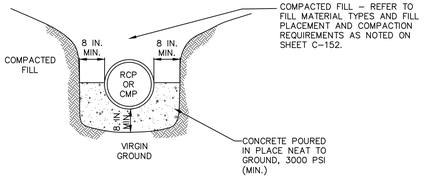
DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

## STANDARD CONSTRUCTION DETAIL #7-18
## SEDIMENT BASIN OR SEDIMENT TRAP
## SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE




EMBANKMENT ALONG PRINCIPAL SPILLWAY



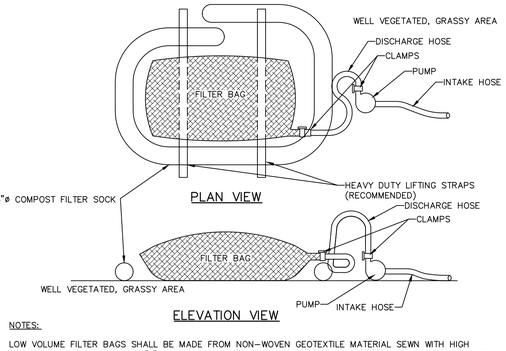

CROSS-SECTION AT OUTLET BARREL

NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
COMPACTED FILL SHALL BE MAX 3 INCHES, AND SHALL BE COMPACTED AT 92% OF MAX. PER ASTM D698. ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN. FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION AND CONTROL MANUAL (2012).

## STANDARD CONSTRUCTION DETAIL #7-17
## CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

NOT TO SCALE




NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

| PROPERTY | TEST METHOD | MINIMUM STANDARD |
|---|---|---|
| AVG. WIDE WIDTH STRENGTH | ASTM D-4884 | 60 LB/IN |
| GRAB TENSILE | ASTM D-4632 | 205 LB |
| PUNCTURE | ASTM D-4833 | 110 LB |
| MULLEN BURST | ASTM D-3786 | 350 PSI |
| UV RESISTANCE | ASTM D-4355 | 70% |
| AOS % RETAINED | ASTM D-4751 | 80 SIEVE |

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

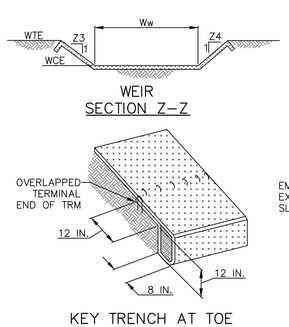
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

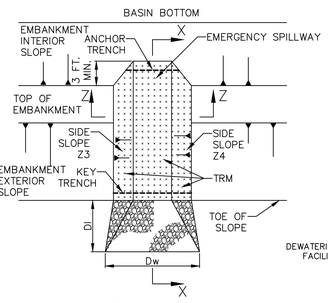
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

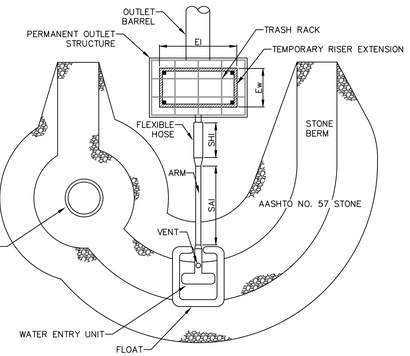
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

## STANDARD CONSTRUCTION DETAIL #3-16
## PUMPED WATER FILTER BAG

NOT TO SCALE



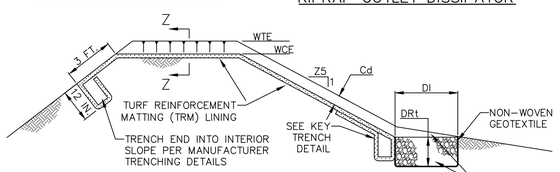

NOTES:

NO GUIDE RAILS SHALL BE REQUIRED FOR THIS INSTALLATION.

THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD CONSTRUCTION DETAILS #7-2 AND #7-4.

## STANDARD CONSTRUCTION DETAIL #7-3
## SKIMMER WITH STONE LANDING BERM

NOT TO SCALE




| BASIN NO. | WEIR | | | | | LINING | | CHANNEL | | DISSIPATOR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Z3 (FT) | Z4 (FT) | TOP ELEV WTF (FT) | CREST ELEV WCE (FT) | WIDTH Ww (FT) | TRM TYPE | STAPLE PATTERN | Z5 (FT) | DEPTH Cd (FT) | LEGNTH Di (FT) | WIDTH Dw (FT) | RIPRAP SIZE (R-_) | RIPRAP THICK. DRt (IN) |
| Sed. Basin #1 | 3.00 | 3.00 | 750.50 | 749.00 | 50.00 | P300 | D | 3.00 | 0.00 | N/A | - | - | - |
| Sed. Basin #2 | 3.00 | 3.00 | 732.00 | 730.25 | 50.00 | P300 | D | 3.00 | 0.00 | N/A | - | - | - |
| Sed. Basin #3 | 3.00 | 3.00 | 745.00 | 743.50 | 50.00 | P300 | D | 3.00 | 0.00 | N/A | - | - | - |
| Sed. Basin #4 | 3.00 | 3.00 | 753.00 | 751.40 | 80.00 | P300 | D | 3.00 | 0.00 | N/A | - | - | - |

NOTES:

HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TURF REINFORCEMENT MAT LINING.

DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.

THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

## STANDARD CONSTRUCTION DETAIL #7-13
## SEDIMENT BASIN EMERGENCY SPILLWAY WITH TRM LINING

NOT TO SCALE

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE - STOP CALL
PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| NO. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |


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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM


COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES ENGINEER PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

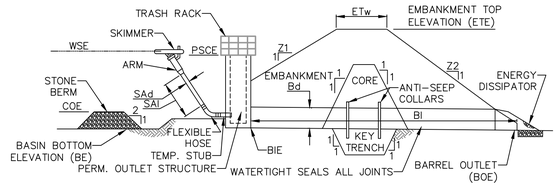
# EROSION AND SEDIMENT CONTROL DETAILS 3

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-253


Plotted By: Pujol, Wofgo Sheet Set: G Morris Solar Layout: C-253 January 29, 2026 01:50:01pm K:\PHI_PR\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-253 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.




| BASIN NO. | Z1 (FT) | Z2 (FT) | PERM STRUCT CREST ELEV PSCE (FT) | EMBANKMENT | TOP WIDTH Etw (FT) | KEY TRENCH DEPTH (FT) | KEY TRENCH WIDTH (FT) | CLEAN OUT ELEV COE (FT) | BOTTOM ELEV BE (FT) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sed. Basin #1 | 3.00 | 3.00 | 747.75 | 750.50 | 8.00 | 2.00 | 4.00 | 744.00 | 743.00 | |
| Sed. Basin #2 | 3.00 | 3.00 | 728.40 | 732.00 | 8.00 | 2.00 | 4.00 | 723.05 | 722.00 | |
| Sed. Basin #3 | 3.00 | 3.00 | 740.35 | 743.00 | 8.00 | 2.00 | 4.00 | 737.00 | 736.00 | |
| Sed. Basin #4 | 3.00 | 3.00 | 750.10 | 753.00 | 8.00 | 2.00 | 4.00 | 744.00 | 743.00 | |

| SKIMMER | | | OUTLET BARREL | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LENGTH SAl (FT) | MAT'L | DIA Bd (IN) | INLET ELEV BIE (FT) | MAT'L | LENGTH BI (FT) | OUTLET ELEV BOE (FT) | |
| 4 | 8.0 | PVC | 24.00 | 743.00 | HDPE | 60.00 | 742.00 | |
| 4 | 8.0 | PVC | 36.00 | 722.00 | HDPE | 64.46 | 721.25 | |
| 4 | 8.0 | PVC | 30.00 | 736.00 | HDPE | 53.00 | 735.00 | |
| 4 | 8.6 | PVC | 36.00 | 743.00 | HDPE | 92.31 | 736.00 | |

NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

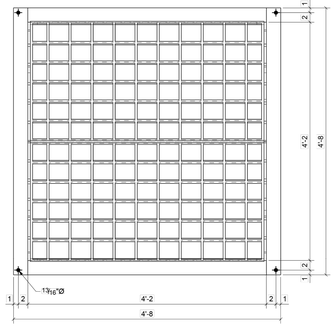
BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

REFER TO DETAIL #1 – BERM & CUTOFF TRENCH DETAIL (FOR BERMS IN FILL CONDITION) FOR EMBANKMENT AND CORE MATERIALS AND COMPACTION REQUIREMENTS.

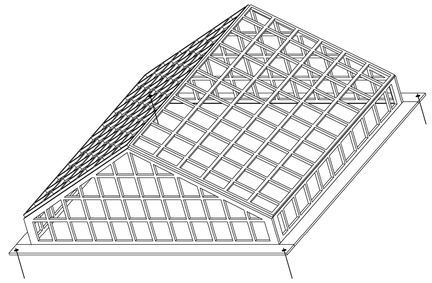
## STANDARD CONSTRUCTION DETAIL #7-4
## SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER

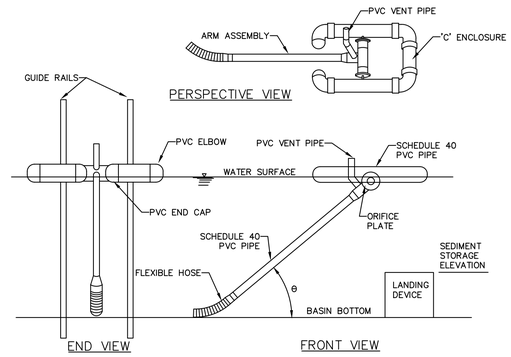
NOT TO SCALE




## 3 TRASH RACK FOR INLET (TYP.)

Scale: N.T.S.






NOTES:

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

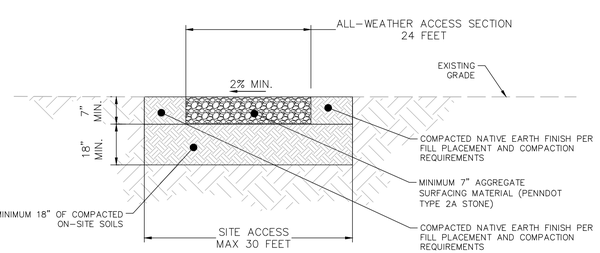
SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN–OUT STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI–CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7–3).

## STANDARD CONSTRUCTION DETAIL #7-1
## SKIMMER

NOT TO SCALE

| PCSM SCM NO. | E&S BMP NO. | WATER SURFACE ELEVATION (FT) | ARM LENGTH (FT) | ARM DIA. (IN) | ORIFICE DIA. (IN) | TOP OF LANDING DEVICE ELEVATION (FT) | FLEXIBLE HOSE LENGTH (IN) | FLEXIBLE HOSE ATTACHMENT ELEVATION (FT) |
|---|---|---|---|---|---|---|---|---|
| 3 | Sed. Basin #1 | 747.75 | 8.00 | 3.00 | 3.00 | 744.00 | 12 | 744.00 |
| 5 | Sed. Basin #2 | 728.40 | 8.00 | 5.00 | 5.00 | 723.05 | 12 | 723.05 |
| 7 | Sed. Basin #3 | 742.25 | 8.00 | 4.00 | 4.00 | 737.00 | 12 | 737.00 |
| 9 | Sed. Basin #4 | 750.10 | 8.63 | 5.00 | 5.00 | 744.00 | 12 | 744.00 |

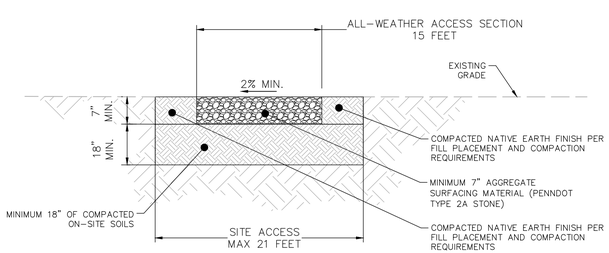



NOTES:

1. IMPROVEMENTS SHALL FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFER TO THE PROJECT GEOTECHNICAL REPORT AND RECOMMENDATIONS PER THE GEOTECHNICAL ENGINEER.
2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

## 1 ROAD SECTION - ENTRANCE ACCESS ROAD

N.T.S.

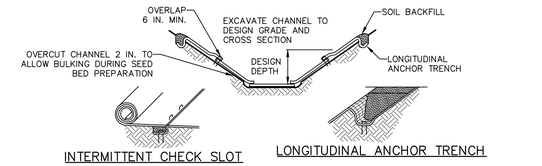


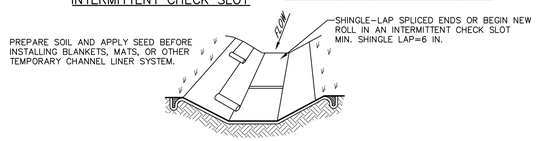

NOTES:

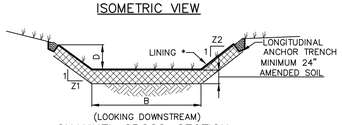
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2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

## 2 ROAD SECTION - INTERNAL ACCESS ROAD

N.T.S.




* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

| CHANNEL NO. | STATIONS | BOTTOM WIDTH B (FT) | DEPTH D (FT) | MIN. REQUIRED FREEBOARD (FT) | TOP WIDTH W (FT) | Z1 (FT) | Z2 (FT) | LINING * |
|---|---|---|---|---|---|---|---|---|
| 1–A | 00+00.00–02+12.83 | 2.00 | 1.67 | 0.50 | 12.00 | 3 | 3 | NAG S75/PERMANENT SEEDING |
| 1–B | 02+12.83–04+56.4 | 2.00 | 1.67 | 0.50 | 12.00 | 3 | 3 | NAG S200 & GRASS (6") |

NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

## VEGETATED CHANNEL

NOT TO SCALE

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS' NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1 One Call
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL PAUL W. HUGHES ENGINEER PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

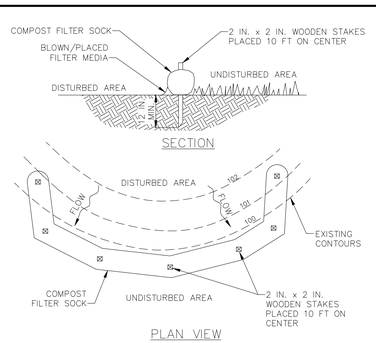
# EROSION AND SEDIMENT CONTROL DETAILS 4

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-254

Plotted By: Zubin Wafoa Sheet Set: G Morris Solar Layout: C-254 January 29, 2026 01:50:02pm K:\PHL_PRJ\112882004 - G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-250 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.




NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

## STANDARD CONSTRUCTION DETAIL #4-1
## COMPOST FILTER SOCK

NOT TO SCALE

TABLE 4.1
Compost Sock Fabric Minimum Specifications

| MATERIAL TYPE | 3 mil HDPE | 5 mil HDPE | 5 mil HDPE | Multi-Filament Polypropylene (MFPP | Heavy Duty Multi-Filament Polypropylene (HDMFPP) |
|---|---|---|---|---|---|
| Material Characteristics | Photo-degradable | Photo-degradable | Bio-degradable | Photo-degradable | Photo-degradable |
| Sock Diameters | 12"<br>18" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" |
| Mesh Opening | 3/8" | 3/8" | 3/8" | 3/8" | 1/8" |
| Tensile Strength | - | 26 psi | 26 psi | 44 psi | 202 psi |
| Ultraviolet Stability % Original Strength (ASTM G-155 | 23% at 1000 hr. | 23% at 1000 hr. | - | 100% at 1000 hr. | 100% at 1000 hr. |
| Minimum Functional Longevity | 6 months | 9 months | 6 months | 1 year | 2 years |
| Two-ply systems | | | | | |
| Inner Containment Netting | HDPE biaxial net | | | | |
| | Continuously wound | | | | |
| | Fusion-welded junctures | | | | |
| | 3/4" X 3/4" Max. aperture size | | | | |
| Outer Filtration Mesh | Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) | | | | |
| | 3/16" Max. aperture size | | | | |
| Sock fabrics composed of burlap may be used on projects lasting 6 months or less. | | | | | |

COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOOD/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1% BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

TABLE 4.2
Compost Standards

| | |
|---|---|
| ORGANIC MATTER CONTENT | 25%-100% (DRY WEIGHT BASE) |
| ORGANIC PORTION | FIBROUS AND ELONGATED |
| pH | 5.5-8.5 |
| MOISTURE CONTENT | 30%-60% |
| PARTICLE SIZE | 30%-50% PASS THROUGH 3/8" SIEVE |
| SOLUBLE SALT CONCENTRATION | 5.0 dS/m (mmhos/cm) MAXIMUM |

| Sock No. | Dia. In. | Location | SLOPE PERCENT | SLOPE LENGTH ABOVE BARRIER (FT.) |
|---|---|---|---|---|
| 1 | 12" | Along fence east of Valley Road | 4% | 139 |
| 2 | 12" | Along fence east of Valley Road | 4% | 255 |
| 3 | 18" | Along fence east of Valley Road | 4% | 378 |
| 4 | 24" | Along fence east of Valley Road | 5% | 373 |
| 5 | 24" | Along fence east of Valley Road | 6% | 404 |
| 6 | 32" | Along fence east of Valley Road | 6% | 446 |
| 7 | 32" | Along fence east of Valley Road | 7% | 473 |
| 8 | 32" | Along fence east of Valley Road | 7% | 482 |
| 9 | 12" | North of array adjacent to North Street | 9% | 108 |
| 10 | CFS TRAP | North of array adjacent to North Street | 8% | 606 |
| 11 | CFS TRAP | North of array adjacent to North Street | 8% | 541 |
| 12 | 32" | North of array adjacent to North Street | 8% | 464 |
| 13 | 32" | North of array adjacent to North Street | 8% | 464 |
| 14 | 32" | North of array adjacent to North Street | 8% | 422 |
| 15 | 24" | North of array adjacent to North Street | 6% | 428 |
| 16 | 24" | North of array adjacent to North Street | 6% | 420 |
| 17 | 24" | North of array adjacent to North Street | 6% | 378 |
| 18 | 24" | North of array adjacent to North Street | 5% | 357 |
| 19 | 18" | North of array adjacent to North Street | 7% | 235 |
| 20 | 18" | North of array adjacent to North Street | 5% | 309 |
| 21 | 12" | North of array adjacent to North Street | 4% | 278 |
| 22 | 12" | North of array adjacent to North Street | 3% | 256 |
| 23 | 12" | North of array adjacent to North Street | 3% | 207 |
| 24 | 12" | North of UNT 17178 to Deep Creek | 3% | 351 |
| 25 | 12" | North of UNT 17178 to Deep Creek | 3% | 360 |
| 26 | 18" | North of UNT 17178 to Deep Creek | 3% | 453 |
| 27 | 24" | North of UNT 17178 to Deep Creek | 4% | 560 |
| 28 | 18" | North of UNT 17178 to Deep Creek | 3% | 546 |
| 29 | 18" | North of UNT 17178 to Deep Creek | 3% | 544 |
| 30 | 24" | North of UNT 17178 to Deep Creek | 3% | 561 |
| 31 | 24" | North of UNT 17178 to Deep Creek | 4% | 522 |
| 32 | 24" | North of UNT 17178 to Deep Creek | 4% | 528 |
| 33 | 24" | North of UNT 17178 to Deep Creek | 6% | 408 |
| 34 | 24" | North of UNT 17178 to Deep Creek | 4% | 569 |
| 35 | 32" | North of UNT 17178 to Deep Creek | 4% | 719 |
| 36 | 12" | East of UNT 17178 to Deep Creek | 2% | 116 |
| 37 | 12" | East of UNT 17178 to Deep Creek | 2% | 280 |
| 38 | 18" | East of UNT 17178 to Deep Creek | 6% | 221 |
| 39 | 24" | East of UNT 17178 to Deep Creek | 4% | 485 |
| 40 | 12" | East of UNT 17178 to Deep Creek | 9% | 153 |
| 41 | CFS TRAP | East of UNT 17178 to Deep Creek | 5% | 773 |
| 42 | 32" | East of UNT 17178 to Deep Creek | 9% | 396 |
| 43 | CFS TRAP | East of UNT 17178 to Deep Creek | 8% | 542 |
| 44 | 32" | East of UNT 17178 to Deep Creek | 8% | 444 |
| 45 | 32" | Along fence on northwestern edge of site | 8% | 437 |
| 46 | CFS TRAP | Along fence on northwestern edge of site | 8% | 516 |
| 47 | CFS TRAP | Along fence on northwestern edge of site | 8% | 533 |
| 48 | CFS TRAP | Along fence on northwestern edge of site | 8% | 485 |
| 49 | 12" | Northwest of Sediment Basin #1 | 16% | 62 |
| 50 | 12" | Northwest of Sediment Basin #1 | 17% | 56 |
| 51 | 32" | South of UNT 17171 to Deep Creek | 8% | 371 |
| 52 | 24" | South of UNT 17171 to Deep Creek | 9% | 313 |
| 53 | 24" | South of UNT 17171 to Deep Creek | 9% | 274 |
| 54 | 24" | South of UNT 17171 to Deep Creek | 8% | 280 |
| 55 | 18" | South of UNT 17171 to Deep Creek | 7% | 284 |
| 56 | 18" | South of UNT 17171 to Deep Creek | 6% | 285 |
| 57 | 18" | South of UNT 17171 to Deep Creek | 5% | 329 |
| 58 | 12" | South of UNT 17171 to Deep Creek | 4% | 300 |
| 59 | 12" | South of UNT 17171 to Deep Creek | 4% | 180 |
| 60 | 12" | South of UNT 17171 to Deep Creek | 2% | 171 |
| 61 | 12" | South of UNT 17171 to Deep Creek | 3% | 304 |
| 62 | 24" | Along the property line southwest of RCE 02 | 6% | 426 |
| 63 | 32" | Along the property line southwest of RCE 02 | 7% | 425 |
| 64 | 24" | Along the property line southwest of RCE 02 | 3% | 661 |
| 65 | 18" | Along the property line southwest of RCE 02 | 5% | 313 |
| 66 | 12" | Along the property line southwest of RCE 02 | 5% | 159 |
| 67 | 12" | Along the east side of North Center Street | 3% | 61 |
| 68 | 12" | Along the east side of North Center Street | 7% | 89 |
| 69 | 18" | Along the east side of North Center Street | 6% | 306 |
| 70 | 24" | Along the east side of North Center Street | 6% | 390 |
| 71 | 32" | Along the east side of North Center Street | 7% | 453 |
| 72 | 32" | Along the east side of North Center Street | 7% | 506 |
| 73 | 18" | Along the north Lykens/Gratz boundary | 5% | 302 |
| 74 | 12" | Along the north Lykens/Gratz boundary | 5% | 142 |
| 75 | 12" | Along the north Lykens/Gratz boundary | 7% | 162 |
| 76 | 12" | East of Sediment Basin #2 | 6% | 145 |
| 77 | 12" | East of Sediment Basin #2 | 7% | 183 |
| 78 | 24" | East of Sediment Basin #2 | 12% | 254 |
| 79 | 24" | East of Sediment Basin #2 | 13% | 239 |
| 80 | 32" | East of Sediment Basin #2 | 18% | 276 |
| 81 | 32" | East of Sediment Basin #2 | 18% | 222 |
| 82 | 18" | East of Sediment Basin #2 | 11% | 203 |
| 83 | 18" | South of the stream adjacent to Sediment Basin #2 | 10% | 206 |
| 84 | 18" | South of the stream adjacent to Sediment Basin #2 | 10% | 245 |
| 85 | 24" | South of the stream adjacent to Sediment Basin #2 | 11% | 272 |
| 86 | 32" | South of the stream adjacent to Sediment Basin #2 | 11% | 307 |
| 87 | 32" | South of the stream adjacent to Sediment Basin #2 | 11% | 340 |
| 88 | 32" | South of the stream adjacent to Sediment Basin #2 | 11% | 334 |

| Sock No. | Dia. In. | Location | SLOPE PERCENT | SLOPE LENGTH ABOVE BARRIER (FT.) |
|---|---|---|---|---|
| 89 | 32" | South of the stream adjacent to Sediment Basin #2 | 10% | 341 |
| 90 | CFS TRAP | South of the stream adjacent to Sediment Basin #2 | 10% | 449 |
| 91 | 12" | South of the stream adjacent to Sediment Basin #2 | 12% | 78 |
| 92 | 12" | South of the stream adjacent to Sediment Basin #2 | 7% | 41 |
| 93 | CFS TRAP | Along the fence near UNT 17125 to Pine Creek | 6% | 1022 |
| 94 | CFS TRAP | Along the fence near UNT 17125 to Pine Creek | 8% | 489 |
| 95 | 18" | Along the south boundary of the Wengert property | 11% | 144 |
| 96 | 18" | Along the south boundary of the Wengert property | 11% | 243 |
| 97 | CFS TRAP | Along the south boundary of the Wengert property | 9% | 494 |
| 98 | 32" | Along the south boundary of the Wengert property | 15% | 269 |
| 99 | CFS TRAP | Along the east boundary of the Schadel property | 12% | 475 |
| 100 | 12" | Along the east boundary of the Schadel property | 10% | 80 |
| 101 | 18" | Along the east boundary of the Schadel property | 13% | 130 |
| 102 | 18" | Along the east boundary of the Schadel property | 5% | 270 |
| 103 | 18" | Along the east boundary of the Schadel property | 5% | 278 |
| 104 | 18" | Along the east boundary of the Schadel property | 5% | 288 |
| 105 | 18" | Along the east boundary of the Schadel property | 6% | 278 |
| 106 | 18" | Along the east boundary of the Schadel property | 7% | 262 |
| 107 | 18" | Along the east boundary of the Schadel property | 9% | 209 |
| 108 | 12" | Along the east boundary of the Schadel property | 10% | 138 |
| 109 | 12" | Along the east boundary of the Schadel property | 10% | 125 |
| 110 | 12" | Along the east boundary of the Schadel property | 13% | 57 |
| 111 | 12" | Along the east boundary of the Schadel property | 11% | 57 |
| 112 | 12" | Along the east boundary of the Schadel property | 8% | 67 |
| 113 | 12" | Along the east boundary of the Schadel property | 8% | 106 |
| 114 | 32" | Along the east boundary of the Schadel property | 7% | 502 |
| 115 | 18" | Along the east boundary of the Schadel property | 2% | 536 |
| 116 | 12" | Along the east boundary of the Schadel property | 4% | 122 |
| 117 | 18" | Along the east boundary of the Schadel property | 5% | 268 |
| 118 | 18" | Along the east boundary of the Schadel property | 7% | 268 |
| 119 | 24" | Along the east boundary of the Schadel property | 5% | 460 |
| 120 | 12" | Along the east boundary of the Schadel property | 7% | 97 |
| 121 | 24" | (Stockpile) Adjacent to the inverter pad in southeast corner of Hartman property (Tract 1 on the Location Map) | 2% | 171 |
| 122 | 24" | (Stockpile) Adjacent to the inverter pad in southwest corner of Hartman property (Tract 1 on the Location Map) | 3% | 188 |
| 123 | 24" | (Stockpile) Adjacent to the inverter pad on the east edge of the Hartman property (Tract 2 on the Location Map) | 2% | 137 |
| 124 | 24" | (Stockpile) In the northwest corner of the Daniels property (Tract 4 on the Location Map) | 8% | 510 |
| 125 | 24" | (Stockpile) Adjacent to the access road on the west edge of the Wengert property | 5% | 237 |
| 126 | 24" | (Stockpile) Along the northern edge of the project property | 14% | 402 |
| 127 | 24" | (Stockpile) Along the eastern edge of the project property | 10% | 341 |
| 128 | 24" | (Stockpile) Along the eastern edge of the project property | 5% | 343 |
| 129 | 24" | (Stockpile) North of the proposed substation pad | 6% | 357 |
| 130 | 24" | North of array adjacent to North Street | 8% | 73 |

## MATERIAL PROPERTY DATA SHEET

WESTERN GREEN

**VMax® S200™**

Permanent • Triple Net • Organic Fiber Matrix • Turf Reinforcement Mat

**DESCRIPTION**

S200 Turf Reinforcement Mat (TRM) is composed of 100% straw fibers mechanically (stitch) bound between a three-dimensional UV stabilized, synthetic net structure. Stitching is secured on one inch centers using UV stabilized, synthetic thread. S200 is a permanent, three-dimensional TRM that provides immediate erosion protection and long-term turf reinforcement and is intended for applications requiring erosion protection for greater than thirty-six months.

Each roll of S200 is made in the USA and manufactured under Western Green's Quality Assurance Program to ensure a continuous distribution of fibers and consistent thickness.



| Material Content | |
|---|---|
| Matrix | Straw |
| Netting | Top Net: Medium-weight, UV stable<br>Middle Net: Corrugated Heavyweight, UV stable<br>Bottom Net: Medium-weight, UV stable |
| Thread | Synthetic, UV Stable |

| Standard Roll Sizes | | |
|---|---|---|
| Width | 8 ft | (2.4 m) |
| Length | 90 ft | (27.4 m) |
| Weight ± 10% | 64 lb | (29.0 kg) |
| Area | 80 sy | (66.9 m²) |

*Material available in custom roll sizes*

| Approvals & Classification | |
|---|---|
| Classification | FHWA: Type S.C / ECTC: Type S.C |
| TTI Approvals | Class 2 Type H |
| NTPEP Number | ECP-2022-01-010 |

| Index Property | Test Method | Typical |
|---|---|---|
| Thickness | ASTM D6525 | 0.50 in. (13 mm) |
| Mass/Unit Area | ASTM D6566 | 12.0 oz/sy (400 g/sm) |
| Tensile Strength – MD | ASTM D6818 | 450 lbs/ft (6.6 kN/m) |
| Tensile Strength – TD | ASTM D6818 | 450 lbs/ft (6.6 kN/m) |
| Elongation - MD | ASTM D6818 | 30% |
| Elongation – TD | ASTM D6818 | 20% |
| UV Stability | ASTM D4355 | 80% @ 1000 hr |
| Light Penetration | ASTM D6567 | 15% |
| Biomass Improvement | ASTM D7322 | 300% |
| Specific Gravity | ASTM D792 | 57.4 lb/ft³ (0.92 g/cm³) |
| Porosity | ECTC | N/A |

| Design Parameters | | |
|---|---|---|
| **Property** | **Unvegetated** | **Vegetated[1]** |
| RUSLE C Factor[2] | 0.05 | N/A |
| Slope Maximum Gradient[3] | 0.5H:1V | 0.5H:1V |
| Permissible Shear Stress[4] | 2.3 psf (110 Pa) | 10.0 psf (480 Pa) |
| Permissible Velocity[4] | 8.5 fps (2.6 m/s) | 15 fps (4.6 m/s) |
| $n_{unvegetated}$ / $n_{vegetated}$ (HEC-15) | N/A | 0.67 |
| **Manning's n Roughness (HEC-15)** | | |
| $n_{lower}$ | $n_{mid}$ | $n_{upper}$ |
| 0.038 | 0.030 | 0.026 |

1 Maximum Gradient a recommendation for typical installations.
2 Hydraulic thresholds compliant with ASTM D6459/6460 but generalized for typical applications.
3 Vegetated values dependent on established stand of vegetation

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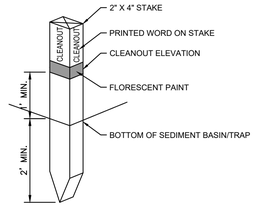
NORTH AMERICAN GREEN

Rev. 4.2023
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westerngreen.com

1 VMAX S200 MATTING
Scale: N.T.S.




| BMP ID | BOTTOM OF BASIN / TRAP ELEVATION (FT) | CLEANOUT ELEVATION (FT) |
|---|---|---|
| Sed. Basin #1 | 743.00 | 744.00 |
| Sed. Basin #2 | 722.00 | 723.05 |
| Sed. Basin #3 | 736.00 | 737.00 |
| Sed. Basin #4 | 743.00 | 744.00 |
| CFS Trap #1 | 752.00 | 753.20 |
| CFS Trap #2 | 754.00 | 755.25 |
| CFS Trap #3 | 740.00 | 741.30 |
| CFS Trap #4 | 737.00 | 738.10 |
| CFS Trap #5 | 736.00 | 737.10 |
| CFS Trap #6 | 739.25 | 740.35 |
| CFS Trap #7 | 741.00 | 742.00 |
| CFS Trap #8 | 739.00 | 740.05 |
| CFS Trap #9 | 739.00 | 740.35 |
| CFS Trap #10 | 752.00 | 753.00 |
| CFS Trap #11 | 745.00 | 746.00 |
| CFS Trap #12 | 745.00 | 746.10 |

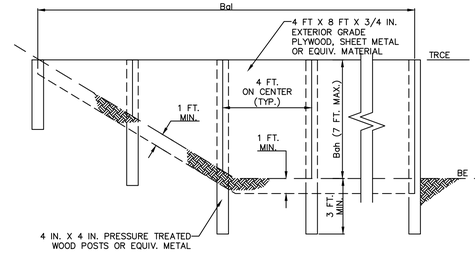
NOTES:

CLEANOUT STAKES MUST BE PLACED AT A HALF DISTANCE FROM CONCENTRATED INFLOWS TO SEDIMENT FACILITY RISERS/SKIMMERS.

WHEN SEDIMENT HAS ACCUMULATED TO THE DESIGNATED CLEANOUT ELEVATION ON ANY STAKE, ALL SEDIMENT SHALL BE REMOVED TO RESTORE BASIN CAPACITY IMMEDIATELY.

CLEANOUT STAKES ARE NOT REQUIRED IF THE CLEANOUT ELEVATION IS PAINTED ON THE SEDIMENT BAFFLE.

## STANDARD CONSTRUCTION DETAIL
## CLEAN OUT STAKE




NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

| | | BAFFLE | | PERMANENT RISER | BASIN BOTTOM |
|---|---|---|---|---|---|
| PCSM SCM NO. | E&S BMP NO. | LENGTH Bal (FT.) | HEIGHT Bah (FT.) | CREST ELEV. TCRE (FT.) | BOTTOM ELEV BE (FT.) |
| 3 | Sed. Basin #1 | 305 | 4.75 | 747.75 | 743.00 |
| 5 | Sed. Basin #2 | 348 | 6.40 | 728.40 | 722.00 |
| 7 | Sed. Basin #3 | 456 | 6.25 | 742.25 | 736.00 |
| 9 | Sed. Basin #4 | 422 | 7.10 | 750.10 | 743.00 |

## STANDARD CONSTRUCTION DETAIL #7-14
## BAFFLE

NOT TO SCALE

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE = STOP CALL
PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |

Kimley»Horn
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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

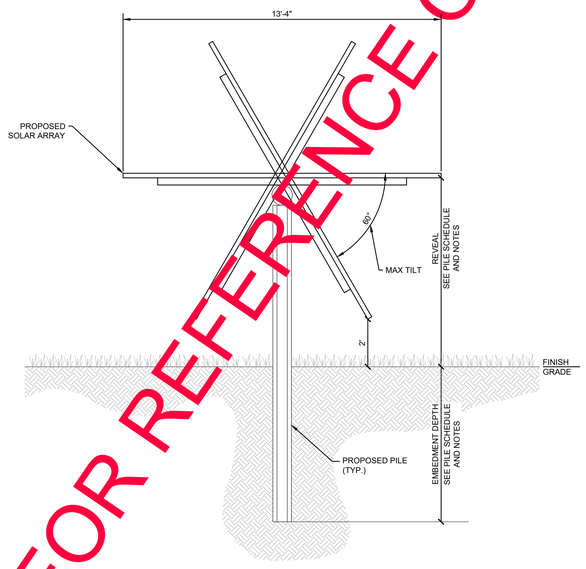
# G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

# EROSION AND SEDIMENT CONTROL DETAILS 5

SHEET NUMBER
C-255

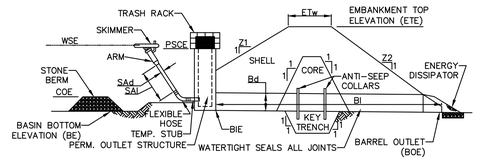
Plotted By: Zuobi, Wutao Sheet Set: G Morris Solar Layout: C-255 January 29, 2026 01:50:04pm K:\PHL_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-255 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
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FOR REFERENCE ONLY




## 1 SOLAR ARRAY DETAIL (TYP.)

Scale: N.T.S.




NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY.

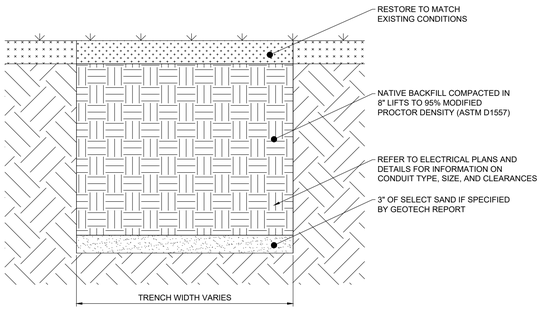
ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7–16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

| BASIN NO. | Z1 (FT) | Z2 (FT) | PERM STRUCT CREST ELEV PSCE (FT) | EMBANKMENT | | | | CLEAN OUT ELEV COE (FT) | BOTTOM ELEV BE (FT) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TOP ELEV ETE (FT) | TOP WIDTH Etw (FT) | KEY TRENCH DEPTH (FT) | KEY TRENCH WIDTH (FT) | | |
| Sed. Basin #1 | 3.00 | 3.00 | 747.75 | 750.50 | 8.00 | 2.00 | 4.00 | 744.00 | 743.00 |
| Sed. Basin #2 | 3.00 | 3.00 | 728.40 | 732.00 | 8.00 | 2.00 | 4.00 | 723.05 | 722.00 |
| Sed. Basin #3 | 3.00 | 3.00 | 740.35 | 743.00 | 8.00 | 2.00 | 4.00 | 737.00 | 736.00 |
| Sed. Basin #4 | 3.00 | 3.00 | 750.10 | 753.00 | 8.00 | 2.00 | 4.00 | 744.00 | 743.00 |

| SKIMMER | | | OUTLET BARREL | | | | |
|---|---|---|---|---|---|---|---|
| DIA SAd (IN) | LENGTH SAI (FT) | MAT'L | DIA Bd (IN) | INLET ELEV BIE (FT) | MAT'L | LENGTH BI (FT) | OUTLET ELEV BOE (FT) |
| 4 | 8.0 | PVC | 24.00 | 743.00 | HDPE | 60.00 | 742.00 |
| 4 | 8.0 | PVC | 36.00 | 722.00 | HDPE | 64.46 | 721.25 |
| 4 | 8.0 | PVC | 30.00 | 736.00 | HDPE | 53.00 | 735.00 |
| 4 | 8.6 | PVC | 36.00 | 743.00 | HDPE | 92.31 | 736.00 |

STANDARD CONSTRUCTION DETAIL #7-4
SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER

NOT TO SCALE

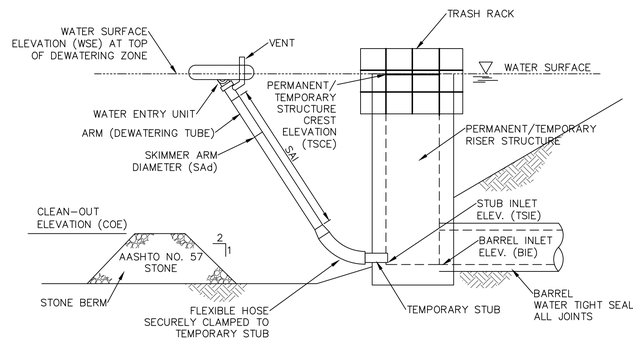



NOTES:

1. TOPSOIL SHOULD BE SET ASIDE AND ONLY USED TO TOP OFF AREAS WHERE VEGETATION IS PROPOSED. ALL TOPSOIL SHALL BE COMPACTED TO 85% PER THE MODIFIED PROCTOR DENSITY TEST (ASTM D1557).
2. ONCE ALL ELECTRICAL CONDUITS OR CONDUCTORS ARE IN PLACE, RE-COMPACT THE DISTRUBED NATIVE SOIL IN 6" LIFTS TO 95% PER THE MODIFIED PROCTOR DENSITY TEST (ASTM D1557).
3. ONSITE NON-ORGANIC SOILS ARE SUITABLE FOR USE AS BACKFILL. CONTRACTOR TO ENSURE THAT SOILS ARE FREE OF DEBRIS CAPABLE OF DAMAGING CONDUIT OR CONDUCTORS. REFER TO EARTHWORK SPECIFICATION AND THE GEOTECHNICAL REPORT FOR MORE INFORMATION.
4. REFER TO ELECTRICAL PLANS AND DETAILS FOR INFORMATION ON CONDUIT TYPES, SIZE, AND CLEARANCES.

## 2 CONDUIT TRENCH DETAIL

Scale: N.T.S.




SECTION VIEW

| BASIN NO. | WATER SURACE ELEV. WSE (FT) | SKIMMER | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ORIFICE | | ARM | | | FLEXIBLE HOSE | | |
| | | DIA (IN) | HEAD (FT) | DIA SAd (IN) | LENGTH SAI (FT) | MAT'L | DIA (IN) | LENGTH (IN) | MAT'L |
| Sed. Basin #1 | 747.75 | 3.0 | 3.75 | 3 | 8.0 | PVC | 4.00 | 12.00 | PVC |
| Sed. Basin #2 | 728.40 | 5.0 | 5.35 | 5 | 8.0 | PVC | 4.00 | 12.00 | PVC |
| Sed. Basin #3 | 742.25 | 4.0 | 5.25 | 4 | 8.0 | PVC | 4.00 | 12.00 | PVC |
| Sed. Basin #4 | 750.10 | 5.0 | 6.10 | 5 | 8.6 | PVC | 4.00 | 12.00 | PVC |

| BASIN NO. | PERMANENT/TEMPORARY RISER | | | BARREL |
|---|---|---|---|---|
| | CREST ELEV TSCE (FT) | RISER | | |
| | | DIA (IN) | MAT'L | INLET ELEV BOE (FT) |
| Sed. Basin #1 | 747.75 | 24 x 24 | HDPE | 743.00 |
| Sed. Basin #2 | 728.40 | 36 x 36 | HDPE | 722.00 |
| Sed. Basin #3 | 742.25 | 30 x 30 | HDPE | 736.00 |
| Sed. Basin #4 | 750.10 | 36 x 36 | HDPE | 743.00 |

NOTES:

ALL ORIFICES ON PERMANENT RISER BELOW TEMPORARY RISER EXTENSION SHALL HAVE WATER–TIGHT TEMPORARY SEALS PROVIDED. TEMPORARY STUB INVERT ELEVATION SHALL BE SET AT OR BELOW SEDIMENT CLEAN–OUT ELEVATION.

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

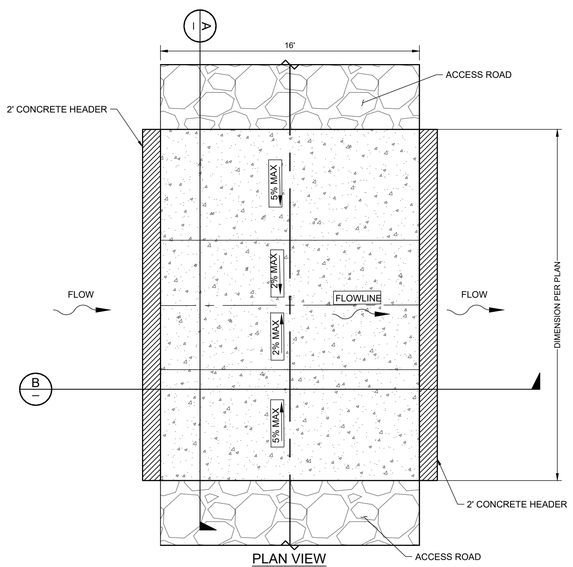
SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN–OUT STAKE OR THE TOP OF THE STONE BERM. SEE STANDARD CONSTRUCTION DETAIL #7–3 FOR CONFIGURATION OF STONE BERM.

STANDARD CONSTRUCTION DETAIL #7-2
SKIMMER ATTACHED TO PERMANENT RISER

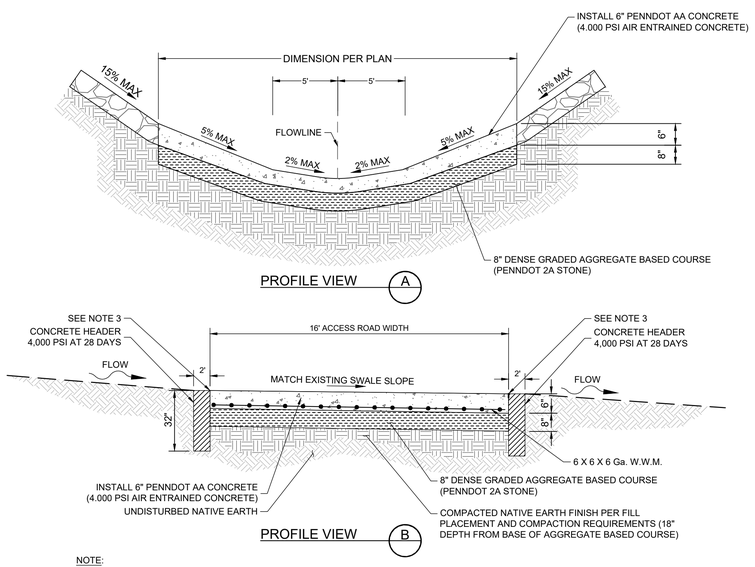
NOT TO SCALE




PLAN VIEW

## 3 LOW WATER CROSSING DETAIL

Scale: N.T.S.




NOTE:

1. ALL IMPROVEMENTS SHALL ADHERE TO THE GEOTECHNICAL ENGINEERING REPORT.
2. MAXIMUM 15'-0" TO MINIMUM 4'-0" JOINT SPACING FOR THE CONCRETE DRIVE.
3. PLACE PREMOLDED EXPANSION JOINT FILLER MATERIAL 1/2" THICK OR POLYSTYRENE BONDBREAKER 1/4" THICK BETWEEN THE HEADER AND CONCRETE ACCESS ROAD. ALL JOINTS AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 705.4.

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SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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KHA PROJECT 112882004
DATE 01/30/2026
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DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

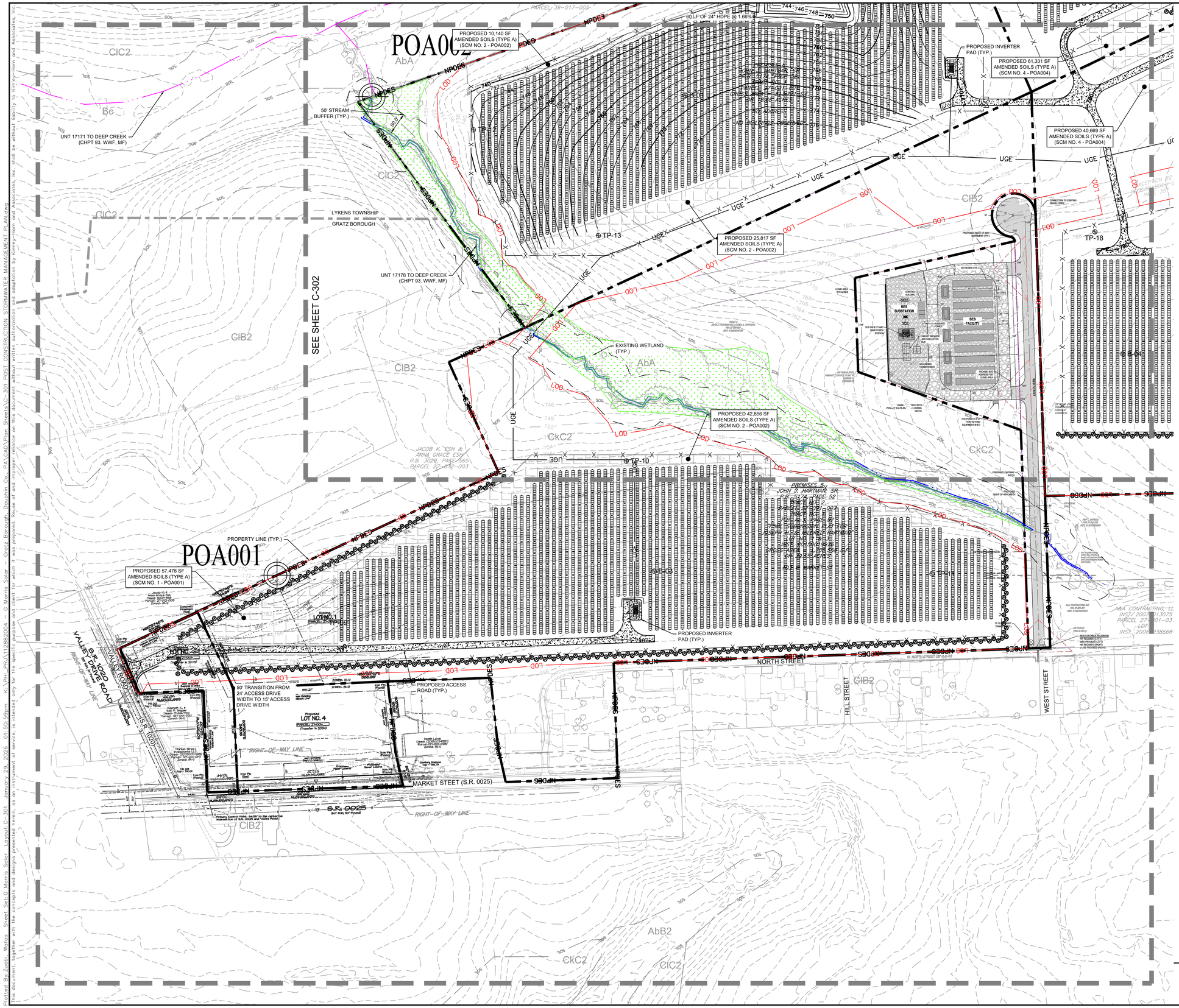
# EROSION AND SEDIMENT CONTROL DETAILS 6

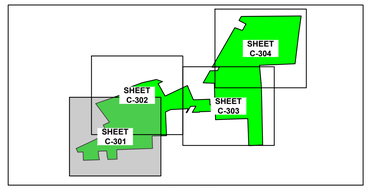
# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-256

Plotted By: Zuobi, Wafaa Sheet Set: G Morris Solar Layout: C-256 January 29, 2026 01:50:05pm K:\PHI_PRJ\112882004 - G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-256 EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
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KEY MAP
SCALE: 1" = 2,000'

## PCSM LEGEND

| | |
|---|---|
| LOD | PROPOSED LIMIT OF DISTURBANCE |
| NPDES | PROJECT SITE AREA |
| | PROPERTY LINE |
| X X X | PROPOSED CHAIN LINK FENCE |
| | *EXISTING* MINOR CONTOUR |
| 680 | *EXISTING* MAJOR CONTOUR |
| | PROPOSED MINOR CONTOUR |
| 680 | PROPOSED MAJOR CONTOUR |
| | ROAD RIGHT-OF-WAY |
| SOIL | SOIL BOUNDARY |
| Dbd | SOIL TYPE LABEL |
| UGE | PROPOSED UNDERGROUND ELECTRIC |
| OHE | PROPOSED OVERHEAD ELECTRIC |
| | PROPOSED TREELINE |
| | *EXISTING* FIELD DELINATED STREAM |
| | *EXISTING* NWI/NHD STREAM |
| | WATERCOURSE / WETLAND BUFFER |
| | PROPOSED CONCRETE CRADLE |
| | *EXISTING* WETLANDS |
| | FEMA FLOOD ZONE A (100-YEAR FLOODPLAIN) |
| | EMERGENCY SPILLWAY MATTING |
| | PROPOSED AMENDED SOILS |
| | PROPOSED LANDSCAPE BUFFER |
| | PERMANENT LAYDOWN AREA |
| POA000 | POINT OF ANALYSIS |
| DP000 | DISCHARGE POINT |
| B0 | PROPOSED PIPE IDENTIFICATION LABELS |
| TP-00 | INFILTRATION TEST PIT LOCATION MARKER |
| B-00 | BORE PIT LOCATION MARKER |

**NOTES**

- THE TOTAL PROJECT SITE AREA FOR THE SITE IS 197.47 ACRES
- THE TOTAL LIMIT OF DISTURBANCE FOR THE SITE IS 144.06 ACRES
- THIS PLAN IS INTENDED FOR POST CONSTRUCTION STORMWATER MANAGEMENT PURPOSES ONLY.
- SURVEY PROVIDED BY HONOR ENGINEER CO. ON 09/09/2022

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

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SERIAL NUMBER: 20213371543

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| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED — PAUL W. HUGHES — ENGINEER PE079231

KHA PROJECT 112682004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 1

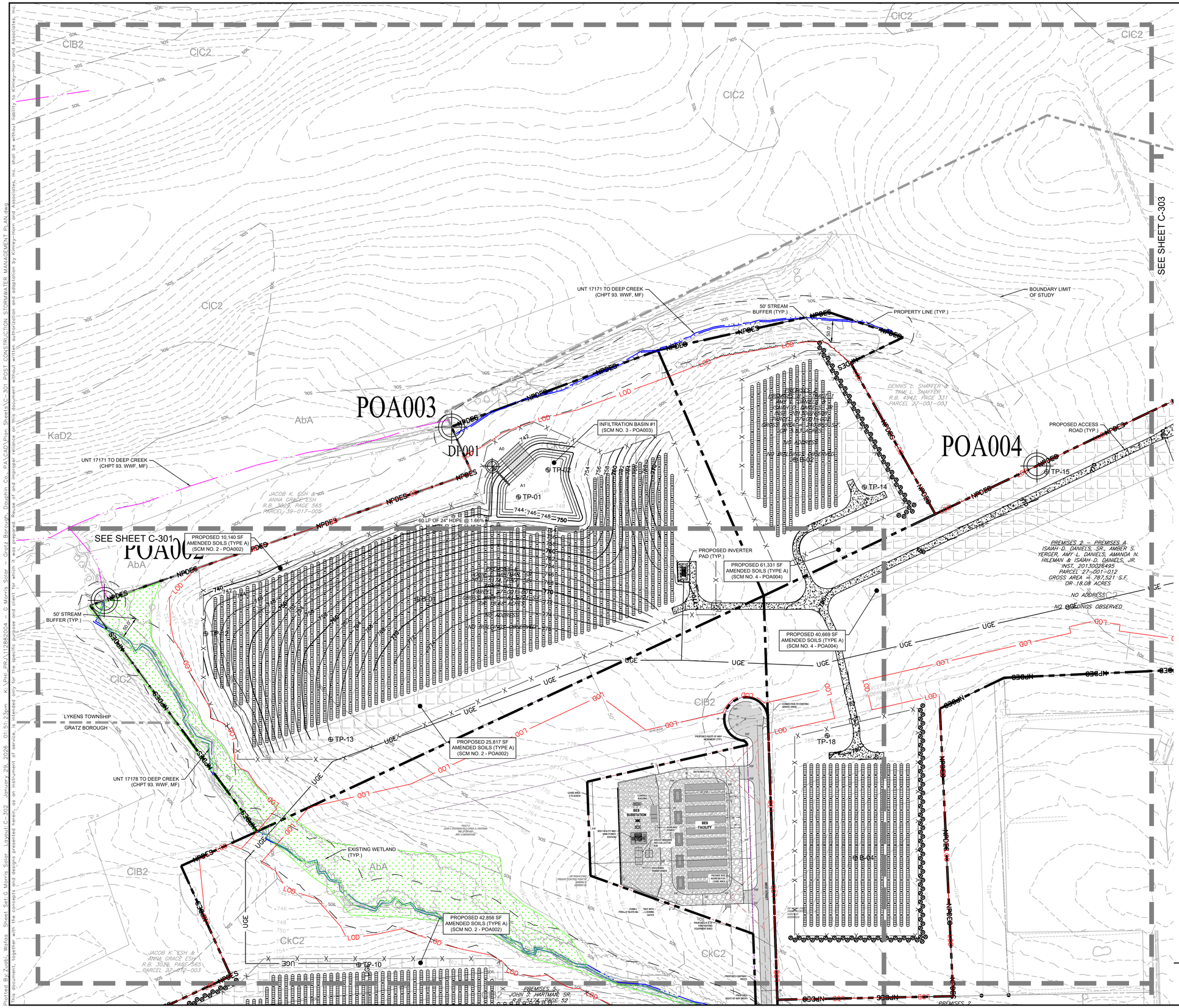
# G. MORRIS SOLAR

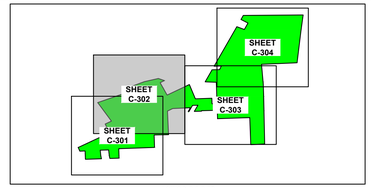
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-301

Plotted By:Zach Wofco Sheet Set:G Morris Solar Layout:C-301 January 29, 2026 01:50:03pm K:\PHI_PR\112682004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-301 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.dwg
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KEY MAP
SCALE: 1" = 2,000'

## PCSM LEGEND

| | |
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| LOD | PROPOSED LIMIT OF DISTURBANCE |
| NPDES | PROJECT SITE AREA |
| | PROPERTY LINE |
| X X X | PROPOSED CHAIN LINK FENCE |
| | *EXISTING* MINOR CONTOUR |
| 680 | *EXISTING* MAJOR CONTOUR |
| | PROPOSED MINOR CONTOUR |
| 680 | PROPOSED MAJOR CONTOUR |
| | ROAD RIGHT-OF-WAY |
| SOIL | SOIL BOUNDARY |
| Dbd | SOIL TYPE LABEL |
| UGE | PROPOSED UNDERGROUND ELECTRIC |
| OHE | PROPOSED OVERHEAD ELECTRIC |
| | PROPOSED TREELINE |
| | *EXISTING* FIELD DELINATED STREAM |
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| | WATERCOURSE / WETLAND BUFFER |
| | PROPOSED CONCRETE CRADLE |
| | *EXISTING* WETLANDS |
| | FEMA FLOOD ZONE A (100-YEAR FLOODPLAIN) |
| | EMERGENCY SPILLWAY MATTING |
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| POA000 | POINT OF ANALYSIS |
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| TP-00 | INFILTRATION TEST PIT LOCATION MARKER |
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NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

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PA 1 CALL
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| No. | REVISIONS | DATE | BY |
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| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
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KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 2

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-302

Printed By: Zach Wolfe Sheet Set: G Morris Solar Layout: C-302 January 29, 2026 01:51:23pm K:\PHI_PR\112882004 – G Morris Solar – Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-301 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.dwg
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SEE SHEET C-302

SEE SHEET C-304

SEE SHEET C-303

POA008

POA009

POA010

POA011

DP003

DP004

LEVEL SPREADER #1

LEVEL SPREADER #2

76 LF OF 30" HDPE @ 9.91%

92 LF OF 36" HDPE @ 7.58%

BOUNDARY LIMIT OF STUDY

LEVEL SPREADER #1 (SCM NO. 12 - POA008)

INFILTRATION BASIN #3 (SCM NO. 7 - POA008)

LEVEL SPREADER #2 (SCM NO. 13 - POA009)

PROPERTY LINE (TYP.)

INFILTRATION BASIN #4 (SCM NO. 9 - POA009)

VEGETATED SWALE #1 (SCM NO. 8 - POA009)

PROPOSED 61,331 SF AMENDED SOILS (TYPE A) (SCM NO. 4 - POA004)

PROPOSED 40,669 SF AMENDED SOILS (TYPE A) (SCM NO. 4 - POA004)

50' TRANSITION FROM 24' ACCESS DRIVE WIDTH TO 15' ACCESS DRIVE WIDTH

PROPOSED LOW FLOW CROSSING #2. SEE DETAIL #1 ON SHEET C-352 FOR DETAILS

PROPOSED RIPRAP (SIZE R-5) TO BE PLACED UPSTREAM AND DOWNSTREAM OF LOW FLOW CROSSING

PROPOSED LOW FLOW CROSSING #1. SEE DETAIL #1 ON SHEET C-352 FOR DETAILS

PROPOSED RIPRAP (SIZE R-5) TO BE PLACED UPSTREAM AND DOWNSTREAM OF LOW FLOW CROSSING

PROPOSED PERMANENT LAYDOWN AREA (TYP.)

PROPOSED SUBSTATION PAD

PROPOSED INVERTER PAD (TYP.)

PROPOSED ACCESS ROAD (TYP.)

PROPOSED 11,514 SF AMENDED SOILS (TYPE A) (SCM NO. 10 - POA010)

PROPOSED 50,048 SF AMENDED SOILS (TYPE A) (SCM NO. 11 - POA011)

50' TRANSITION FROM 24' ACCESS DRIVE WIDTH TO 15' ACCESS DRIVE WIDTH

UNT 17215 TO PINE CREEK (CHPT 93. CWF, MF)

50' STREAM BUFFER (TYP.)

TP-SS-01

TP-05

TP-06

TP-23

TP-24

TP-07

TP-08

TP-17

TP-16

NORTH CENTER STREET (S.R.1013)

BELLEVUE ROAD (S.R. 1011)

SPRUCE STREET

NORTH SECOND STREET

CENTER STREET (S.R.1013)

EAST NORTH STREET

CHERRY STREET

LYKENS TOWNSHIP

GRATZ BOROUGH

RANDY LEE BOYER & DONNA L. BOYER
R.B. 2965, PAGE 134
PARCEL 27-001-024
LOT 2

THE GRATZ AGRICULTURAL AGRICULTURAL ASSN.
R.B. 5, PAGE 2
TRACT 2
PARCEL 008-004

PREMISES 7
HENRY S. BELER & SARA ANN ZOOK
INST. 20140019719
PARCEL 27-002-012
R.B. Z-5, PAGE 95
"PRELIMINARY/FINAL PLAN OF SUBDIVISION FOR HANNAMORE T. LEITZEL"
GROSS AREA = 194,145 S.F. OR 4.46 ACRES
399 CENTER ST

BOROUGH OF GRATZ
R.B. 2003, PAGE 137
PARCEL 27-001-018
LOT 1
P.B. Z-6, PAGE 22

MELVIN S. ZOOK
INST. 201600015852
PARCEL 27-001-029
LOT 6
P.B. E-8, PAGE 31

PENNSYLVANIA POWER & LIGHT COMPANY
D.B. B-63, PAGE 298
PARCEL 27-001-024
E-8, PAGE 31
LOT 2

TROY L. SCHADEL
R.B. 4379, PAGE 357
PARCEL 27-001-030
LOT NO. 5
P.B. E-8, PAGE 31

PREMISES 3
TROY L. SCHADEL
R.B. 4379, PAGE 357
PARCEL 27-001-030
LOT NO. 5
P.B. E-8, PAGE 31
"FINAL SUBDIVISION PLAN FOR BRUCE R. & TANYA A. SCHADEL"
GROSS AREA = 437,707 S.F.
OR 10.05 ACRES
201 N 2ND ST

WILLIAM H. BYLE & RACHEAL M. BYLE
R.B. 4919, PAGE 72
PARCEL 27-001-026
LOT 3
P.B. U-7, PAGE 36

JOAN L. BUFFINGTON
INST. 20070048970
PARCEL 27-002-027

CRAIG P. BYLE
R.B. 3867, PAGE 66
PARCEL 27-001-027
LOT 4
P.B. U-7, PAGE 36

CIB2

CIC2

Bc

Dbd

KaD2

SOIL

## KEY MAP

SCALE: 1" = 2,000'

## PCSM LEGEND

- LOD — PROPOSED LIMIT OF DISTURBANCE
- NPDES — PROJECT SITE AREA
- PROPERTY LINE
- X X X — PROPOSED CHAIN LINK FENCE
- *EXISTING* MINOR CONTOUR
- 680 — *EXISTING* MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 680 — PROPOSED MAJOR CONTOUR
- ROAD RIGHT-OF-WAY
- SOIL — SOIL BOUNDARY
- Dbd — SOIL TYPE LABEL
- UGE — PROPOSED UNDERGROUND ELECTRIC
- OHE — PROPOSED OVERHEAD ELECTRIC
- PROPOSED TREELINE
- *EXISTING* FIELD DELINATED STREAM
- *EXISTING* NWI/NHD STREAM
- WATERCOURSE / WETLAND BUFFER
- PROPOSED CONCRETE CRADLE
- *EXISTING* WETLANDS
- FEMA FLOOD ZONE A (100-YEAR FLOODPLAIN)
- EMERGENCY SPILLWAY MATTING
- PROPOSED AMENDED SOILS
- PROPOSED LANDSCAPE BUFFER
- PERMANENT LAYDOWN AREA
- POA000 — POINT OF ANALYSIS
- DP000 — DISCHARGE POINT
- B0 — PROPOSED PIPE IDENTIFICATION LABELS
- INFILTRATION TEST PIT LOCATION MARKER
- BORE PIT LOCATION MARKER

## NOTES

- THE TOTAL PROJECT SITE AREA FOR THE SITE IS 197.47 ACRES
- THE TOTAL LIMIT OF DISTURBANCE FOR THE SITE IS 144.06 ACRES
- THIS PLAN IS INTENDED FOR POST CONSTRUCTION STORMWATER MANAGEMENT PURPOSES ONLY.
- SURVEY PROVIDED BY HONOR ENGINEER CO. ON 09/09/2022

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

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SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |


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PHILADELPHIA, PA 19102
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079251 — PENNSYLVANIA

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 3

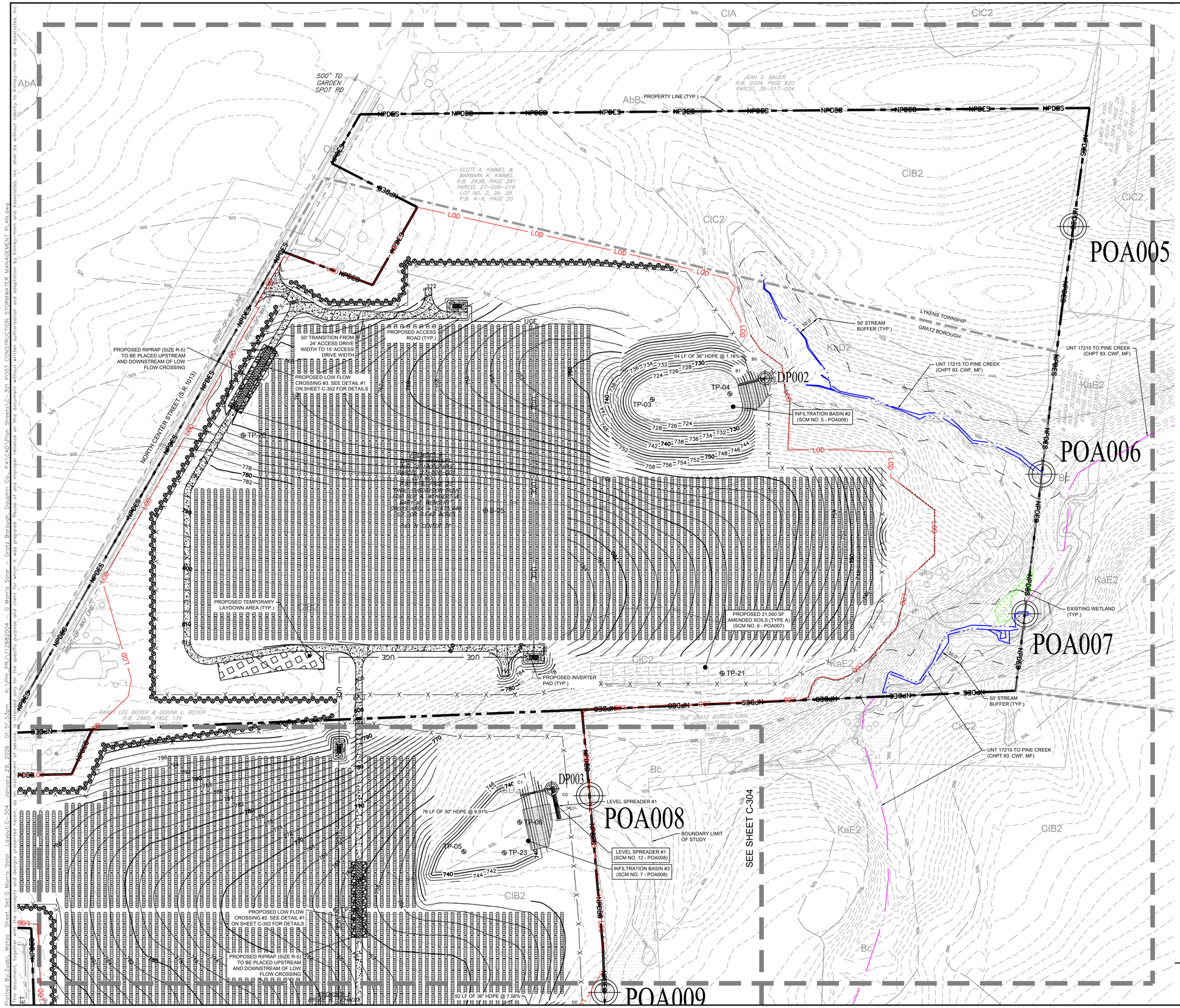
# G. MORRIS SOLAR

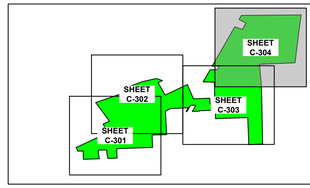
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-303


Plotted By: Zuobi, Wafaa Sheet Set: G Morris Solar Layout: C-303 January 29, 2026 01:51:38pm K:\PHI_PR\112882004 – G Morris Solar – Grate Borough, Dauphin Co., PA\CAD\Plan Sheets\C-301 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.dwg
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KEY MAP
SCALE: 1" = 2,000'

## PCSM LEGEND

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- TP-00 — INFILTRATION TEST PIT LOCATION MARKER
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- THE TOTAL LIMIT OF DISTURBANCE FOR THE SITE IS 144.06 ACRES
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- SURVEY PROVIDED BY HONOR ENGINEER CO. ON 09/09/2022

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KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 4

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-304

Plotted By: Zoobh, Wraps Sheet Set: G Morris Solar Layout: C-304 January 29, 2026 01:51:53pm K:\Phl_PRJ\112882004 - G Morris Solar — Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-301 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.dwg
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# P.C.S.M. S.C.M. INSPECTION AND MAINTENANCE NOTES

UNTIL THE SITE IS STABILIZED AND DURING THE CONSTRUCTION ACTIVITIES, ALL SCMS MUST BE MAINTAINED PROPERLY BY CONTRACTOR. ALL PERMANENT MAINTENANCE PROCEDURES SHALL BE PERFORMED BY THE OWNER. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL SCMS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY AND IN ACCORDANCE WITH THESE PROCEDURES, PLANS, AND DETAILS. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS. ALL SITE INSPECTIONS MUST BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INDICATING THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG MUST BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DAUPHIN COUNTY CONSERVATION DISTRICT UPON REQUEST. TOWNSHIP WILL BE GRANTED A BLANKET EASEMENT FOR ACCESS AND INSPECTION OF STORMWATER MANAGEMENT FACILITIES.

**RESPONSIBLE PARTY: G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC**
**2650 LOCUST ST, SUITE 100**
**ST. LOUIS, MO 63103**

**INFILTRATION BASIN**

INSPECTION: INSPECT THE BASIN AFTER RAINFALL EVENTS OF ONE (1) INCH OR GREATER AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BASIN.

MAINTENANCE:
- REMOVE TRASH AND DEBRIS FROM THE INFILTRATION BASIN AS NECESSARY.
- MOW AND TRIM VEGETATION A MINIMUM OF TWICE PER YEAR TO ENSURE SAFETY, AESTHETICS, PROPER BASIN OPERATION, AND TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY. MOW ONLY WHEN BASIN IS DRY TO AVOID RUTTING.
- WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED.
- TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH. REPLACE ANY DEAD OR DYING VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
- DETRITUS MAY ALSO NEED TO BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
- MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLENISHED AS NEEDED. ONCE EVERY 2 TO 3 YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT.
- DURING PERIODS OF EXTENDED DROUGHT, INFILTRATION BASIN AREAS MAY REQUIRE WATERING.
- THE UNDERLYING SOIL IN THE BIORETENTION/INFILTRATION BASIN BASIN MAY NEED TO BE ROTOTILLED OR OTHERWISE AERATED IF THE DRAW DOWN TIME IN THE BASIN IS MORE THAN 48 HOURS. THIS SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME DUE TO NATURAL SOIL COMPACTION AND SETTLING.
- SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED.
- INSPECTIONS OF THE BASIN SHALL BE CONDUCTED WITHIN 48 HOURS AFTER EVERY STORM EVENT OF GREATER THAN ONE (1) INCH OF RAIN, OR TWICE PER YEAR AT A MINIMUM.
  a. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND THE GROWTH OF UNWANTED OR INVASIVE VEGETATION
  b. ALL BASIN STRUCTURES EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT, INCLUDING THE BASIN BOTTOM, TRASH RACKS, OUTLETS STRUCTURES, RIPRAP, AND INLETS, SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION. SEDIMENT ACCUMULATION SHALL BE ADDRESSED WHEN SEDIMENT IS GREATER THAN 3 INCHES DEEP AT ANY SPOT OR IS COVERING VEGETATION.
  c. INSPECT FOR CONFORMANCE WITH ORIGINAL DESIGN CROSS-SECTION AND CORRECT AS NEEDED.
  d. INSPECT ALL PIPES, CATCH BASINS, INLET AND OUTLET STRUCTURES FOR DEFICIENCIES AND REPAIR OR REPLACE IF REQUIRED. COMMON DEFICIENCIES INCLUDE BROKEN CONCRETE, CRUSHED OR RUSTED PIPES, MISSING GROUT, OR BLOCKAGES CAUSED BY LITTER OR FOREIGN MATERIALS.
- ACCESS SHALL BE GRANTED TO ALL AUTHORIZED LOCAL, STATE, AND FEDERAL AGENCIES FOR SCM INSPECTIONS AT REASONABLE TIMES AND WITH REASONABLE FREQUENCY.
- WRITTEN REPORTS DOCUMENTING ALL INSPECTIONS, REPAIRS, AND MAINTENANCE ACTIVITIES SHALL BE MAINTAINED ON SITE BY THE PROPERTY OWNER AT ALL TIMES.

**SWALES**

INSPECTION: SWALES SHALL BE INSPECTED FOR EROSION AND/OR SEDIMENT ACCUMULATION ON AN ANNUAL BASIS, AFTER A SIGNIFICANT RUNOFF EVENT OR AS DIRECTED BY THE BOROUGH ENGINEER.

MAINTENANCE: NEEDED MAINTENANCE SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. AREAS OF EROSION SHALL BE REGRADED AND STABILIZED, AND SEDIMENT MUST BE REMOVED TO RESTORE DESIGN CAPACITIES. ANY REMOVED SEDIMENT SHALL BE DISPOSED OF IN AN APPROVED MANNER AND IN ACCORDANCE WITH APPLICABLE STATE REGULATIONS. ALL AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.

**SOIL AMENDMENT & RESTORATION**

INSPECTION: SOIL AMENDMENTS SHALL BE INSPECTED ANNUALLY TO DETERMINE IF SOIL RESTORATION PROCESS WILL BE NEEDED.

MAINTENANCE: THE SOIL RESTORATION PROCESS MAY BE REPEATED AS NEEDED, PER INSPECTION. AREA IS NOT TO BE DISTURBED OR RETURNED TO CROPLAND.

**STORM CONVEYANCE SYSTEMS**

INSPECTION: STORM STRUCTURES AND PIPING SHALL BE INSPECTED ANNUALLY TO ENSURE PROPER FUNCTIONALITY. REPAIR/REPLACE AS NEEDED.

MAINTENANCE: ALL ONSITE INLETS, MANHOLES, AND STORMWATER PIPING SHALL BE CLEARED OF DEBRIS EVERY THREE (3) MONTHS OR WHEN ACCUMULATION HINDERS OPERATION OF THE FACILITY. SYSTEMS SHALL BE FLUSHED EVERY FIVE (5) YEARS. ALL SEDIMENT/DEBRIS/OIL REMOVED FROM THE STORMWATER MANAGEMENT SYSTEM SHALL BE DISPOSED PER LOCAL, STATE, AND FEDERAL STANDARDS. SHOULD ONSITE EROSION OCCUR FROM THE LANDSCAPED AREAS, SOURCE OF EROSION SHALL BE IMMEDIATELY STABILIZED AND THE INLETS, MANHOLES, AND STORMWATER PIPING SHALL BE CHECKED FOR ACCUMULATION AND CLEARED IF ACCUMULATION OF SEDIMENT EXISTS.

**ANY SCM NOT DRAINING WITHIN 72 HOURS AFTER THE END OF A RAIN EVENT SHOULD BE CONSIDERED A PCSM SCM FAILURE. SCM FAILURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:**

- **POOR CONSTRUCTION TECHNIQUES, ESPECIALLY SOIL COMPACTION/SMEARING, WHICH RESULTS IN SIGNIFICANTLY REDUCED INFILTRATION RATES.**
- **A LACK OF SITE SOIL STABILIZATION PRIOR TO THE BMP RECEIVING RUNOFF, WHICH GREATLY INCREASES THE POTENTIAL FOR SEDIMENT CLOGGING FROM CONTIGUOUS LAND SURFACES.**
- **INADEQUATE PRETREATMENT, ESPECIALLY OF SEDIMENT LADEN RUNOFF, WHICH CAN CAUSE A GRADUAL REDUCTION OF INFILTRATION RATES.**
- **LACK OF PROPER MAINTENANCE (EROSION REPAIR, RE-VEGETATION, REMOVAL OF DETRITUS, CATCH BASIN CLEANING, VACUUMING OF PERVIOUS PAVEMENT, ETC.) WHICH CAN REDUCE THE LONGEVITY OF SCMS.**

**IT IS THE RESPONSIBILITY OF "THE RESPONSIBLE PARTY" FOR STORMWATER MAINTENANCE AND OPERATIONS TO REMEDIATE THE PCSM SCM FAILURE IMMEDIATELY. THE RESPONSIBLE PARTY SHALL CONTACT A PROFESSIONAL ENGINEER TO DETERMINE THE CAUSE OF THE SCM FAILURE AND PROVIDE A CORRECTIVE ACTION MEASURE THAT CORRESPONDS TO PROTOCOL 2 OF THE STORMWATER BMP MANUAL (2006). IF IT IS DETERMINED BY THE MUNICIPAL ENGINEER, DAUPHIN COUNTY CONSERVATION DISTRICT AND/OR PADEP THAT THE SCMS ARE NOT FUNCTIONING PROPERLY DURING CONSTRUCTION OR DURING THE MAINTENANCE PERIOD, "THE RESPONSIBLE PARTY" WILL BE RESPONSIBLE FOR REDESIGNING/MODIFYING THE SCMS SO THAT THEY FUNCTION PROPERLY. IF MODIFICATIONS ARE REQUIRED, THE SCMS SHALL BE MONITORED FOR A MINIMUM OF ONE YEAR AFTER THESE MODIFICATIONS ARE COMPLETE AND WRITTEN CONFIRMATION SHALL BE OBTAINED FROM THE MUNICIPALITY, DAUPHIN COUNTY CONSERVATION DISTRICT AND/OR PADEP. FINAL GRADING CANNOT BE REVISED WITHOUT FIRST OBTAINING WRITTEN PERMISSION FROM THE MUNICIPALITY AND/OR DAUPHIN COUNTY CONSERVATION DISTRICT.**

# VEGETATIVE STABILIZATION SPECIFICATIONS

THE SPECIFICATIONS NOTED BELOW ARE INTENDED TO REPRESENT STANDARD E&S WORKSHEET #21 FROM THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012.

| **(TEMPORARY)** | **SPRING** | **FALL** | **WINTER** |
|---|---|---|---|
| | *MARCH 16 - AUGUST 15* | *AUGUST 16 - OCTOBER 15* | *OCTOBER 16 - MARCH 15* |
| SPECIES: | ANNUAL RYEGRASS | ANNUAL RYEGRASS | WINTER RYE |
| % PURE LIVE SEED (PLS): | 81% | 81% | 83% |
| APPLICATION RATE: | 40 LB/ACRE | 40 LB/ACRE | 168 LB/ACRE |
| SPECIES: | SPRING OATS | WINTER WHEAT | |
| % PURE LIVE SEED (PLS): | 83% | 83% | |
| APPLICATION RATE: | 96 LB/ACRE | 180 LB/ACRE | |

| | |
|---|---|
| FERTILIZER TYPE: | COMMERCIAL 10-10-10 |
| FERTILIZER APPL. RATE: | 500 LB/ACRE (NOT REQUIRED FOR STOCKPILES) |
| LIMING RATE: | 1 TON/ACRE (NOT REQUIRED FOR STOCKPILES) |
| MULCH TYPE: | GRASS HAY OR CEREAL STRAW |
| MULCHING RATE: | 3 TONS/ACRE |

**(PERMANENT - ALL AREAS OUTSIDE OF SCM TO THE LIMIT OF DISTURBANCE)**

| | | |
|---|---|---|
| TOPSOIL PLACEMENT DEPTH: | 4-6 INCHES MINIMUM | |
| **SEED MIXTURE:** | **ERNST MIX** | |
| ERNST MIX: | 186-1 | |
| % PURE LIVE SEED (PLS): | (PER SUPPLIER) | |
| APPLICATION RATE: | 4 LBS/1,000 SF | |
| FERTILIZER TYPE: | COMMERCIAL 10-20-20 | |
| FERTILIZER APPL. RATE: | 1,000 LB/ACRE (OR AS PER SOIL TEST) | |
| LIMING RATE: | 6 TONS/ACRE (OR AS PER SOIL TEST) | |
| MULCH TYPE: | GRASS HAY OR CEREAL STRAW | |
| MULCHING RATE: | 3 TONS/ACRE | |
| ANCHOR MATERIAL: | NOT APPLICABLE | |
| ANCHORING METHOD: | CRIMPING | |
| RATE OF ANCHOR MATERIAL APPL.: | NOT APPLICABLE | |
| SEEDING SEASON DATES: | **SPRING** | **FALL** |
| | *MARCH 15 - JUNE 1* | *AUGUST 15 - OCTOBER 15* |

**(PERMANENT - SCM SEEDING)**

TOPSOIL PLACEMENT DEPTH: REFER TO SCM CROSS SECTION DETAIL

| **SEED MIXTURE:** | **NURSE CROP** *(PICK ONE)* | + | **ERNST MIX** *(PICK ONE)* | |
|---|---|---|---|---|
| | **SPRING/SUMMER[1]** | | **SPRING/SUMMER²** | **FALL** |
| NURSE CROP SPECIES [1]: | BARNYARD GRASS | | JAPANESE MILLET | GRAIN RYE |
| % PURE LIVE SEED (PLS): | 78% | | 78% | 83% |
| APPLICATION RATE: | 10 LBS/AC | | 10 LBS/AC | 30 LBS/AC |

| | | | |
|---|---|---|---|
| ERNST MIX: | 126 | | |
| % PURE LIVE SEED (PLS): | (PER SUPPLIER) | | |
| APPLICATION RATE: | 20-40 LBS/AC | | |
| FERTILIZER TYPE: | COMMERCIAL 10-20-20 | | |
| FERTILIZER APPL. RATE: | 1,000 LB/ACRE (OR AS PER SOIL TEST) | | |
| LIMING RATE: | 6 TONS/ACRE (OR AS PER SOIL TEST) | | |
| MULCH TYPE: | EROSION CONTROL BLANKET (REFER TO PLANS FOR TYPE) | | |
| MULCHING RATE: | NOT APPLICABLE | | |
| ANCHOR MATERIAL: | STEEL | | |
| ANCHORING METHOD: | STAPLE | | |
| RATE OF ANCHOR MATERIAL APPL.: | STAPLE PATTERN "D" (REFER TO STANDARD CONSTRUCTION DETAIL #11-1) | | |
| SEEDING SEASON DATES: | **SPRING/SUMMER[1]** | **SPRING/SUMMER²** | **FALL** |
| | *MAY 1 - AUGUST 31* | *MAY 1 - AUGUST 10* | *SEPT. 1 - OCTOBER 31* |

[1] NURSE CROP SPECIES TO BE SELECTED BASED ON TIME OF PLANTING SEEDING SEASON

NOTES:

1. ALTERNATE TEMPORARY SEEDING MIXTURES MAY BE PROVIDED IN ACCORDANCE WITH THE SEED MIXTURES FOR SITE CONDITIONS SPECIFIED IN TABLE 11.5 OF THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."
2. SEEDING RATES ARE STATED AS POUNDS PER ACRE (LB/A) OF PURE LIVE SEED (PLS). PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES THE PERCENTAGE OF GERMINATION DIVIDED BY 100. SEED SHOULD NOT BE USED LATER THAN ONE YEAR AFTER THE TEST DATE THAT APPEARS ON THE LABEL. USE OF SEED OLDER THAN ONE YEAR COULD RESULT IN LESS THAN SATISFACTORY VEGETATIVE COVERAGE AND THE NEED TO RE-SEED THE DISTURBED AREA.
3. A COMPOST BLANKET WHICH MEETS THE STANDARDS OF CHAPTER 11 MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN TABLE 11.2 OF THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."

**TEMPORARY/COVER CROP SPECIFICATIONS:** AREAS TO BE SEEDED WITH ERNMX 186-1 SHOULD NOT REQUIRE A COVER CROP AT THE TIME OF PERMANENT SEEDING. IMMEDIATE STABILIZATION SHALL OCCUR ON ALL DISTURBED AREAS WHEN THERE IS A TEMPORARY CESSATION OF ACTIVITY (FOUR (4) DAYS OR MORE). IF THE DISTURBED AREA REACHES FINAL GRADE, TEMPORARY STABILIZATION IS NOT REQUIRED, AND PERMANENT STABILIZATION CAN OCCUR.

**SEEDING INSTALLATION INSTRUCTIONS**

**HERBICIDE TREATMENT FOR PA NOXIOUS & PA INVASIVE PLANTS**

**SPRING APPLICATION:** THE FIRST APPLICATION WILL BE PERFORMED WHEN EXISTING VEGETATION HAS REACHED 6 INCHES OF NEW GROWTH. THE SECOND APPLICATION WILL BE PERFORMED NO SOONER THAN TWO WEEKS FOLLOWING THE FIRST APPLICATION (IF NECESSARY). BOTH HERBICIDE TREATMENTS WILL INCLUDE A NON-SELECTIVE HERBICIDE SUCH AS GLYPHOSATE AND POSSIBLY A SELECTIVE BROADLEAF HERBICIDE SUCH AS 2-4,D IF SUBSTANTIAL BROADLEAF WEEDS ARE PRESENT. SEEDING CAN TAKE PLACE ONE WEEK FOLLOWING LAST HERBICIDE APPLICATION.

**FALL APPLICATION:** FIRST HERBICIDE APPLICATION WILL NEED TO BE PERFORMED DURING THE GROWING SEASON TO BE EFFECTIVE. HERBICIDE APPLICATION #2 CAN BE PERFORMED NO SOONER THAN TWO WEEKS FOLLOWING THE FIRST APPLICATION BUT WHILE LATE SEASON WEEDS ARE STILL ACTIVE. SEEDING CAN TAKE PLACE WITHIN ONE WEEK FOLLOWING SECOND APPLICATION BUT NOT UNTIL THE DORMANT SEASON (END OF OCTOBER AT EARLIEST). BOTH HERBICIDE TREATMENTS WILL INCLUDE A NON-SELECTIVE HERBICIDE SUCH AS GLYPHOSATE AND POSSIBLY A SELECTIVE BROADLEAF HERBICIDE SUCH AS 2-4,D IF SUBSTANTIAL BROADLEAF WEEDS ARE PRESENT.

**SEEDING APPLICATION INSTRUCTIONS**:

- SEED WILL BE PLANTED USING A WARM SEASON NO TILL DRILL TO PROMOTE BEST SEED TO SOIL CONTACT IN OPEN AREAS TO BE SEEDED. OPEN AREAS BETWEEN PANEL ROWS MAY ALSO BE DRILL SEEDED OR BROADCAST SEED DEPENDING ON BEST APPLICATION DUE TO SITE CONDITIONS.
- AREAS UNDER THE PANELS WILL BE BROADCAST SEED AS IT IS THE ONLY WAY TO GET THE SEED UNDER THE PANELS ONCE ERECTED.
- BROADCAST SEEDED AREAS WILL BE SCARIFIED AS FAR AS SITE CONDITIONS WILL ALLOW TO ENSURE BEST SEED TO SOIL CONTACT. EXTENT OF SCARIFICATION UNDER ARRAY PANELS WILL BE SUBJECT TO PANEL SUPPORT SYSTEM AND PANEL HEIGHT. SINGLE POST SUPPORT ALLOWS FOR OFFSET EQUIPMENT TO REACH UNDER PANELS TO SCARIFY THE SOIL (IF PANEL HEIGHT ALLOWS). DOUBLE POST SUPPORTS INHIBIT ACCESS UNDER THE PANELS FOR SCARIFICATION.

| **BOTANICAL NAME** | **COMMON NAME** |
|---|---|
| 34.00% FESTUCA RUBRA | CREEPING RED FESCUE |
| 33.00% FESTUCA OVINA, VARIETY NOT STATED | SHEEP FESCUE, VARIETY NOT STATED |
| 10.00% FESTUCA BREVIPLA, 'BEACON' | HARD FESCUE, 'BEACON' |
| 5.00% FESTUCA OVINA VAR. DURIUSCULA, GLADIATOR | HARD FESCUE, GLADIATOR |
| 5.00% FESTUCA OVINA VAR. GLAUCA, AZURE | BLUE FESCUE, AZURE |
| 5.00% POA PRATENSIS, 'KELLY' | KENTUCKY BLUEGRASS, 'KELLY' |
| 5.00% POA PRATENSIS, 'SHAMROCK' | KENTUCKY BLUEGRASS, 'SHAMROCK' |
| 3.00% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE | AUTUMN BENTGRASS, ALBANY PINE BUSY-NY ECOTYPE |
| **100.00%** | |

1 ERNMX 186-1 - NATIVE SOLAR FARM MIX
N.T.S.

# SUBSTATION SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL CONTACT ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DAUPHIN COUNTY CONSERVATION DISTRICT TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATION.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 E. SEQ. AND 287.1 ET SEQ.

BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS.

PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-253.

**FOR SUBSTATION SITE**

**0. THIS SEQUENCE IS INTENDED FOR SPECIFICALLY THE SUBSTATION SITE. EACH TRACT CAN BE CONSTRUCTED SIMULTANEOUSLY AND/OR INDEPENDENT OF ONE ANOTHER.**

1. FIELD MARK LIMIT OF DISTURBANCE AS DEPICTED ON THIS PLAN USING TEMPORARY CONSTRUCTION FENCING AND/OR PAINT.

2. INSTALL THE FOLLOWING EROSION AND SEDIMENT POLLUTION CONTROL BMP'S AS SHOWN ON THE PLAN:
   - MOBILIZE AND CONSTRUCT STAGING AREA.
   - PERFORM INITIAL CLEARING AND GRUBBING WHICH SHALL BE LIMITED TO THE AREAS NEEDED TO INSTALL THE PROPOSED PERIMETER BMP'S.
   - INSTALL ALTERNATIVE ROCK CONSTRUCTION ENTRANCE #1-4 AND TRACKING PADS WITH ASSOCIATED CONCRETE WASHOUT AREAS.
   - INSTALL COMPOST FILTER SOCKS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. PROVIDE IMMEDIATE STABILIZATION FOR TEMPORARY STOCKPILES.
   - INSTALL DIVERSION SOCKS #1-6.

3. INSTALL SEDIMENT BASINS #1-4, AS PER PLAN AND DETAILS
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALL OF THE BMP.**
   - ONLY LIMITED CLEARING AND GRUBBING IS PERMITTED FOR CONSTRUCTION OF ACCESS TO SEDIMENT BASIN.
   - INSTALL PERMANENT OUTFALL STRUCTURE, CONCRETE CRADLE, AND ASSOCIATED OUTFALL PIPE WITH ANTI-SEEP COLLAR AND OUTFALL STRUCTURE.
   - CONCRETE CRADLES SHALL BE INSTALLED ON OUTLET BARRELS FOR ALL SEDIMENT BASINS WITH GREATER THAN 10 ACRES OF CONTRIBUTING DRAINAGE AREA.
   - INSTALL SKIMMER WITH STONE LANDING BERM, SEDIMENT STORAGE DEWATERING FACILITY, CLEAN OUT STAKE, AND ASSOCIATED BAFFLES.
   - CONSTRUCT SEDIMENT BASIN EMBANKMENT WITH EMERGENCY SPILLWAY AND EXCAVATE TO GRADES ON PLAN, STABILIZE IMMEDIATELY WITH EROSION CONTROL MATTING AS INDICATED ON THE PLAN. PROVIDE TEMPORARY AND PERMANENT STABILIZATION AS NECESSARY.
   - THE BASIN IS TO BE FUNCTIONING PROPERLY PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS THE BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.

4. INSTALL VEGETATED SWALE #1 (SCM NO. 8 - POA009) (REFER TO PCSM DETAILS FOR SPECIFIC SCM SEQUENCE)
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE FINAL GRADING OF THE SWALE AND PRIOR TO STABILIZATION TO ENSURE PROPER DESIGN.**
   - CONSTRUCT SWALE FROM DOWNSTREAM TO UPSTREAM.
   - INSTALL EROSION CONTROL MATTING AS SHOWN ON THE PLAN IMMEDIATELY AFTER INSTALLATION IS COMPLETED.

5. GENERAL CONTRACTOR TO PERFORM UTILITY DIGS IN ORDER TO CONFIRM EXISTING DEPTHS/LOCATIONS PRIOR MAJOR EARTH DISTURBANCE ACTIVITIES, INCLUDING BUT NOT LIMITED TO EXISTING ELECTRIC, GAS, SANITARY SEWERS, STORM SEWERS AND WATER MAINS.

6. STRIP SITE. DEMOLISH REMAINING ITEMS NOTED TO BE REMOVED. (REFERENCE EXISTING CONDITIONS AND DEMOLITION PLANS)
   - OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE. ANY WATER TRAPPED IN LOW LYING AREA MUST BE PUMPED THROUGH A FILTER BAG.
   - AS SOON AS SLOPES AND OTHER DISTURBED AREAS REACH FINAL GRADE THEY MUST BE STABILIZED. PROVIDE TEMPORARY STABILIZATION UPON COMPLETION OR TEMPORARY CESSATION OF ALL EARTH DISTURBANCE ACTIVITIES OF AT LEAST FOUR (4) DAYS. TO AVOID AIRBORNE PARTICLE ISSUES, DUST CONTROL MEASURES SHOULD BE ENACTED. SPRINKLING AND IRRIGATION IS RECOMMENDED.

7. ROUGH GRADE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN, PROVIDE TEMPORARY STABILIZATION (FOR TEMPORARY STABILIZATION REQUIREMENTS REFER TO GENERAL CONSERVATION NOTES AND SPECIFICATIONS ON SHEET C-250 AND INSTALL EROSION CONTROL MATTING ON ALL AREAS GREATER THAN 3:1 AS PER DETAILS AND MANUFACTURES SPECIFICATIONS.
   - GRADING ACTIVITIES SHOULD BE AVOIDED DURING EXTREMELY WET CONDITIONS TO MINIMIZE SOIL COMPACTION, DEEP RUTTING AND SOIL SMEARING.

8. INSTALL STORM SEWERS A0-D1
   - CONSTRUCT NEW STORM SEWERS FROM DOWN STREAM TO UPSTREAM.
   - TRENCH ONLY AS FAR IN ONE DAY AS PIPE CAN BE INSTALLED IN THAT SAME PERIOD.
   - PLACE SOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY.
   - INSTALL RIPRAP APRONS #1-2.

10. EXCAVATE AND INSTALL REQUIRED ELECTRICAL UTILITIES.

11. INSTALL STONE DRIVES AND STONE EQUIPMENT PAD AREAS WITH ASSOCIATED EQUIPMENT AND SECURITY FENCING.

12. INSTALL INFILTRATION BASINS #1-4 (REFER TO PCSM DETAILS FOR SPECIFIC SCM SEQUENCE).
   - PRIOR TO THE INSTALLATION OF THE STORMWATER FACILITY, THE ENTIRE DRAINAGE AREA MUCH ACHIEVE A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA BEFORE PROCEEDING. DAUPHIN COUNTY CONSERVATION DISTRICT IS TO BE CONTACTED PRIOR TO THE INSTALLATION OF THE INFILTRATION BASIN.
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALLATION OF THE SCM.**
   - INSTALL PROPOSED STORM SEWER, CONCRETE CRADLE, AND HEADWALL AS SHOWN ON THE PLAN.
   - CONSTRUCT NEW STORM SEWERS FROM DOWN STREAM TO UPSTREAM. TRENCH ONLY AS FAR IN ONE DAY AS PIPE CAN BE INSTALLED IN THAT SAME PERIOD. PLACE SPOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY. INSTALL ASSOCIATED RIPRAP APRONS #1-2.
   - AFTER INSTALLATION OF PERMANENT SCM FACILITY, INSTALL COMPOST FILTER SOCK AROUND THE ENTIRE FACILITY, AS SHOWN ON THE PLAN.

13. PERFORM FINAL GRADING. STABILIZE IMMEDIATELY.
   - RESPREAD TOPSOIL. SEED AREAS AS DESIGNATED PER THE SEEDING SPECIFICATIONS. PERMANENT SEEDING WITH NATIVE SEED WILL BE APPLIED BY BROADCASTING.
   - TO ASSURE RAPID STABILIZATION, ADDITIONAL SUPPLEMENTAL SEEDING SHALL BE PLACED WHERE COVERAGE IS LESS THAN 70%.
   - INSTALL FINAL VEGETATION INCLUDING SOD, LANDSCAPING AND TREES.

15. UPON STABILIZATION (ONCE ALL AREAS ARE COVERED WITH A STAND OF GRASS AT LEAST 70 PERCENT PERENNIAL/VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION) AND BEFORE ANY TEMPORARY BMPS ARE REMOVED, THE DAUPHIN COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED. UPON APPROVAL FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL FACILITIES AND DEMOBILIZE. IMMEDIATELY REPAIR AND STABILIZE ANY DISTURBANCE ASSOCIATED WITH SEDIMENT CONTROL REMOVAL.

16. **CLEAR SITE OF ALL UNWANTED MATERIAL. OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL ONSITE MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE.**

| **BOTANICAL NAME** | **COMMON NAME** |
|---|---|
| 20.00% PANICUM CLANDESTINUM, TIOGA | DEERTONGUE, TIOGA |
| 20.00% PUCCINELLIA DISTANS, FULTS | ALKALIGRASS, FULTS |
| 18.00% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE | VIRGINIA WILDRYE, MADISON-NY ECOTYPE |
| 15.00% AGROSTIS STOLONIFERA, 'PENNCROSS' | CREEPING BENTGRASS, 'PENNCROSS' |
| 15.00% POA PALUSTRIS | FOWL BLUEGRASS |
| 10.00% CAREX VULPINOIDEA, PA ECOTYPE | FOX SEDGE, PA ECOTYPE |
| 1.00% CAREX SCOPARIA, PA ECOTYPE | BLUNT BROOM SEDGE, PA ECOTYPE |
| 1.00% JUNCUS EFFUSUS | SOFT RUSH |
| **100.00%** | |

2 ERNMX 126 - RETENTION BASIN FLOOR MIX
N.T.S.

# GENERAL ON-SITE SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL CONTACT ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DAUPHIN COUNTY CONSERVATION DISTRICT TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATION.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT.

LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF ELECTRIC UTILITY LINE PLACEMENT AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 E. SEQ. AND 287.1 ET SEQ.

BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS.

PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-253.

**STAGE**

**0. THIS SEQUENCE IS INTENDED FOR EACH TRACK THAT WILL BE IMPROVED WITH SOLAR PANELS. EACH TRACT CAN BE CONSTRUCTED SIMULTANEOUSLY AND/OR INDEPENDENT OF ONE ANOTHER. GC TO MAKE SURE TO REVIEW PNDI AVOIDANCE MEASURES TO ENSURE ALL TIME FRAMES OF WHEN CERTAIN TYPES OF WORK CAN AND CANNOT BE PERFORMED.**

1. FIELD MARK LIMIT OF DISTURBANCE AS DEPICTED ON THIS PLAN USING TEMPORARY CONSTRUCTION FENCING AND/OR PAINT.
   - FIELD MARK THE WETLANDS WITHIN LOD WITH ORANGE CONSTRUCTION FENCE.

2. INSTALL THE FOLLOWING EROSION AND SEDIMENT POLLUTION CONTROL BMP'S AS SHOWN ON THE PLAN:
   - INSTALL ALTERNATE ROCK CONSTRUCTION ENTRANCES #1-4 AND TRACKING PADS WITH ASSOCIATED CONCRETE WASHOUT AREAS.
   - MOBILIZE AND CONSTRUCT STAGING AREA.
   - PERFORM INITIAL CLEARING AND GRUBBING WHICH SHALL BE LIMITED TO THE AREAS NEEDED TO INSTALL THE PROPOSED PERIMETER BMP'S.
   - INSTALL COMPOST FILTER SOCKS AND COMPOST FILTER SOCK SEDIMENT TRAPS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS LOCATED ON SHEET C-255. CONSTRUCT COMPOST FILTER SOCK SEDIMENT TRAPS AS SHOWN PER PLANS AND DETAILS LOCATED ON SHEET C-255. PROVIDE IMMEDIATE STABILIZATION FOR TEMPORARY STOCKPILES.
   - INSTALL DIVERSION PIPES, OUTLETS (IF APPLICABLE) AND CONCRETE CRADLES ON ALL TEMPORARY PIPING (OR APPROVED EQUIVALENT)
   - INSTALL DIVERSION SOCKS #1-7.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS TO BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.

3. GC TO PERFORM UTILITY DIGS IN ORDER TO CONFIRM EXISTING DEPTHS/LOCATIONS PRIOR MAJOR EARTH DISTURBANCE ACTIVITIES, INCLUDING BUT NOT LIMITED TO EXISTING ELECTRIC, GAS, SANITARY SEWERS, STORM SEWERS AND WATER MAINS.

4. CONSTRUCT TEMPORARY SEDIMENT BASINS #1-4 AS SHOWN PER PLANS AND DETAILS
   - ONLY LIMIT CLEARING AND GRUBBING AREAS TO ALLOW FOR INSTALLATION OF BMP FACILITIES.
   - EXCAVATE TO GRADES AS SHOWN ON THE PLANS AND CONSTRUCT BASIN EMBANKMENT WITH EMERGENCY SPILLWAYS. STABILIZE IMMEDIATELY.
   - INSTALL PERMANENT RISERS, PIPING , AND RIPRAP.
     --- INSTALL ANTI-SEEP COLLARS FOR SEDIMENT BASINS #1 AND #4 ONLY.
   - CONCRETE CRADLES SHALL BE INSTALLED ON OUTLET BARRELS FOR ALL SEDIMENT BASINS WITH GREATER THAN 10 ACRES OF CONTRIBUTARY DRAINAGE AREA.
   - INSTALL SKIMMER WITH STONE LANDINGS BERM, SEDIMENT STORAGE DEWATERING FACILITY, TURBIDITY BARRIERS AND CLEAN OUT STAKE.
   - THE TEMPORARY SEDIMENT BASINS ARE TO BE STABILIZED AND FUNCTIONING PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES.
   - ONCE ALL E&S BMPS WITHIN A PARCEL ARE INSTALLED, THE DAUPHIN COUNTY CONSERVATION DISTRICT IS THE BE CONTACTED BEFORE PROCEEDING WITH EARTHMOVING.

5. ROUGH GRADE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN, PROVIDE TEMPORARY STABILIZATION (FOR TEMPORARY STABILIZATION REQUIREMENTS REFER TO GENERAL CONSERVATION NOTES AND SPECIFICATIONS AND SEEDING SPECIFICATIONS ON SHEET C-250 AND INSTALL EROSION CONTROL MATTING ON CRITICAL AREAS WHERE SHOWN AS PER PLANS, DETAILS AND MANUFACTURES SPECIFICATIONS.
   - IF EXISTING FIELD TILES ARE ENCOUNTERED DURING CONSTRUCTION, GC TO WORK WITH LOCAL TILE CONTRACTOR TO REPAIR ANY DAMAGED TILES AS NECESSARY TO PRE-EXISTING CONDITIONS.
   - EXISTING ROW CROP FIELDS WILL BE TREATED THE SAME AS ALL OTHER SITES AND PREPARED FOR SOLAR PANELS IN SIMILAR FASHION.
   - ALL AREAS WITHIN LOD WILL BE STABILIZED WITH THE SPECIFIED PERMANENT SEED MIXTURES.
   - ALL NON-GRADED, BUT UN-STABILIZED AREAS, INCLUDING PAST AGRICULTURAL AREAS WITHIN THE SITE BOUNDARY WILL BE STABILIZED WITH PERMANENT SEED MIX.

6. GRADING ACTIVITIES SHOULD BE AVOIDED DURING EXTREMELY WET CONDITIONS TO MINIMIZE SOIL COMPACTION, DEEP RUTTING AND SOIL SMEARING AS DETERMINED BY THE FIELD PROJECT MANAGER.

7. AS NECESSARY, USE DISKS, TILLERS, OR HARROWS TO BREAK UP THE SURFACE WHERE SOIL HAS BECOME COMPACTED DURING CONSTRUCTION ACTIVITIES IN ORDER TO CREATE VIABLE SEED BEDS AS DETERMINED BY THE FIELD PROJECT MANAGER TO ENSURE SEED WILL TAKE PROPERLY.

8. AS SOON AS ANY CONSTRUCTION ACTIVITY IS COMPLETE (APPLY A COVER CROP) OR WORK IN AN AREA IS PUT ON HOLD (APPLY STRAW MULCH VIA CRIMPING) TO REDUCE THE RISK OF SOIL EROSION ON THE SITE TO AREAS THAT WILL NOT BE ACTIVELY GRADED. ALLOW FOR A MINIMUM ESTABLISHMENT PERIOD OF FOUR DAYS. REFER TO THE SEEDING SPECIFICATIONS ON SHEET C-250. THIS COVER CROP WILL ESTABLISH QUICKLY, PROVIDING ADDITIONAL EROSION CONTROL THROUGHOUT CONSTRUCTION, ALONG WITH PROTECTION OF FINAL NATIVE VEGETATION DURING ITS ESTABLISHMENT PERIOD.

9. INSTALL THE PERIMETER FENCING LEAVING SECTIONS OPEN FOR INGRESS/EGRESS.

10. FOUNDATION PILE DRIVING AND TRENCHING FOR UNDERGROUND UTILITIES SHALL BE STAGED TO CONCENTRATE WORK IN PHASES, TO REDUCE SITE DISTURBANCE. THE STAGING WILL DEPEND ON SITE PROGRESS AND WILL EXCLUDE ALL TEMPORARY SEDIMENT BASIN AREAS WHERE PROPOSED ARRAYS ARE LOCATED. TYPICALLY PILES WILL BE INSTALLED IN THE FOLLOWING MANNER:
   - PILES TO BE LAID OUT PRIOR TO INSTALLATION.
   - EACH PILE IS FIELD VERIFIED FOR LOCATION AND ORIENTATION PRIOR TO INSTALL.
   - EQUIPMENT WILL THEN COMMENCE PILE DRIVING INSTALLATION.
   - AFTER PILE INSTALLATION COMPLETE INSTALL UNDERGROUND ELECTRIC CONDUIT.
     -- TRENCH ONLY AS FAR IN ONE DAY AS ELECTRIC CONDUIT CAN BE INSTALLED IN THAT SAME PERIOD.
     -- PLACE SOIL UPSLOPE OF THE TRENCH. BACKFILL TRENCH AND STABILIZE IMMEDIATELY.
   - MOUNT THE PANELS
   - REFER TO OFF-SITE SEQUENCE OF CONSTRUCTION FOR OFF-SITE CABLE INSTALLATION/TIE IN TO PROPOSED ARRAY AREAS.

11. THROUGHOUT CONSTRUCTION OF THE ARRAY, CONTINUOUSLY SEED WITH COVER CROP IN AREAS WHERE WORK IS PAUSED OR COMPLETED.

12. PERFORM FINAL GRADING AND STABILIZATION FOR EACH PROPERTY AS FINAL CONSTRUCTION ACTIVITIES ARE COMPLETED (I.E. NOT AS A WHOLE FOR THE PROJECT AT ONE TIME, EACH PROPERTY PHASED AS THEY ARE COMPLETED) EXCLUDING ALL TEMPORARY SEDIMENT BASIN AREAS WHERE PROPOSED ARRAYS ARE LOCATED.
   - RESPREAD TOPSOIL A MIN. OF 6". REFER TO TOPSOIL APPLICATION NOTES ON SHEET C-350.
   - INSTALL AMENDED SOILS. REFERENCE THE POST CONSTRUCTION STORMWATER MANAGEMENT PLANS ON SHEET C-350 FOR AMENDED SOIL SPECIFIC SEQUENCE OF CONSTRUCTION.
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE EXCAVATION/ PREPARATION/ INSTALLATION OF THE BMP.**
   - SEED AREAS AS DESIGNATED PER THE SEEDING SPECIFICATIONS INSTALLATION INSTRUCTIONS.
   - TO ASSURE RAPID STABILIZATION, ADDITIONAL SUPPLEMENTAL SEEDING SHALL BE PLACE WHERE COVERAGE IS LESS THAN 70%.
   - INSTALL FINAL VEGETATION LANDSCAPING AND TREES ASSOCIATED WITH THE REVEGETATE USING NATIVE SPECIES BMP.
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO VERIFY THAT THE PROPOSED TREES/PLANTINGS USED FOR THE LANDSCAPE RESTORATION CREDITS HAVE BEEN PLANTED.**

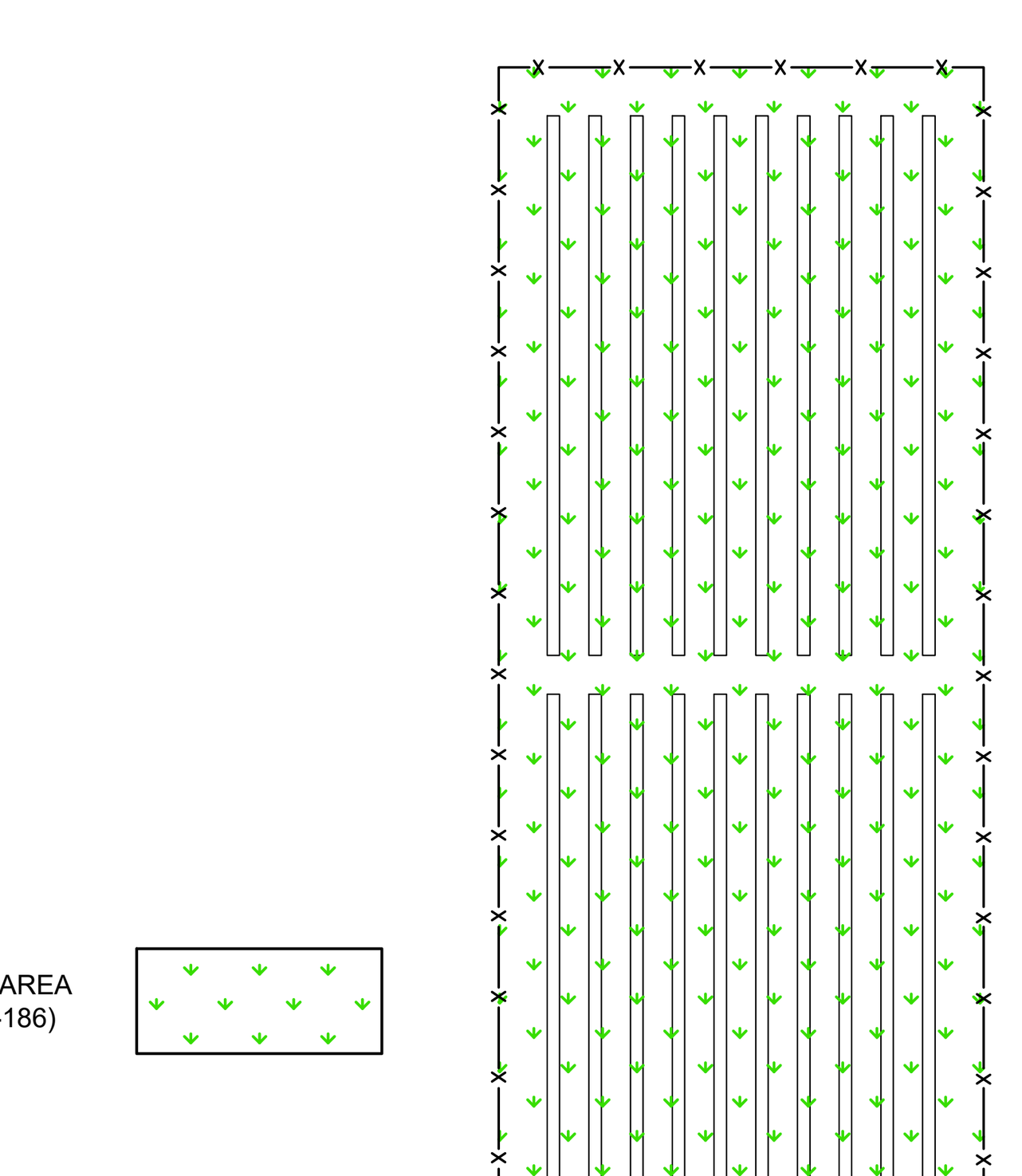
13. REMOVE TEMPORARY SEDIMENT BASINS AND GRADE TO FINAL DESIGN AS SHOWN ON THE PCSM PLANS.
   - PRIOR TO THE REMOVAL, THE ENTIRE DRAINAGE AREA ASSOCIATED WITH EACH BASIN SHALL MUST ACHIEVE A MINIMUM OF 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA BEFORE PROCEEDING.
   - DEWATER THE SEDIMENT BASIN USING THE SEDIMENT DEWATERING FACILITY.
   - REMOVE ALL ACCUMULATED SEDIMENT FROM THE BASIN. SEDIMENT SHOULD BE SPREAD OUT AND INCORPORATED INTO THE ON-SITE SOILS.
   - REMOVE ALL TEMPORARY BMP'S ASSOCIATED WITH THE FACILITY INCLUDING (BUT NOT LIMITED TO) BAFFLES, CLEAN OUT STAKE, SKIMMER WITH STONE LANDING BERM, DIVERSION SOCK. SEDIMENT DEWATERING FACILITY, CMP RISER, TEMPORARY STORMWATER PIPE, CONCRETE CRADLES, AND RIPRAP ARPON.
   - **(CRITICAL STAGE) A LICENSED PROFESSIONAL SHALL BE ON-SITE TO OVERSEE THE DECOMMISSIONING OF THE TEMPORARY BMP.**
   - PERFORM FINAL GRADING, SEEDING AND STABILIZATION.
   - INSTALL REMAINING ARRAY PILE, PANELS AND SITE PERIMETER FENCING.

14. REMOVE TEMPORARY STORMWATER BYPASS FACILITIES AND RESTORE GRADING TO FINAL DESIGN AS SHOWN ON THE PCSM PLANS
   - PRIOR TO THE REMOVAL, THE ENTIRE DRAINAGE AREA ASSOCIATED WITH EACH TEMPORARY STORM SYSTEM MUST ACHIEVE A MINIMUM OF 70% PERENNIAL VEGETATIVE COVER OVER THE DISTURBED AREA BEFORE PROCEEDING
   - REMOVE ALL TEMPORARY DIVERSION SOCKS ASSOCIATED WITH THE HEADWALLS FOR EACH TEMPORARY STORM SYSTEM. STABILIZE IMMEDIATELY AS NECESSARY
   - TEMPORARY PIPES FOR EACH FACILITY SHALL BE REMOVED. LIMIT ADVANCED TRENCHING, PIPE REMOVAL AND BACKFILLING THAT CAN BE COMPLETED IN THE SAME DAY
   - DISTURBED AREAS SHALL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
   - SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING BACKFILLING.

15. UPON SITE STABILIZATION (ONCE ALL AREAS ARE COVERED WITH A STAND OF GRASS AT LEAST 70 PERCENT PERENNIAL/VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION) AND BEFORE ANY TEMPORARY BMP'S ARE REMOVED, THE DAUPHIN COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED. UPON APPROVAL FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL FACILITIES AND DEMOBILIZE. IMMEDIATELY REPAIR AND STABILIZE ANY DISTURBANCE ASSOCIATED WITH SEDIMENT CONTROL REMOVAL.

16. **CLEAR SITE OF ALL UNWANTED MATERIAL. OPERATOR SHALL REMOVE FROM SITE, RECYCLE OR DISPOSE OF ALL ONSITE MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT R, E, GULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE AND BUILDING MATERIAL OR WASTE AT THIS SITE.**

17. **FINAL SITE INSPECTION WITH ENGINEER OF RECORD AND PERMITTEE TO BE PERFORMED. AFTER FINAL INSPECTION AND ONCE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED, A NOTICE OF TERMINATION APPLICATION SHALL BE SUBMITTED TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP).**




3 TYPICAL SEEDING DETAIL FOR SOLAR ARRAYS AREAS
N.T.S.

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

Kimley»Horn
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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES

G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY PA

SHEET NUMBER
C-350

Plotted By: Zuabi, Wafaa Sheet Set: G Morris Solar Layout: C-350 January 29, 2026 01:52:31pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-350 POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

| Soil Type | Map Unit Symbol | Depth to Saturated Zone / Seasonal High Water Table (in.) | Depth to Bedrock - Fragipan (in.) | Depth to Bedrock - Lithic (in.) | Hydrologic Soils Group | Cutbanks Cave | Corrosive To Concrete\Steel | Droughty | Easily Erodible | Flooding | Hydric / Hydric Inclusions | Low Strength / Landslide Prone | Slow Percolation | Piping | Poor Source of Topsoil | Frost Action | Shrink - Swell | Potential Sinkhole | Ponding | Wetness |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albrights silt loam, 0 to 3 percent slopes | AbA | 17 | 17 | 60 | C/D | X | C/S | X | X |  | X | X | X | X | X | X |  |  |  | X |
| Albrights silt loam, 3 to 10 percent slopes, moderately eroded | AbB2 | 17 | 17 | 60 | C/D | X | C/S | X | X |  | X | X | X | X | X | X |  |  |  | X |
| Atkins silt loam | At | 0 | >80 | 60 | B/D | X | C/S |  |  | X | X | X | X | X | X | X |  |  |  | X |
| Basher silt loam | Bc | 18 | >80 | 72 | B/D | X | C/S |  |  | X | X | X | X | X | X | X |  |  |  | X |
| Brinkerton and Armagh silt loams, 0 to 3 percent slopes | BtA | 0 | 11 | 40 | C/D | X | C/S | X | X |  | X | X | X | X | X | X | X |  |  | X |
| Brinkerton and Armagh silt loams, 3 to 8 percent slopes, moderately eroded | BtB2 | 0 | 11 | 40 | C/D | X | C/S | X | X |  | X | X | X | X | X | X | X | X | X | X |
| Calvin-Klinesville shaly silt loams, 8 to 15 percent slopes, moderately eroded | CkC2 | >80 | >80 | 10 | B/D | X | C | X | X |  | X |  |  | X |  | X |  |  |  | X |
| Calvin-Klinesville shaly silt loams, 15 to 25 percent slopes, moderately eroded | CkD2 | >80 | >80 | 10 | B/D | X | C | X | X |  | X |  |  | X |  | X |  |  |  | X |
| Calvin-Leck Kill shaly silt loams, 0 to 3 percent slopes | CIA | >80 | >80 | 20 | A/B | X | C | X | X |  | X |  |  | X |  | X |  |  |  | X |
| Calvin-Leck Kill shaly silt loams, 3 to 8 percent slopes, moderately eroded | CIB2 | >80 | >80 | 20 | A/B | X | C | X | X |  | X |  |  | X |  | X |  |  |  | X |
| Calvin-Leck Kill shaly silt loams, 8 to 15 percent slopes, moderately eroded | CIC2 | >80 | >80 | 20 | A/B | X | C | X | X |  | X |  |  | X |  | X |  |  |  | X |
| Comly silt loam, 2 to 8 percent slopes, moderately eroded | CoB2 | 18 | 20 | 44 | C | X | C/S | X | X |  | X |  |  | X | X | X |  |  |  |  |
| Dekalb channery sandy loam, 3 to 8 percent slopes, moderately eroded | DcB2 | >80 | >80 | 20 | A | X | C | X |  |  |  | X | X | X | X | X |  |  |  |  |
| Dekalb and Lehew very stony sandy loams, 25 to 80 percent slopes | DIF | >80 | >80 | 20 | A | X | C | X |  |  |  | X | X | X | X | X |  |  |  |  |
| Klinesville shaly silt loam, 15 to 25 percent slopes, moderately eroded | KaD2 | >80 | >80 | 10 | D | X | C/S | X | X |  | X |  | X |  | X | X |  |  |  |  |
| Klinesville shaly silt loam, 25 to 50 percent slopes, moderately eroded | KaE2 | >80 | >80 | 10 | D | X | C/S | X | X |  | X |  | X |  | X | X |  |  |  |  |
| Laidig gravelly loam, 3 to 8 percent slopes, moderately eroded | LaB2 | 28 | 30 | >80 | B | X | C/S | X | X |  | X | X | X | X | X | X |  |  |  |  |
| Laidig very stony loam, 0 to 8 percent slopes | LdB | 30 | 28 | >80 | B | X | C/S | X | X |  | X | X | X | X | X | X |  |  |  |  |
| Laidig very stony loam, 8 to 25 percent slopes | LdD | 30 | 28 | >80 | B | X | C/S | X | X |  | X | X | X | X | X | X |  |  |  |  |

* SOIL INFORMATION HAS BEEN OBTAINED FROM THE WEB SOIL SURVEY WHICH IS OPERATED BY THE USDA NATIONAL RESOURCES CONSERVATION SERVICE.

## SOIL LIMITATIONS AND RESOLUTIONS

1. SEASONAL HIGH WATER TABLE LIMITATION - DURING CONSTRUCTION PONDING WATER NEEDS TO BE PUMPED TO A SEDIMENT FILTER BAG OR OTHER SEDIMENT CONTROL BMP.
2. BEDROCK LIMITATION - INFORM CONTRACTOR
3. CUTBANKS CAVE - GC TO USE CAUTION WHEN TRENCHING. ALL APPLICABLE OSHA STANDARDS AND REGULATIONS MUST BE IMPLEMENTED AT ALL TIMES.
4. CORROSIVE TO CONC./STEEL - GC TO PROVIDE TREATMENT TO ALL MATERIALS TO PREVENT CORROSION. (INCLUDING BUT NOT LIMITED TO: PAINTS, TARS, ETC..)
5. DROUGHTY - PROVIDE WATER TRUCK FOR IRRIGATION.
6. EASILY ERODIBLE - PROVIDE TEMPORARY/PERMANENT STABILIZATION MEASURES AS NEEDED.
7. FLOODING - DURING CONSTRUCTION PONDING WATER NEEDS TO BE PUMPED TO A SEDIMENT FILTER BAG OR OTHER SEDIMENT CONTROL BMP.
8. HYDRIC - UTILIZE PUMPED WATER FILTER BAG WHEN WET SOILS ARE ENCOUNTERED.
9. LOW STRENGTH/LANDSLIDE PRONE - GC TO PROVIDE EROSION CONTROL MATTING ON SLOPES GREATER THAN 3:1 AND TAKE PRECAUTION TO AVOID OVERLOADING THE SOILS.
10. SLOW PERCOLATION - GC TO FENCE OFF INFILTRATION AREAS TO AVOID EXCESSIVE COMPACTION DURING CONSTRUCTION.
11. PIPING - GC TO PROVIDE SUMP PUMP OR INSTALL UNDERDRAIN TO CONVEY PIPING FLOWS TO A BMP.
12. POOR SOURCE OF TOPSOIL - GC TO PROVIDE TOPSOIL AS NEEDED.
13. FROST ACTION - WHEN SOILS WARRANT, PROVIDE UNDERDRAIN TO REMOVE EXCESSIVE WATER.
14. SHRINK/SWELL - CONTRECTOR TO IMPORT/EXPORT MATERIAL AS NEEDED. REFER TO ALL REGULATIONS FOR CLEAN FILL AND EXPORT REQUIREMENTS.
15. POTENTIAL SINKHOLE - INFORM ENGINEER IMMEDIATELY AND FILL SINKHOLE PER CHAPTER 17 OF PA E&S MANUAL.
16. PONDING - UTILIZE PUMPED WATER FILTER BAG WHEN PONDING IS ENCOUNTERED.
17. WETNESS - WHEN WET SOILS ARE ENCOUNTERED UTILIZE PUMPED WATER FILTER BAG TO DEWATER.

## FILL MATERIALS

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL RESIDE WITH THE OPERATOR.

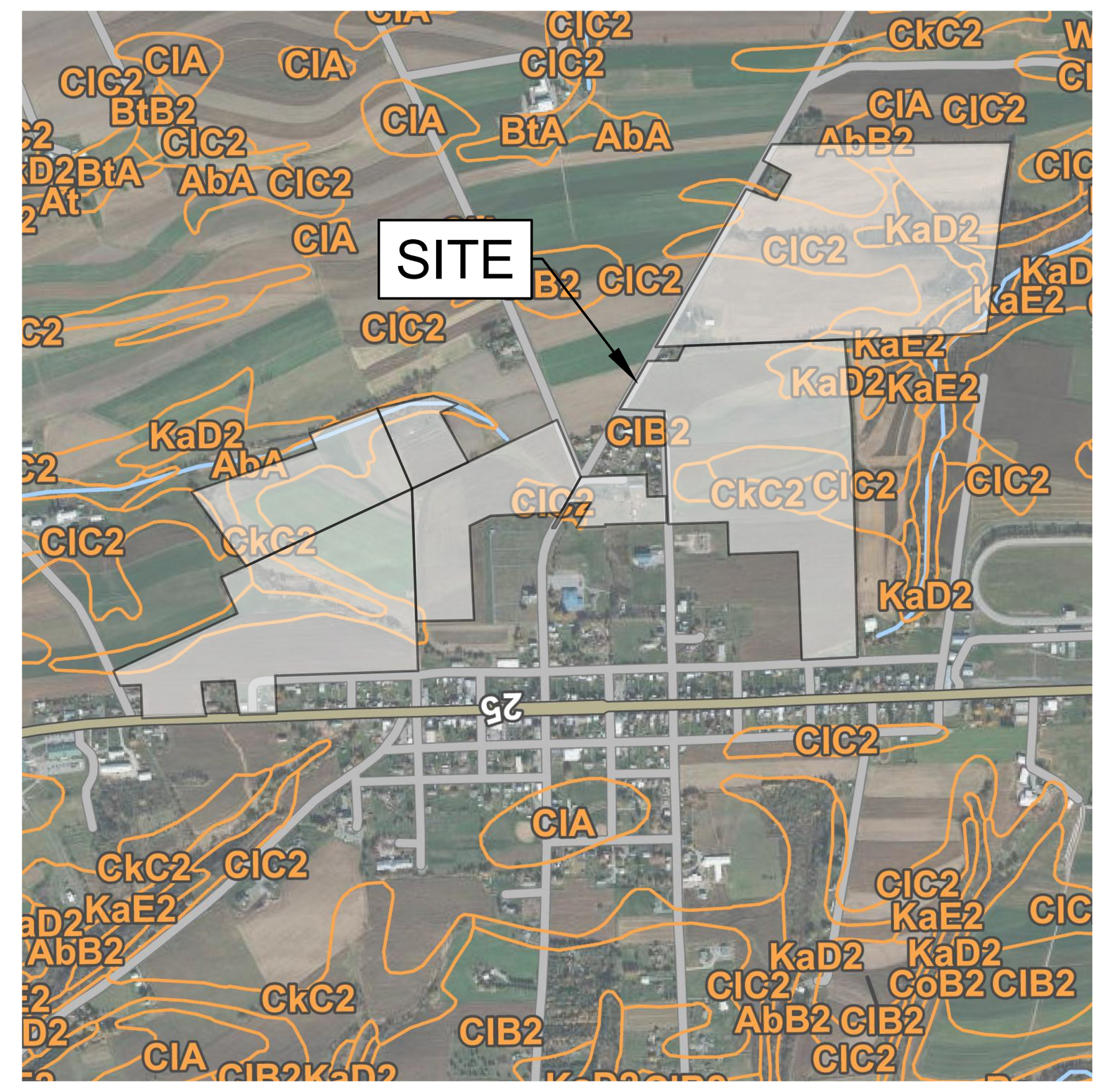
CLEAN FILL: IS DEFINED AS UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. MAXIMUM PARTICLE SIZE IS 3 INCHES FOR STRUCTURAL FILL, AND 6 INCHES FOR GENERAL FILL PER THE GEOTECHNICAL REPORT BY TERRACON. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

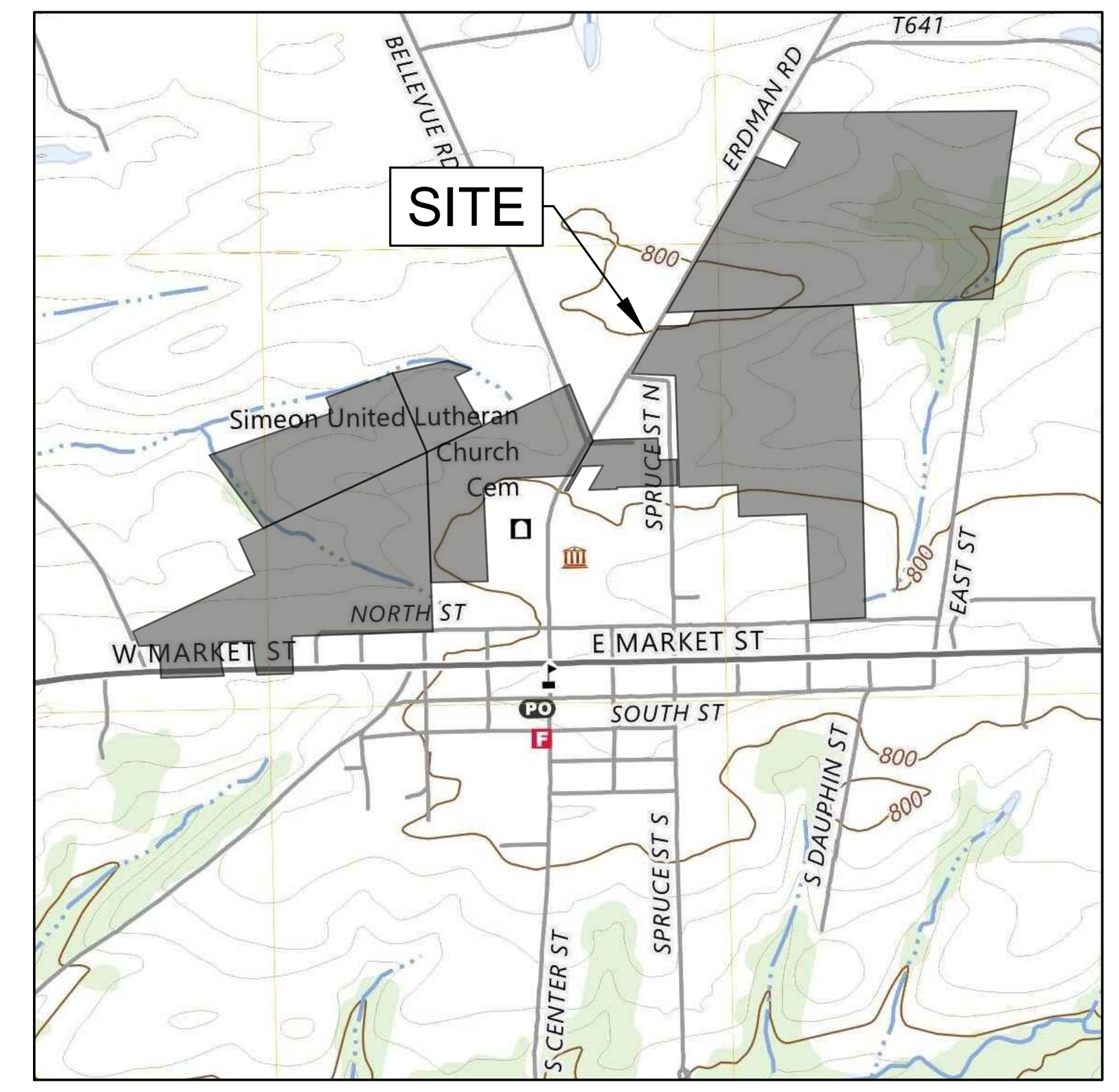
FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

## CONSERVATION PRACTICES

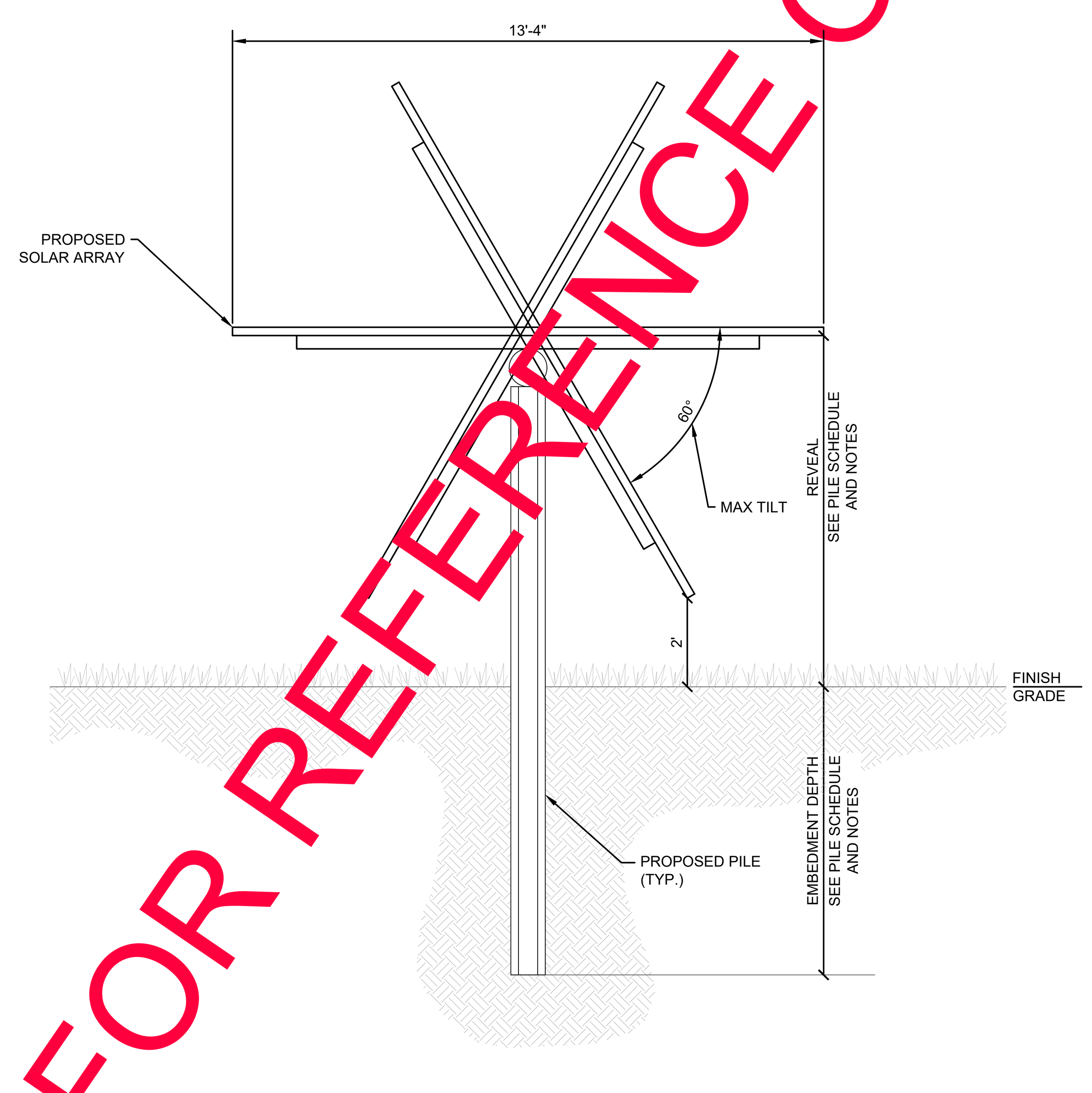
1. PROTECTION OF VEGETATION FROM MECHANICAL INJURY. WHERE EARTHWORK, GRADING, OR CONSTRUCTION ACTIVITIES WILL TAKE PLACE IN OR ADJACENT TO WOODLANDS, OLD FIELDS OR OTHER SIGNIFICANT VEGETATION OR SITE FEATURES, THE LIMIT OF DISTURBANCE SHAL BE DELINEATED AND VEGETATION PROTECTED THROUGH INSTALLATION OF TEMPORARY FENCING OR OTHER APPROVED MEASURES. SUCH FENCING SHALL BE INSTALLED PRIOR TO COMMENCING OF AND SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION ACTIVITY.
2. PROTECTION OF VEGETATION FROM GRADING CHANGE. GRADE CHANGES TO OCCUR AT ANY LOCATION OF THE PROPERTY SHALL NOT RESULT IN AN ALTERATION TO SOIL OR DRAINAGE CONDITIONS WHICH WOULD ADVERSELY AFFECT EXISTING VEGETATION TO BE RETAINED FOLLOWING SITE DISTURBANCE, UNLESS ADEQUATE PROVISIONS ARE MADE TO PROTECT SUCH VEGETATION AND ITS ROOT SYSTEMS.
3. PROTECTION OF VEGETATION FROM EXCAVATIONS
   3.1. WHEN DIGGING TRENCHES FOR UTILITY LINES OR SIMILAR USES, DISTURBANCES TO THE ROOT ZONES OF ALL WOODY VEGETATION SHALL BE MINIMIZED.
   3.2. IF TRENCHES MUST BE EXCAVATED IN THE ROOT ZONE, ALL DISTURBED ROOTS SHALL BE CUT AS CLEANLY AS POSSIBLE. THE TRENCH SHALL BE BACKFILLED AS QUICKLY AS POSSIBLE.
4. PROTECTION OF TOPSOIL
   4.1. NO TOPSOIL SHALL BE REMOVED FROM THE SITE DURING DEVELOPMENT AND CONSTRUCTION.
   4.2. PRIOR TO GRADING OPERATIONS OR EXCAVATION, TOPSOIL IN THE AREA TO BE DISTURBED SHALL BE REMOVED AND STORED ON SITE.
   4.3. TOPSOIL REMOVED SHALL BE REDISTRIBUTED AND STABILIZED AS QUICKLY AS POSSIBLE FOLLOWING THE ESTABLISHMENT OF REQUIRED GRADES FOR A PROJECT OR PROJECT PHASE. ALL EXPOSED EARTH SURFACES SHALL BE STABILIZED BY HYDROSEEDING ON SLOPES OF LESS THAN TEN PERCENT, AND BY SODDING, HYDROSEEDING, OR RIP-RAP ON SLOPES EXCEEDING TEN PERCENT.
   4.4. GRADING AND EARTHMOVING OPERATIONS SHALL BE SCHEDULED TO MINIMIZE SITE DISTURBANCE DURING THE PERIOD FROM NOVEMBER 1 TO APRIL 1, WHEN REVEGETATION OF EXPOSED GROUND IS DIFFICULT.
   4.5. A TARGET MINIMUM TOPSOIL DEPTH ACROSS THE ENTIRE DEVELOPMENT OF FOUR (4) INCHES IS DESIRABLE. EACH LOT WITHIN THE DEVELOPMENT SHALL BE PROVIDED WITH ADEQUATE TOPSOIL FOR SITE STABILIZATION AND THE ESTABLISHMENT OF A HEALTHY LAWN THROUGH SELF-SUFFICIENCY.




SOILS MAP
(USGS SOILS MAP AERIAL IMAGERY)
SCALE: 1" = 1,500'



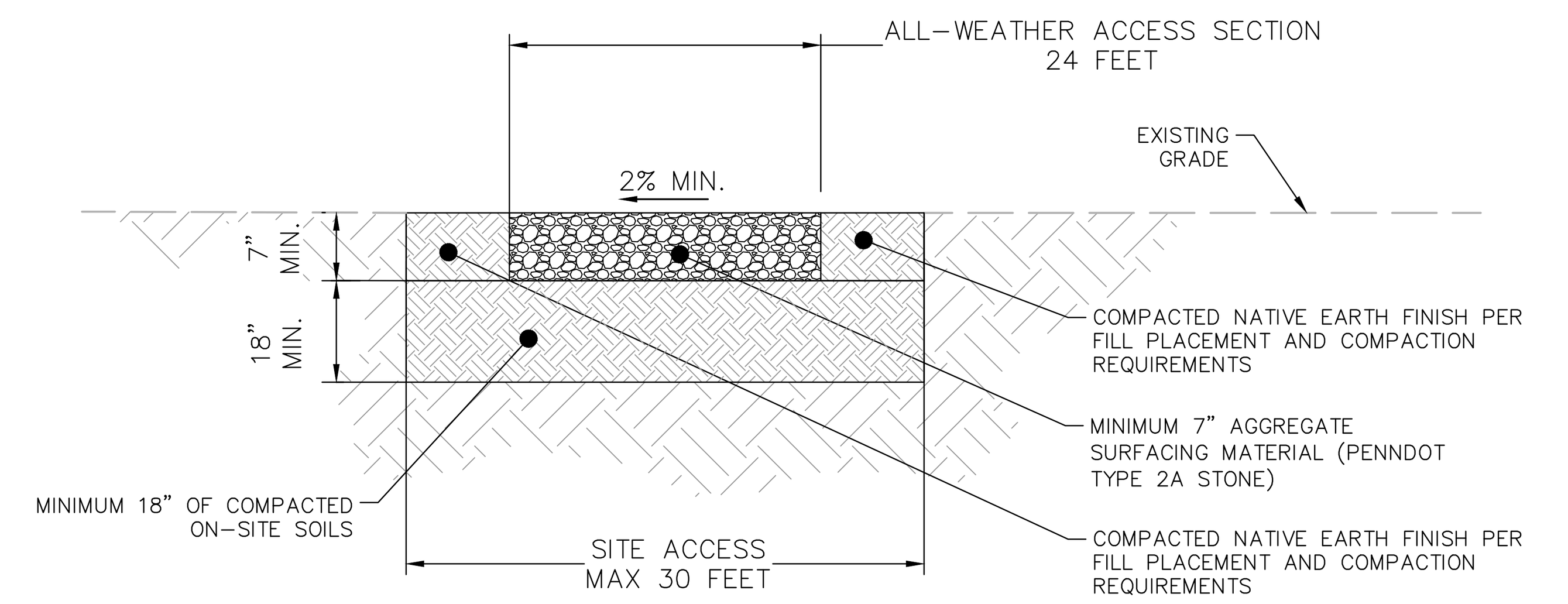

USGS MAP
(LYKENS, PA)
SCALE: 1" = 1,500'




1 SOLAR ARRAY (TYP.)
N.T.S.

## RECYCLING & PROPER DISPOSAL OF MATERIALS (PCSM SCMs)

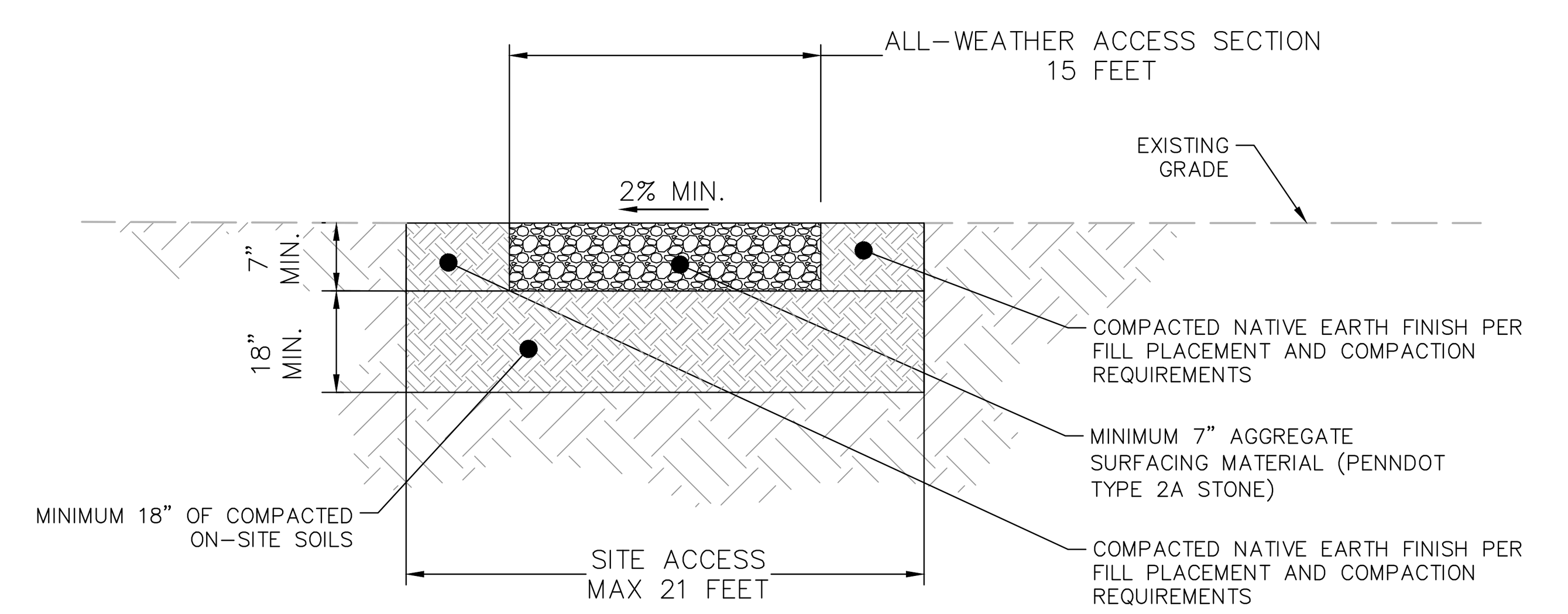
1. PERMITTEES AND INDIVIDUALS RESPONSIBLE FOR LONG-TERM O&M OF THE PCSM SCMS MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO MANAGE WASTE MATERIALS. ALL WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH DEP'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260A (RELATING TO HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL), CHAPTER 271 (RELATED TO MUNICIPAL WASTE MANAGEMENT - GENERAL PROVISIONS), AND CHAPTER 287 (RELATING TO RESIDUAL WASTE MANAGEMENT - GENERAL PROVISIONS). NO WASTES SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE. RECYCLING OF WASTES IS PREFERRED RATHER THAN DISPOSAL.
2. POST-CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, SEDIMENT, TRASH, DEBRIS, ETC., THAT COULD ADVERSELY IMPACT THE FUNCTIONALITY OF THE SCMS AND WATER QUALITY OF STORMWATER DISCHARGES. MEASURES SHALL BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL.
3. SEDIMENT REMOVED FROM PCSM SCMS DURING MAINTENANCE ACTIVITIES IS CONSIDERED FILL. THE DEP MANAGEMENT OF FILL POLICY SHOULD BE REFERENCED TO IDENTIFY WHETHER MATERIAL IS CLEAN OR REGULATED FILL AND THE APPROPRIATE METHOD OF DISPOSAL FOR EACH. CLEAN FILL CAN BE DISPOSED OF ONSITE IN LANDSCAPED AREAS AND SHALL BE IMMEDIATELY PERMANENTLY STABILIZED, OR DISPOSED OF ON A SITE WITH AN ACTIVE E&S PLAN OR NPDES PERMIT. SMALL AMOUNTS OF SEDIMENT MAY BE DISPOSED OF WITH COLLECTED TRASH AND DEBRIS. REGULATED FILL SHALL BE DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS, 25 PA. CODE § 271.2 AND § 287.2, RESPECTIVELY, WHICHEVER IS APPLICABLE.
4. MATERIAL REMOVED FROM STORM INLETS AND THEIR WATER QUALITY DEVICES NORMALLY CONTAINS A COMBINATION OF SEDIMENT, TRASH, AND ORGANIC DEBRIS (DETRITUS), AND SHALL BE DISPOSED OF IN ACCORDANCE WITH ACCEPTABLE WASTE MANAGEMENT PRACTICES. IN LOCATIONS WHERE HYDROCARBONS AND HEAVY METALS MAY BE PREVALENT IN WASTE MATERIAL SUCH AS GAS STATIONS, LOGISTICS OR DISTRIBUTION CENTERS, TRUCK TERMINALS OR OTHER HIGH TRAFFIC AREAS, WASTE MATERIAL SHALL BE DISPOSED OF IN A LANDFILL. IN LOWER TRAFFIC OR NON-TRAFFIC LOCATIONS WHERE THE WASTE MATERIAL MAY BE MOSTLY DETRITUS, IT SHALL BE RECYCLED TO THE EXTENT POSSIBLE AND DISPOSED OF AT A MUNICIPAL OR COMMERCIAL COMPOSTING FACILITY.




NOTES:

1. IMPROVEMENTS SHALL FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFER TO THE PROJECT GEOTECHNICAL REPORT AND RECOMMENDATIONS PER THE GEOTECHNICAL ENGINEER.
2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

2 ROAD SECTION - ENTRANCE ACCESS ROAD
N.T.S.




NOTES:

1. IMPROVEMENTS SHALL FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFER TO THE PROJECT GEOTECHNICAL REPORT AND RECOMMENDATIONS PER THE GEOTECHNICAL ENGINEER.
2. A MINIMUM SLOPE OF 2% SHEET FLOW SHOULD BE ESTABLISHED TO PROMOTE POSITIVE DRAINAGE OFF THE ROADWAY SURFACE WHERE FEASIBLE. ROAD GRADING SHOULD NOT RESULT IN DEPRESSIONS ALONG ROAD SURFACE THAT MAY COLLECT WATER AND ADVERSELY IMPACT ROAD LONGEVITY.
3. SOME INSTABILITY AND EROSION SHOULD BE ANTICIPATED WHEN UNPAVED ROADWAYS ARE EXPOSED TO SURFACE WATER AND RUNOFF. PERIODIC MAINTENANCE OF UNPAVED ROADWAYS SHOULD BE ANTICIPATED.
4. THE ADDITION OF AGGREGATE BASE PER GEOTECHNICAL RECOMMENDATIONS MAY BE NEEDED IN AREAS THAT EXPERIENCE EROSION OR PROLONGED EXPOSURE TO MOISTURE, SUCH AS PONDING. CONTRACTOR SHALL REVIEW FIELD CONDITIONS THROUGHOUT CONSTRUCTION TO DETERMINE IF ADDITION OF AGGREGATE IS WARRANTED. SAME PROCEDURE SHALL BE FORMED BY OWNER DURING FACILITY OPERATION TO ENSURE FUNCTIONALITY OF ROADWAY. PERIODIC APPLICATION OF WATER FOR DUST CONTROL WILL HELP MAINTAIN THE AGGREGATE BASE MATERIAL ONCE INSTALLED.

3 ROAD SECTION - INTERNAL ACCESS ROAD
N.T.S.

## VEGETATIVE STABILIZATION STANDARDS

**TEMPORARY VEGETATIVE STABILIZATION**

1. ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY HAS OR WILL CEASE FOR MORE THAN FOUR (4) DAYS SHALL BE IMMEDIATELY TEMPORARY STABILIZED.
2. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES -- PREDOMINANTLY PERENNIAL GRASSES.
3. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED. CRITICAL AREAS -- ERODIBLE SOILS, WITHIN 50 FEET OF A SURFACE WATER, ETC. -- SHOULD BE BLANKETED.
4. BEFORE SEEDING, APPLY LIME AND FERTILIZER IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS, AND WORK IN WHERE POSSIBLE.
5. FOR BEST RESULTS, TEMPORARY SEED MIXES SHOULD BE CHOSEN BASED ON THE PROPER MIX FOR THE TIME OF THE YEAR.
6. ALL SEED SHALL BE LABELED AND DATED IN ACCORDANCE WITH U.S.D.A. RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT, AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
7. IMMEDIATELY AFTER SEEDING, APPLY MULCH IN ACCORDANCE WITH SECTION 3.
8. ALL AREAS STABILIZED WITH TEMPORARY MULCHING ONLY SHALL BE LIMED, FERTILIZED AND PERMANENTLY SEEDED AND MULCHED IMMEDIATELY AT THE START OF THE NEW GROWING SEASON.

**PERMANENT VEGETATIVE STABILIZATION**

1. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE.
2. BEFORE THE SEEDING BEGINS, TOPSOIL SHOULD BE APPLIED IN ACCORDANCE WITH THE TOPSOIL APPLICATION STANDARDS AND ANY REQUIRED SOIL AMENDMENTS WORKED INTO THE SOIL TO A DEPTH OF 4 TO 6 INCHES. IF COMPOST IS TO BE ADDED TO THE TOPSOIL, IT SHOULD BE WORKED INTO THE SOIL WITH THE OTHER SOIL AMENDMENTS UNLESS IT IS BEING APPLIED AS AN EROSION CONTROL BMP.
3. AFTER SPREADING AND RAKING THE TOPSOIL, SPREAD AND WORK AGRICULTURAL GRADE LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES AT THE RATE SPECIFIED IN THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS OR AT A RATE ESTABLISHED BY REPRESENTATIVE SOIL TESTS (MINIMUM 1 TEST PER 20 ACRES).
4. IMMEDIATELY BEFORE SEEDING, FERTILIZER SHALL BE SPREAD AND WORKED INTO THE TOPSOIL TO A DEPTH OF 1" AT THE RATE SPECIFIED IN THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS OR AT A RATE ESTABLISHED BY REPRESENTATIVE SOIL TESTS (MINIMUM 1 TEST PER 20 ACRES). SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDROSEEDER. COVER SEEDS WITH ¼ INCH OF TOPSOIL WITH SUITABLE EQUIPMENT.
5. FOR BEST RESULTS, PERMANENT SEED MIXES SHOULD BE CHOSEN BASED ON THE PROPER MIX FOR THE TYPE OF SLOPE.
6. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH U.S.D.A. RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE. SEEDING SHALL BE DONE DURING PERIODS FROM MARCH 15 TO OCTOBER 15, UNLESS OTHERWISE DIRECTED, AND GRASS SEED SHALL NOT BE PLANTED AFTER A HEAVY RAIN OR WATERING.
7. SOD MAY BE INSTALLED IN LIEU OF TOPSOIL AND SEEDING AT THE OWNER'S DISCRETION. GRADED AREAS RECEIVING SOD SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES AND SHOULD RECEIVE A MINIMUM OF 2 INCHES OF TOPSOIL PRIOR TO SOD PLACEMENT. SOD SHALL BE INSTALLED PER THE SPECIFICATIONS ON PAGES 148 AND 277-279 IN THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE 363-2134-008, MARCH 2012."

**MULCHING**

1. AFTER TEMPORARY OR PERMANENT SEEDING, MULCH SHALL BE IMMEDIATELY PLACED, ANCHORED AND MAINTAINED ON THE SEEDED AREAS UNTIL A MINIMUM **UNIFORM 90% VEGETATIVE COVER** HAS BEEN ACHIEVE**D**.
2. MULCH MATERIAL SHALL BE FREE FROM FOREIGN MATERIAL, COARSE STEMS, MOLD, SUBSTANCES TOXIC TO PLANT GROWTH, AND MATURE SEED BEARING STALKS OR ROOTS OF PROHIBITED AND NOXIOUS WEEDS, AS DEFINED BY LAW. GRASS HAY AND CEREAL STRAW ARE PREFERRED MULCHES AND SHOULD BE APPLIED TO PRODUCE A LOOSE LAYER .75 TO 1 INCH DEEP.
3. STRAW OR HAY SHOULD NOT BE CHOPPED OR FINELY BROKEN DURING APPLICATION. LONG STRAWS AND STEMS ARE MORE READILY ANCHORED IN PLACE AND AFFORD SEEDLING PLANTS MORE PROTECTION THAN DOES CHOPPED STRAW OR HAY.
4. MULCH SHALL BE APPLIED AT THE RATE SPECIFIED IN THE TEMPORARY AND PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS. MULCH SHALL BE KEPT MOIST BY WATERING TO PREVENT BLOWING AWAY, AND SHALL BE CRIMPED INTO THE SOIL ON SLOPES FLATTER THAN 3H:1V.
5. IF MULCH IS USED AS AN ALTERNATIVE TO EROSION CONTROL BLANKET ON SLOPES 3H:1V OR STEEPER, IT SHALL BE HELD IN PLACE BY ONE OF THE FOLLOWING METHODS:
   - SYNTHETIC BINDERS SUCH AS CURASOL, DCA-70, PETROSET, TERRA-TACK, OR APPROVED EQUAL APPLIED AS RECOMMENDED BY THE MANUFACTURER.
   - NETTING MADE OF LIGHTWEIGHT BIODEGRADABLE PAPER, PLASTIC OR COTTON PLACED OVER MULCH AND ANCHORED PER MANUFACTURER'S SPECIFICATIONS.

**HYDROSEEDING**

1. WHEREVER SEED AND MULCH IS APPLIED BY HYDROSEEDING METHODS, THE SEED AND MULCH SHOULD BE APPLIED IN SEPARATE APPLICATIONS WITH THE SEED BEING APPLIED FIRST AND THE MULCH SPRAYED ON TOP OF THE SEED.
2. LIME, FERTILIZE AND SEED IN ACCORDANCE WITH THE TEMPORARY AND PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS. IF FERTILIZER IS COMBINED WITH INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN HALF AN HOUR TO AN HOUR; IF INOCULANT REMAINS IN THE TANK FOR MORE THAN 1 HOUR, ADD NEW SUPPLY OF INOCULANT. USE FIVE (5) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE WHEN SEEDING WITH A HYDROSEEDER.
3. IMMEDIATELY AFTER HYDROSEEDING, APPLY HAY OR STRAW MULCH IN ACCORDANCE WITH SECTION 3.
4. HYDROSEEDING SHALL BE DONE DURING PERIODS FROM MARCH 15 THROUGH OCTOBER 15, UNLESS OTHERWISE DIRECTED, AND SHALL NOT BE DONE AFTER A HEAVY RAIN OR WATERING.

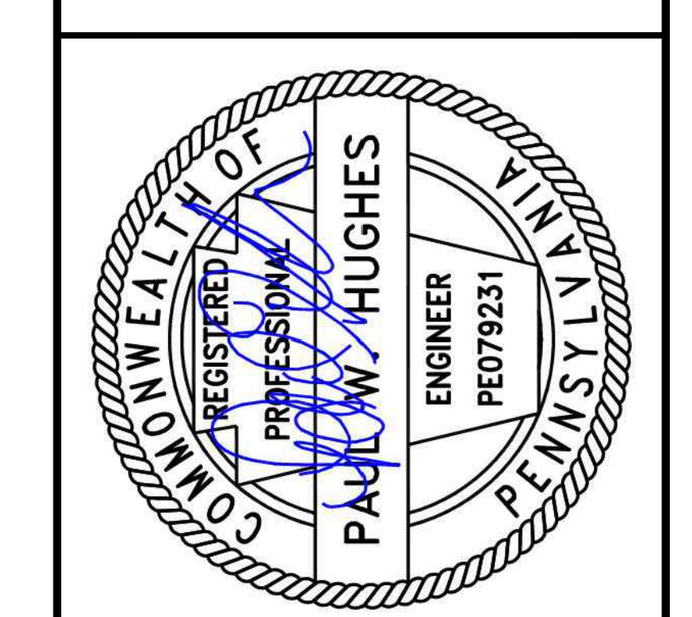
**TOPSOIL APPLICATION NOTES**

1. GRADED AREAS SHOULD BE SCARIFIES OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE
2. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREAS TO A DEPTH OF 4 TO 6 INCHES MINIMUM (2 INCHES ON FILL SLOPES). SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OF TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
3. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG THE CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.
4. FIELD EXPLORATION OF THE SITE SHALL BE MADE TO DETERMINE IF THERE IS SUFFICIENT SURFACE SOIL OF GOOD QUALITY TO JUSTIFY STRIPPING. TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM). IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND NOXIOUS WEEDS, AND SHALL GIVE EVIDENCE OF BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE THAT IS POTENTIALLY TOXIC TO PLANT GROWTH.
5. ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR THE FOLLOWING CRITERIA:
   - **ORGANIC MATTER** CONTENT SHALL BE NOT LESS THAN 1.5% BY WEIGHT
   - **PH RANGE** SHALL BE FROM 6.0 - 7.5. IF PH IS LESS THAN 6.0, LIME SHALL BE ADDED IN ACCORDANCE WITH SOIL TEST RESULTS OR IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
   - **SOLUBLE SALTS** SHALL NOT EXCEED 500 PPM.
6. IF ADDITIONAL OFF-SITE TOPSOIL IS NEEDED, IT MUST MEET THE STANDARDS STATED ABOVE.
7. **GC TO TEST SOIL PRIOR TO TOPSOIL REDISTRIBUTION.**

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PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM




KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

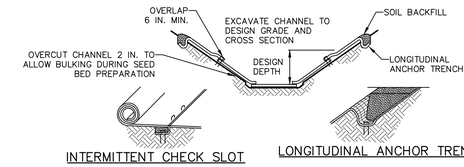
# POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 1

G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY PA

SHEET NUMBER
C-351

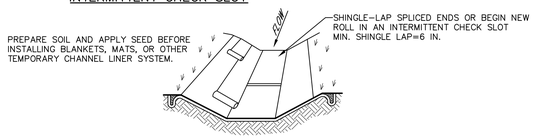
FOR REFERENCE ONLY

Plotted By: Zuabi, Wafaa Sheet Set: G Morris Solar Layout: C-351 January 29, 2026 01:52:34pm K:\PHI_PRJ\112882004 – G Morris Solar – Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\C-350 POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS.dwg
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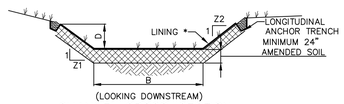



INTERMITTENT CHECK SLOT

LONGITUDINAL ANCHOR TRENCH




ISOMETRIC VIEW




CHANNEL CROSS-SECTION

* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

| CHANNEL NO. | STATIONS | BOTTOM WIDTH B (FT) | DEPTH D (FT) | MIN. REQUIRED FREEBOARD (FT) | TOP WIDTH W (FT) | Z1 (FT) | Z2 (FT) | LINING * |
|---|---|---|---|---|---|---|---|---|
| 1-A | 00+00.00-02+12.83 | 2.00 | 1.67 | 0.50 | 12.00 | 3 | 3 | NAG S75/PERMANENT SEEDING |
| 1-B | 02+12.83-04+56.4 | 2.00 | 1.67 | 0.50 | 12.00 | 3 | 3 | NAG S200 & GRASS (6") |

NOTES:

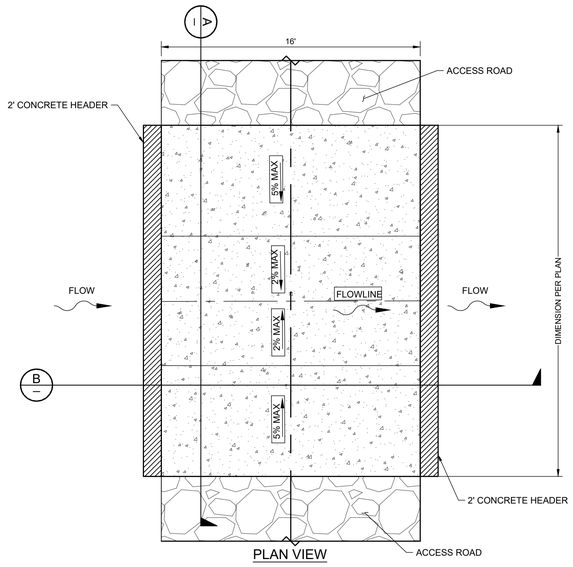
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

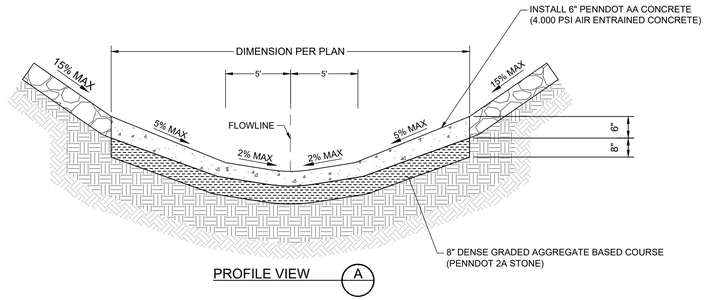
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

VEGETATED CHANNEL

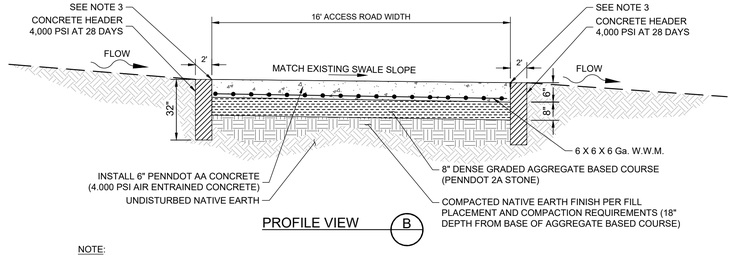
NOT TO SCALE




PLAN VIEW




PROFILE VIEW A




PROFILE VIEW B

NOTE:

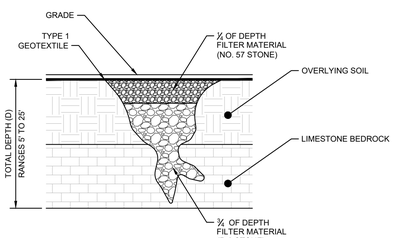
1. ALL IMPROVEMENTS SHALL ADHERE TO THE GEOTECHNICAL ENGINEERING REPORT.
2. MAXIMUM 15'-0" TO MINIMUM 4'-0" JOINT SPACING FOR THE CONCRETE DRIVE.
3. PLACE PREMOLDED EXPANSION JOINT FILLER MATERIAL 1/2" THICK OR POLYSTYRENE BONDBREAKER 1/4" THICK BETWEEN THE HEADER AND CONCRETE ACCESS ROAD. ALL JOINTS AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 705.4.

## 1 LOW WATER CROSSING DETAIL

Scale: N.T.S.

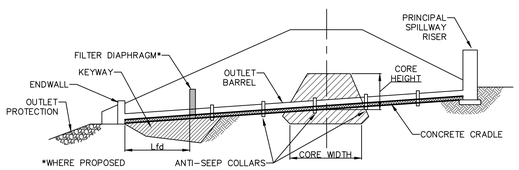
## PROCEDURE FOR INSTALLING AN INVERTED FILTER TO TREAT SINKHOLES

1. REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE SINKHOLE.
2. EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. ENLARGE THE SINKHOLE, AS NECESSARY TO ALLOW FOR INSTALLATION OF THE FILTER MATERIALS. THE THROAT OF THE SINKHOLE OR SOLUTION CHANNEL SHOULD THEN BE CLEANED OUT SUCH THAT THE SOLUTION CAVITY AND SURROUNDING ROCK IS EXPOSED.
3. FOR REVERSE GRADE FILTER, PLACE LARGER STONE OR BOULDERS WITHIN THE THROAT OF THE SINKHOLE. THE DIAMETER SHOULD BE AT LEAST ONE-HALF THE DIAMETER OF THE SINKHOLE THROAT.
4. IF IMMEDIATE THROAT CANNOT BE FULLY EXPOSED OR IF A SIGNIFICANTLY LARGE THROAT IS ENCOUNTERED. LARGE BOULDERS COMBINED WITH LEAN-MIX CONCRETE MAY BE REQUIRED IN THE EXCAVATION BOTTOM.
5. AFTER PLACEMENT OF LARGER STONE/BOULDERS AND POSSIBLE LEAN-MIX CONCRETE, THE FILTER SHOULD CONSIST OF SEQUENTIALLY SMALLED GRADED STONE.
6. THE FILTER SHOULD ALSO BE SURROUNDED WITH A NON-WOVEN GEOTEXTILE FABRIC.
7. UPON COMPLETION OF THE FILTER, THE REMAINDER OF THE EXCAVATED AREA SHOULD BE BACKFILLED WITH LOW PERMEABILITY CLAYEY SOIL COMPACTED TO NOT LESS THAN 95% OF MAX DRY DENSITY BASED ON THE STANDARD PROCTOR MOISTURE-DENSITY TEST (ASTM D698)
8. FILL MATERIALS SHOULD BE PLACED IN LOOSE LIFTS NOT MORE THAN 6" FOR LIGHT COMPACTION EQUIPMENT AND 10" FOR HEAVY COMPACTION EQUIPMENT.
9. MOISTURE CONTENTS OF THE FILL MATERIALS SHOULD BE ADJUSTED, AS NECESSARY, TO ACHIEVE THE REQUIRED COMPACTION AND COMPACTION TESTING SHOULD BE PERFORMED ON EACH LIFT OF MATERIAL PLACED.

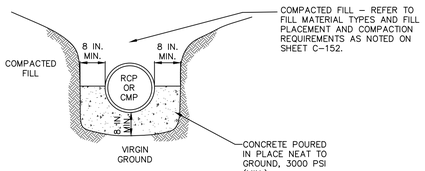



## 2 SINKHOLE INVERTED FILTER TREATMENT

N.T.S.




EMBANKMENT ALONG PRINCIPAL SPILLWAY



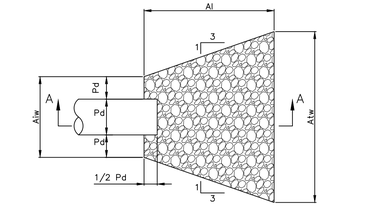

CROSS-SECTION AT OUTLET BARREL

NOTES:

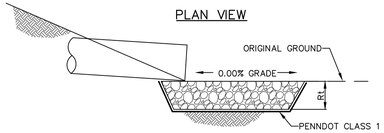
A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
COMPACTED FILL SHALL BE MAX 3 INCHES, AND SHALL BE COMPACTED AT 92% OF MAX. PER ASTM D698. ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN. FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION AND CONTROL MANUAL (2012).

STANDARD CONSTRUCTION DETAIL #7-17
CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

NOT TO SCALE




PLAN VIEW




SECTION A-A

| APRON NO. | OUTLET NO. | PIPE DIA Pd (IN) | RIPRAP | | APRON | | |
|---|---|---|---|---|---|---|---|
| | | | SIZE R-_ | THICK. Rt (IN) | LENGTH Al (FT) | INITIAL WIDTH Aiw (FT) | TERMINAL WIDTH Atw (FT) |
| 1 | A0 | 24 | R-4 | 18 | 13.00 | 6.00 | 19.00 |
| 2 | B0 | 36 | R-5 | 27 | 20.00 | 9.00 | 29.00 |

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

STANDARD CONSTRUCTION DETAIL #9-2
RIPRAP APRON AT PIPE OUTLET
NO FLARED ENDWALL

NOT TO SCALE

## MATERIAL PROPERTY DATA SHEET

WESTERN GREEN

### VMax® S200™

Permanent • Triple Net • Organic Fiber Matrix • Turf Reinforcement Mat

**DESCRIPTION**

S200 Turf Reinforcement Mat (TRM) is composed of 100% straw fibers mechanically (stitch) bound between a three-dimensional UV stabilized, synthetic net structure. Stitching is secured on two-inch centers using UV stabilized, synthetic thread. S200 is a permanent, three-dimensional TRM that provides immediate erosion protection and long-term turf reinforcement and is intended for applications requiring erosion protection for greater than thirty-six months.

Each roll of S200 is made in the USA and manufactured under Western Green's Quality Assurance Program to ensure a continuous distribution of fibers and consistent thickness.



| Material Content | |
|---|---|
| Matrix | Straw |
| Netting | Top Net: Medium-weight, UV stable<br>Middle Net: Corrugated Heavyweight, UV stable<br>Bottom Net: Medium-weight, UV stable |
| Thread | Synthetic, UV Stable |

| Standard Roll Sizes | | |
|---|---|---|
| Width | 8 ft | (2.4 m) |
| Length | 90 ft | (27.4 m) |
| Weight ± 10% | 64 lb | (29.0 kg) |
| Area | 80 sy | (66.9 m²) |

*Material available in custom roll sizes*

| Approvals & Classification | |
|---|---|
| Classification | FHWA: Type 5.C / ECTC: Type 5.C |
| TTI Approvals | Class 2 Type H |
| NTPEP Number | ECP-2022-01-010 |

| Index Property | Test Method | Typical | |
|---|---|---|---|
| Thickness | ASTM D6525 | 0.50 in. | (13 mm) |
| Mass/Unit Area | ASTM D6566 | 12.0 oz/sy | (400 g/m²) |
| Tensile Strength – MD | ASTM D6818 | 450 lbs/ft | (6.6 kN/m) |
| Tensile Strength – TD | ASTM D6818 | 450 lbs/ft | (6.6 kN/m) |
| Elongation - MD | ASTM D6818 | 30% | |
| Elongation – TD | ASTM D6818 | 20% | |
| UV Stability | ASTM D4355 | 80% @1000 hr | |
| Light Penetration | ASTM D6567 | 15% | |
| Biomass Improvement | ASTM D7322 | 300% | |
| Specific Gravity | ASTM D792 | 57.4 lb/ft³ | (0.92 g/cm³) |
| Porosity | ECTC | N/A | |

| Design Parameters | | |
|---|---|---|
| **Property** | **Unvegetated** | **Vegetated[3]** |
| K<sub>SBLE</sub> C Factor[2] | N/A | 0.03 |
| Slope Maximum Gradient[1] | 0.5H:1V | 0.5H:1V |
| Permissible Shear Stress[2] | 2.3 psf (110 Pa) | 10.0 psf (480 Pa) |
| Permissible Velocity[2] | 8.5 fps (2.6 m/s) | 15 fps (4.6 m/s) |
| $\tau_{ave}$ / $\tau_{max}$ (HEC-15) | N/A | 0.67 |

| Manning's n Roughness (HEC-15) | | |
|---|---|---|
| $n_{lower}$ | $n_{mid}$ | $n_{upper}$ |
| 0.038 | 0.030 | 0.026 |

1 Maximum Gradient a recommendation for typical installations.
2 Hydraulic thresholds compliant with ASTM D6459/D6460 but generalized for typical applications.
3 Vegetated values dependent on established stand of vegetation

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## 3 VMAX S200 MATTING

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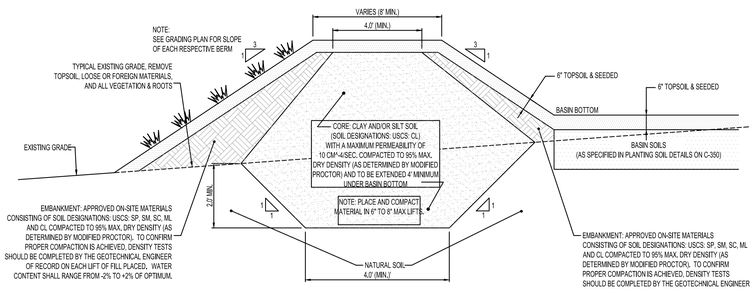
KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 2

G. MORRIS SOLAR
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER C-352

Plotted By: Zuobi, Wafaa Sheet Set: G Morris Solar Layout: C-352 January 29, 2026 01:52:36pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-350 POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS.dwg
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STANDARD BASIN BERM NOTES:

1.) PRIOR TO PLACEMENT OF FILL MATERIAL, THE EXISTING GROUND BENEATH THE EMBANKMENT SHALL BE CLEARED OF ALL TREE STUMPS, BRUSH, ROOTS, AND OTHER ORGANIC MATERIAL SUBJECT TO DECOMPOSITION, OVERSIZED STONES, AND ANY OTHER OBJECTIONABLE MATERIAL. FOLLOWING CLEARING, THE SURFACE ON OR AGAINST WHERE THE FILL IS TO BE PLACED SHALL BE SCARIFIED (BROKEN TO A DEPTH OF SIX (6) INCHES), MOISTURE CONDITIONED AS NECESSARY, AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY, PRIOR TO PLACEMENT OF FILL. THE CUT-OFF TRENCH SHALL BE EXCAVATED TO A DEPTH OF FOUR (4) FEET BELOW EXISTING GRADE. THE EXCAVATION SHALL BE DONE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT. THE MINIMUM BOTTOM WIDTH OF THE CUT-OFF TRENCH SHALL BE EIGHT (8) FEET BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING THE BACKFILL OPERATIONS.

2.) ALL FILL SHALL BE TAKEN FROM SELECT BORROW AREAS. IT SHALL BE FREE FROM BRUSH, ROOTS, AND OTHER ORGANIC MATERIAL SUBJECT TO DECOMPOSITION, OVERSIZED STONES, AND ANY OTHER OBJECTIONABLE MATERIAL.

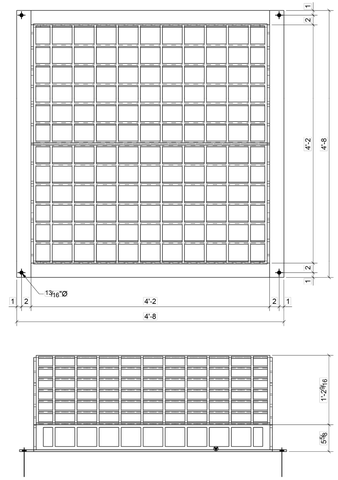
4.) FILL MATERIAL IN ALL EMBANKMENTS SHALL BE PLACED IN 6 TO 8 INCH LIFTS AND SHALL BE CONTINUOUS OVER THE ENTIRE LENGHT OF THE FILL. FILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED FROM THE COMPACTION TESTS PERFORMED BY THE APPROPRIATE METHOD IN ASTM D1557. COMPACTION SHALL BE OBTAINED BY USING MECHANICAL SHEEP FOOT ROLLERS.

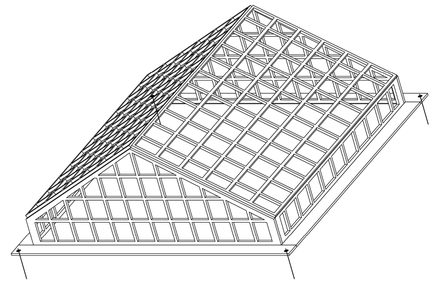
5.) THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 5% HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

6.) NO ROCK FILL AND/OR GRAVEL SHALL BE PLACED BELOW THE CLAY CORE.

## 1 BERM & CUTOFF TRENCH (FOR BERMS IN FILL CONDITION)

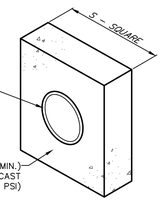
N.T.S.



## 2 TRASH RACK FOR BASIN INLET (TYP.)

N.T.S.




| E&S BASIN OR TRAP NO. | PIPE SIZE (IN) | S (IN) | NO. OF COLLARS | COLLAR SPACING (FT) | RISER TO FIRST COLLAR (FT) |
|---|---|---|---|---|---|
| Sed. Basin #1 | 24.00 | 57.60 | 2.00 | 8.00 | 12.00 |
| Sed. Basin #4 | 36.00 | 68.16 | 4.00 | 7.00 | 7.00 |

NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

COLLARS STATED AS "N/A" DO NOT REQUIRE ANTI-SEEP COLLARS DUE TO SOIL REQUIREMENTS.

STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR
PERMANENT BASINS OR TRAPS
NOT TO SCALE




## 3 BUFFER PLANTING DETAIL

N.T.S.

GENERAL BUFFER NOTES:

1. TWO STAGGERED ROWS OF PLANTING CONSISTING OF A MIX OF EVERGREEN TREES.
2. ONE SPECIES OF TREE MAY NOT ACCOUNT FOR MORE THAN 25% OF THE TOTAL TREE SPECIES USED ON THE PROJECT.
   - 1,074 TOTAL TREES X 25% = 268 TREES MAX PER SINGLE SPECIES
3. TREES 6' HEIGHT MINIMUM AT TIME OF PLANTING.
4. ELEVEN TREES PER 100 LF OF BUFFER. SEE BUFFER CALCULATIONS BELOW.

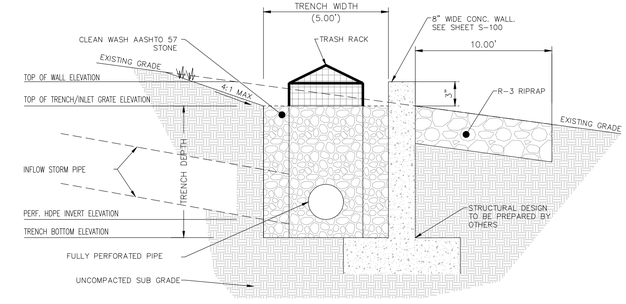
BUFFER CALCULATIONS:

| | |
|---|---|
| **TOTAL BUFFER LENGTH:** | **10,432 LF** |
| EVERGREEN TREES PER 100 LF: | 11 TREES |
| **TOTAL EVERGREEN TREES :** | **1,147 TREES** |
| **TOTAL EVERGREEN TREES PROVIDED :** | **1,074 TREES** |

PLANT SCHEDULE

| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE AT PLANTING | ROOT |
|---|---|---|---|---|---|---|
| TREES | | | | | | |
| | | 1,074 | BUFFERING TREES | | | |
| | AB | | Abies balsamea | Balsam Fir | 6' Ht. | B&B |
| | PA | | Picea abies | Norway Spruce | 6' Ht. | B&B |
| | PG | | Picea glauca | White Spruce | 6' Ht. | B&B |
| | PC | | Picea pungens | Colorado Spruce | 6' Ht. | B&B |
| | PS | | Pinus strobus | White Pine | 6' Ht. | B&B |
| | PD | | Pseudotsuga menziesii | Douglas Fir | 6' Ht. | B&B |

| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE / TYPE | QTY / RATE |
|---|---|---|---|---|---|---|
| GROUND COVERS | | | | | | |
| | E186 | 3,441,531 sf | ERNST MIX 186 | SOLAR FARM SEED MIX | --- | 4 LBS PER 1000 SF |




| TRENCH BOTTOM ELEV. (FT.) | PERF. HDPE DIAMETER (IN.) | PERF. HDPE ELEVATION (FT.) | TRENCH DEPTH (FT.) | TRENCH TOP ELEV. (FT.) | INLET GRATE ELEV. (FT.) | TOP OF WALL ELEV. (FT.) | TRENCH LENGTH (FT.) |
|---|---|---|---|---|---|---|---|
| 730.00 | 30.00 | 730.50 | 6.00 | 736.00 | 736.00 | 736.25 | 55.00 |
| 735.50 | 36.00 | 736.00 | 6.50 | 742.00 | 742.00 | 742.25 | 100.00 |

LEVEL SPREADER CONSTRUCTION SEQUENCE

1. EXCAVATE TRENCH BOTTOM TO A UNIFORM, UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS AND AT A SLOPE OF 0.0% FROM THE STORM INLET.
2. INSTALL STRUCTURAL CONCRETE CURB/EDGE TO ACT AS LEVEL SPREADER.
3. PLACE NONWOVEN GEOTEXTILE FABRIC ALONG THE BOTTOM AND SIDES OF THE TRENCH. FOLD BACK GEOTEXTILE FABRIC AND TIE INTO ADJACENT SUBGRADE.
4. INSTALL 8" BED BOTTOM STONE. PLACE PERFORATED HDPE PIPE IN THE CENTER OF THE TRENCH.
5. PLACE REMAINING STONE IN 8 INCH LIFTS, LIGHT COMPACTING BETWEEN LIFTS. 3
6. INSTALL R-3 RIPRAP FOR A MINIMUM OF 5 FEET DOWNSLOPE FROM THE EDGE OF LEVEL SPREADER.
7. STABILIZE SURROUNDING AREA IMMEDIATELY.

| TABLE 1 - BULK DENSITY CHART | | | |
|---|---|---|---|
| SOIL TEXTURE | IDEAL BULK DENSITIES | BULK DENSITIES THAT MAY AFFECT ROOT GROWTH | BULK DENSITIES THAT RESTRICT ROOT GROWTH |
| | g/cm3 | g/cm3 | g/cm3 |
| SANDS, LOAMY SANDS | <1.60 | 1.69 | 1.80 |
| SANDY LOAMS, LOAMS | <1.40 | 1.63 | 1.80 |
| SANDY CLAY LOAMS, LOAMS, CLAY LOAMS | <1.40 | 1.60 | 1.75 |
| SILT, SILT LOAMS | <1.30 | 1.60 | 1.75 |
| SILT LOAMS, SILTY CLAY LOAMS | <1.10 | 1.55 | 1.65 |
| SANDY CLAYS, SILTY CLAYS, COME CLAY LOAMS (35-45% CLAY) | <1.10 | 1.49 | 1.58 |
| CLAYS (>45% CLAY) | <1.10 | 1.39 | 1.47 |
| *SOURCE: PROTECTING URBAN SOIL QUALITY, USDA-NRCS* | | | |

SOIL RESTORATION / AMENDMENTS NOTES:

1. GENERAL CONTRACTOR TO TEST EXISTING SOIL IN LOCATIONS IDENTIFIED ON THE PLAN TO CONFIRM IDEAL BULK DENSITY REQUIREMENTS ARE MET PER THE PA STORMWATER BMP MANUAL.
   - BULK DENSITY TABLE (§6.7.3 TABLE 1) SHOWN HEREON FOR REFERENCE ONLY.
2. IF TESTING INDICATED EXISTING SOIL DOES NOT MEET THE BULK DENSITY IDENTIFIED IN TABLE 1, THE CONTRACTOR SHALL CONSULT WITH A CERTIFIED SOIL SCIENTIST FOR THE RECOMMENDED SOIL AMENDMENTS FOR ACHIEVING SAID BULK DENSITY REQUIREMENTS.
3. **THE GENERAL CONTRACTOR SHALL PROVIDE THE TOWNSHIP WITH A CERTIFICATION FROM THE MATERIALS SUPPLIER, GEOTECHNICAL CONSULTANT, OR SOIL SCIENTIST THAT THE AMENDED SOILS MEET THE BULK DENSITY SPECIFICATIONS.**
4. ALL CONSTRUCTION TO BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION /AMENDMENTS.
5. CONTRACTOR TO PLACE PERMANENT SEED OVER THE RESTORED / AMENDED SOIL AREA FOR FINAL STABILIZATION

## 4 AMENDED SOILS CHART

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PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE - STOP CALL
PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
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| No. | REVISIONS | DATE | BY |
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| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TCK

# POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 3

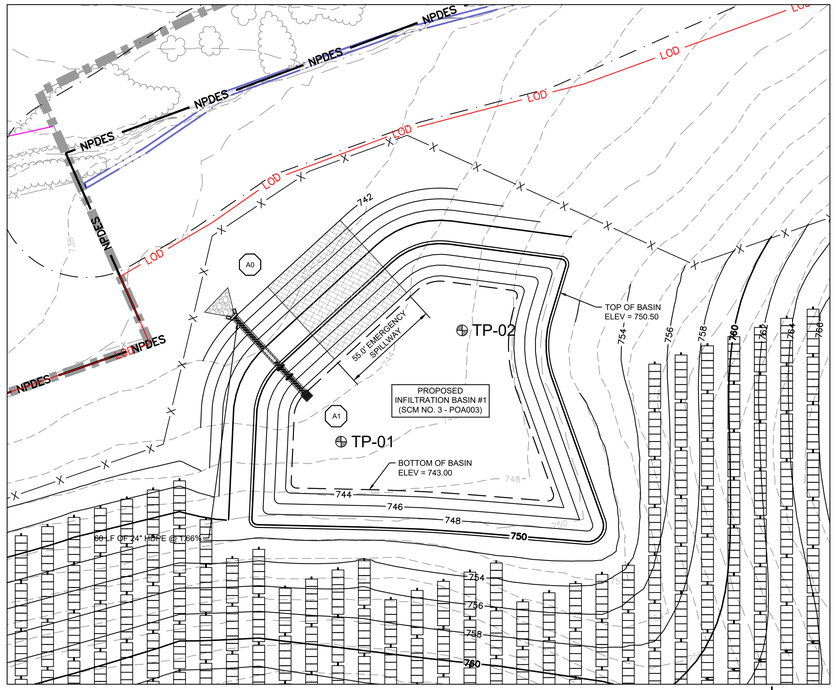
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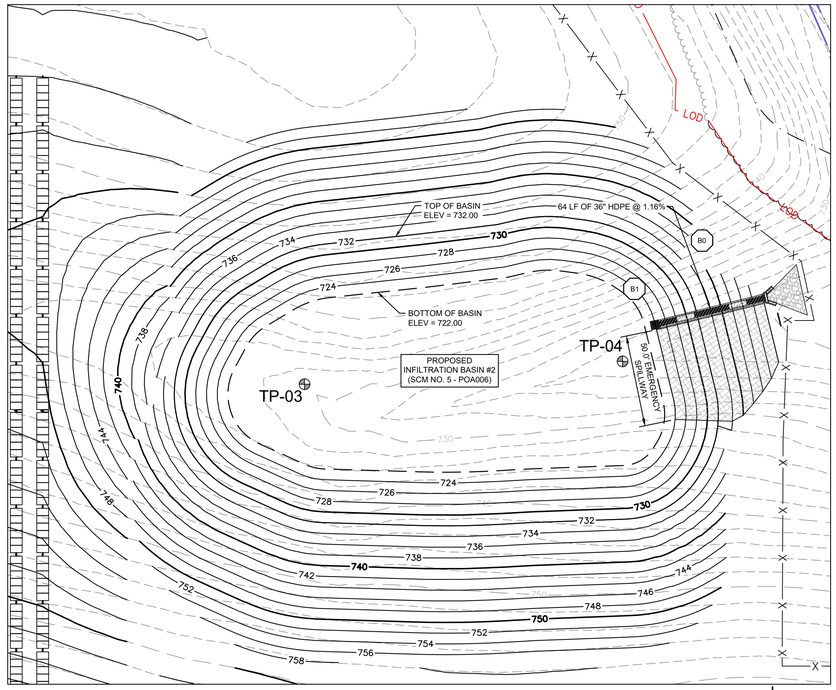
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1 INFILTRATION BASIN #1 ENLARGEMENT

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH



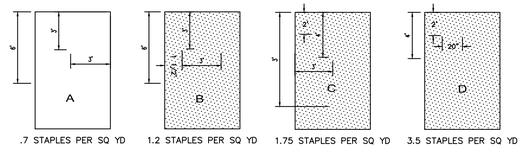

2 INFILTRATION BASIN #2 ENLARGEMENT

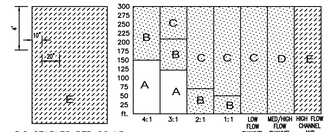
GRAPHIC SCALE IN FEET 0 20 40 80

NORTH

## INFILTRATION BASIN FACILITY CONSTRUCTION SEQUENCE

1. CONSTRUCTION OF THE BASIN BOTTOM SHOULD NOT BEGIN UNTIL THE UPSTREAM E&S COMPOST FILTER SOCK HAS BEEN INSTALLED TO PREVENT ALL SEDIMENT FROM ENTERING THE BASIN.
2. THE SCM FACILITY SHALL BE EXCAVATED TO THE DEPTH AND SIZE REQUIRED. CONTRACTOR SHALL SCARIFY THE EXISTING SOIL SURFACE. THE CONTRACTOR MUST TAKE CARE TO NOT COMPACT IN-SITU SOILS. GC TO INSTALL NON-WOVEN GEOTEXTILE ON A LAYER OF FINE GRAINED SOIL. THE SOIL MAY NOT CONTAIN SHARP ANGULAR ROCK OR OTHER DEBRIS WHICH COULD PUNCTURE THE NON-WOVEN GEOTEXTILE AND MUST MEET ALL MANUFACTURER'S SPECIFICATIONS.
3. PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-352.
4. SUBSOILS IN THE ENTIRE SCM AREA MUST BE THOROUGHLY AND DEEPLY SCARIFIED BEFORE THE CONTRACTOR PLACES THE PLANTING SOIL MATERIAL. SCARIFYING MUST BE DONE WITH A "TOOTHED" BACKHOE. DO NOT COMPACT THE SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES, CONCRETE CRADLE, AND REINFORCED SPILLWAY.
6. INSTALL PLANTING SOIL MIX TO DEPTH REQUIRED IN 8-INCH MAXIMUM LIFTS AND LIGHTLY COMPACT. KEEP EQUIPMENT MOVEMENT OVER PLANTING SOIL TO A MINIMUM.
7. PRE-SOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION IN ORDER TO AID IN SETTLEMENT.
8. COMPLETE FINAL GRADING TO ACHIEVE DESIGN GRADES, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH, OR TOPSOIL AS SPECIFIED ON PLANS.
9. PLANT SCM FACILITIES WORKING FROM THE BOTTOM OF THE BASIN UP SIDES. SCM FACILITIES SHALL BE PLANTED USING SEED MIXTURE NOTED HEREON.
10. INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY. MAINTAIN INLET PROTECTION AND OTHER E&S CONTROLS UNTIL THE SITE IS FULLY STABILIZED.
11. WATER VEGETATION AT THE END OF EACH DAY FOR TWO (2) WEEKS AFTER PLANTING IS COMPLETED.



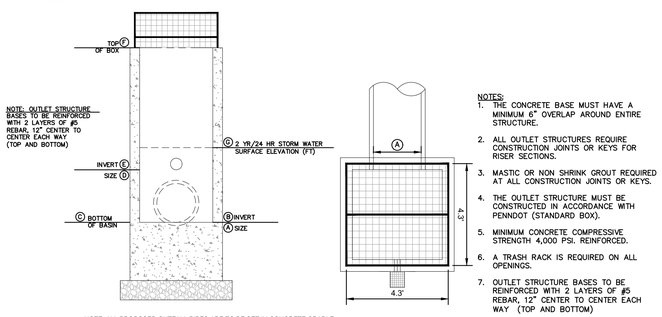

NOTE:
STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS WILL VARY DEPENDING UPON APPLICATION TYPE, SLOPE LENGTH, SLOPE GRADE, SOIL TYPE AND ANNUAL RAINFALL. THE FOLLOWING ARE GENERAL STAPLE RECOMMENDATIONS BASED ON SLOPE LENGTH, SLOPE GRADE, AND ESTIMATED RUNOFF. SPECIFIC STAPLE PLACEMENT PATTERNS ARE ILLUSTRATED IN DIAGRAMS A,B,C,D, AND E. INCREASED STAPLE RATES MAY BE NECESSARY DEPENDING UPON SITE CONDITIONS. FOR DETAILED SPECIFIC RECOMMENDATIONS, CONTACT YOUR NEAREST AUTHORIZED NORTH AMERICAN GREEN DISTRIBUTOR OF CALL NORTH AMERICAN GREEN TECHNICAL SERVICES.

EROSION CONTROL BLANKET STAPLE PATTERN GUIDE
(NOT TO SCALE)

| INFILTRATION RATES AT TEST LOCATIONS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASIN NUMBER | SCM NUMBER | TEST PIT # | EXISTING ELEV. (FT) | FINAL ELEV. (FT) | PROPOSED TEST ELEV. (FT) | PROPOSED TEST DEPTH | ACTUAL TEST ELEV. (FT) | ACTUAL TEST DEPTH | INFILTRATION RATE (IN/HR) | DESIGN RATE | GROUNDWATER DEPTH | GROUNDWATER ELEVATION |
| 1 | 3 | TP-01 | 745.45 | 744.00 | 743.00 | 2.45 | 742.95 | 2.50 | 5.25 | 3.20 | N/A | N/A |
| | | TP-02 | 745.68 | 744.00 | 7430.00 | 2.68 | 743.18 | 2.50 | 7.50 | | N/A | N/A |
| 2 | 6 | TP-03 | 730.97 | 723.00 | 722.00 | 8.97 | 721.97 | 9.00 | 3.50 | 1.60 | N/A | N/A |
| | | TP-04 | 722.91 | 723.00 | 722.00 | 0.91 | 721.91 | 1.00 | 3.00 | | N/A | N/A |

3 INFILTRATION TEST PIT TABLE

N.T.S.



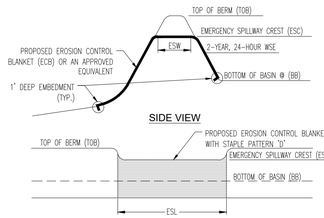

NOTE: ALL PROPOSED OUTFALL PIPES ARE TO BE SET IN CONCRETE CRADLE. SEE SHEET C-352 FOR DETAIL

NOTES:
1. THE CONCRETE BASE MUST HAVE A MINIMUM 6" OVERLAP AROUND ENTIRE STRUCTURE.
2. ALL OUTLET STRUCTURES REQUIRE CONSTRUCTION JOINTS OR KEYS FOR RISER SECTIONS.
3. MASTIC OR NON SHRINK GROUT REQUIRED AT ALL CONSTRUCTION JOINTS OR KEYS.
4. THE OUTLET STRUCTURE MUST BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT (STANDARD BOX).
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH 4,000 PSI. REINFORCED.
6. A TRASH RACK IS REQUIRED ON ALL OPENINGS.
7. OUTLET STRUCTURE BASES TO BE REINFORCED WITH 2 LAYERS OF #5 REBAR, 12" CENTER TO CENTER EACH WAY (TOP AND BOTTOM)

| BASIN # | A OUTFALL SIZE (INCHES) | B OUTFALL ELEV (FT) | C BOTTOM OF BASIN ELEV. (FT) | D ORIFICE SIZE (INCHES) | E ORIFICE ELEV (FT) | F TOP OF BOX ELEV (FT) | G 2 YR/ 24 HR STORM WATER SURFACE ELEVATION (FT) | SIDE SLOPES (Z) (FT) | BOX SIZE |
|---|---|---|---|---|---|---|---|---|---|
| INFILTRATION BASIN #1 (SCM NO. 3, POA003) | 24" HDPE | 743.00 | 743.00 | 5.0 | 744.35 | 747.75 | 744.20 | 3 | 48"W x 48"H |
| INFILTRATION BASIN #2 (SCM NO. 5, POA006) | 36" HDPE | 722.00 | 722.00 | 6.0 | 723.20 | 728.40 | 723.59 | 3 | 48"W x 48"H |

3 PERMANENT OUTLET STRUCTURE DETAILS

N.T.S.




| SCM ID | TOP OF BERM ELEVATION (TOB) (FT) | EMERGENCY SPILLWAY CREST (ESC) (FT) | EMERGENCY SPILLWAY WIDTH (ESW) (FT) | MAX. 100-YR WATER ELEVATION (FT) | EMERGENCY SPILLWAY LENGTH (ESL) (FT) | BOTTOM OF BASIN (BB) (FT) | PROPOSED EROSION CONTROL BLANKET MATERIAL (ECB) |
|---|---|---|---|---|---|---|---|
| INFILTRATION BASIN #1 (SCM NO. 3, POA003) | 750.50 | 749.00 | 10 | 748.04 | 55 | 743.00 | NAG P-300 |
| INFILTRATION BASIN #2 (SCM NO. 5, POA006) | 732.00 | 730.25 | 10 | 728.96 | 50 | 722.00 | NAG P-300 |

NOTE:
1. THE CONSTRUCTION MATERIAL OF THE EMERGENCY SPILLWAYS SHALL EXTEND ALONG THE UPSTREAM AND DOWNSTREAM BERM EMBANKMENT SLOPES.
2. THE UPSTREAM EDGE OF THE EMERGENCY SPILLWAY SHALL BE A MINIMUM OF THREE FEET ABOVE THE BOTTOM OF BASIN..
3. THE DOWNSTREAM SLOPE OF THE SPILLWAY SHALL, AS A MINIMUM, EXTEND TO THE TOE OF THE BERM EMBANKMENT.

4 EMERGENCY SPILLWAY DETAIL

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PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

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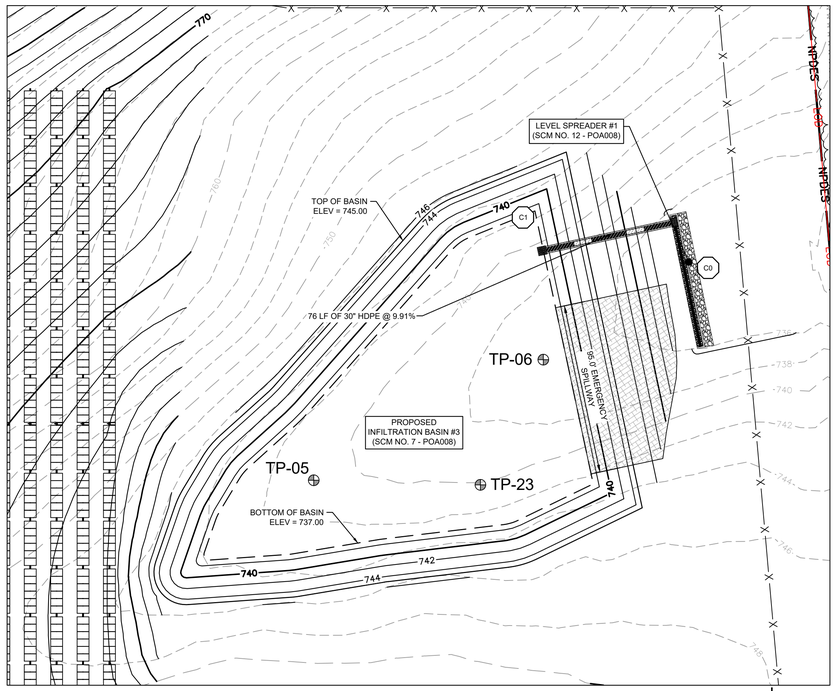
KHA PROJECT: 112882004
DATE: 01/30/2026
SCALE: AS SHOWN
DESIGNED BY: EJF
DRAWN BY: PJQ
CHECKED BY: TGK

# POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 4

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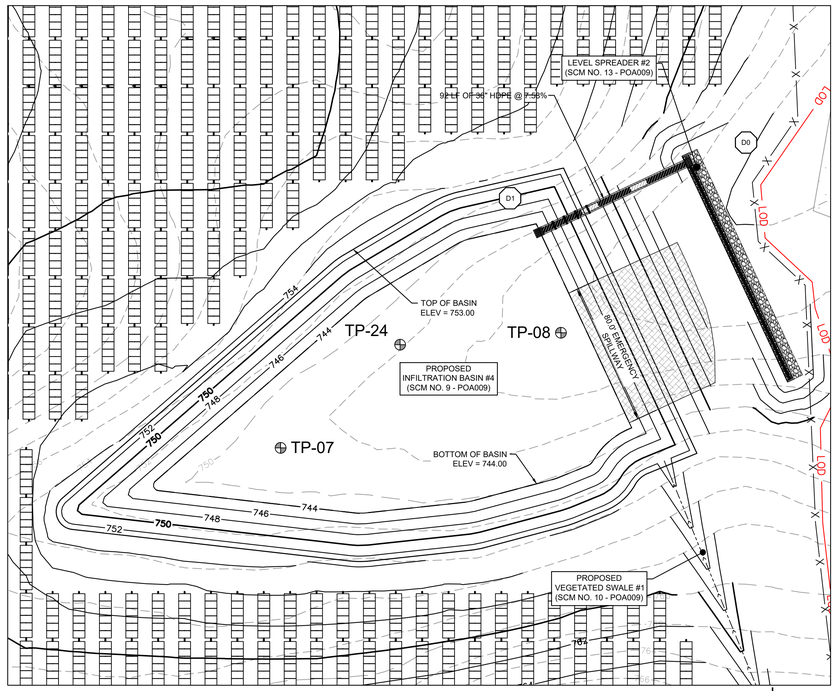
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1 INFILTRATION BASIN #3 ENLARGEMENT

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH



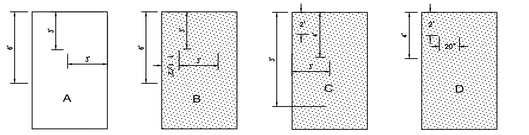

2 INFILTRATION BASIN #4 ENLARGEMENT

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH

## INFILTRATION BASIN FACILITY CONSTRUCTION SEQUENCE

1. CONSTRUCTION OF THE BASIN BOTTOM SHOULD NOT BEGIN UNTIL THE UPSTREAM E&S COMPOST FILTER SOCK HAS BEEN INSTALLED TO PREVENT ALL SEDIMENT FROM ENTERING THE BASIN.
2. THE SCM FACILITY SHALL BE EXCAVATED TO THE DEPTH AND SIZE REQUIRED. CONTRACTOR SHALL SCARIFY THE EXISTING SOIL SURFACE. THE CONTRACTOR MUST TAKE CARE TO NOT COMPACT IN-SITU SOILS. GC TO INSTALL NON-WOVEN GEOTEXTILE ON A LAYER OF FINE GRAINED SOIL. THE SOIL MAY NOT CONTAIN SHARP ANGULAR ROCK OR OTHER DEBRIS WHICH COULD PUNCTURE THE NON-WOVEN GEOTEXTILE AND MUST MEET ALL MANUFACTURER'S SPECIFICATIONS.
3. PROJECT IS LOCATED WITHIN AN AREA OF KNOWN KARST TOPOGRAPHY. IF A SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION, STABILIZE IMMEDIATELY. REFER TO SINKHOLE - TREATMENT INVERTED FILTER DETAIL ON SHEET C-352.
4. SUBSOILS IN THE ENTIRE SCM AREA MUST BE THOROUGHLY AND DEEPLY SCARIFIED BEFORE THE CONTRACTOR PLACES THE PLANTING SOIL MATERIAL. SCARIFYING MUST BE DONE WITH A "TOOTHED" BACKHOE. DO NOT COMPACT THE SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES, CONCRETE CRADLE, AND REINFORCED SPILLWAY.
6. INSTALL PLANTING SOIL MIX TO DEPTH REQUIRED IN 8-INCH MAXIMUM LIFTS AND LIGHTLY COMPACT. KEEP EQUIPMENT MOVEMENT OVER PLANTING SOIL TO A MINIMUM.
7. PRE-SOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION IN ORDER TO AID IN SETTLEMENT.
8. COMPLETE FINAL GRADING TO ACHIEVE DESIGN GRADES, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH, OR TOPSOIL AS SPECIFIED ON PLANS.
9. PLANT SCM FACILITIES WORKING FROM THE BOTTOM OF THE BASIN UP SIDES. SCM FACILITIES SHALL BE PLANTED USING SEED MIXTURE NOTED HEREON.
10. INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY. MAINTAIN INLET PROTECTION AND OTHER E&S CONTROLS UNTIL THE SITE IS FULLY STABILIZED.
11. WATER VEGETATION AT THE END OF EACH DAY FOR TWO (2) WEEKS AFTER PLANTING IS COMPLETED.




NOTE:
STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS WILL VARY DEPENDING UPON APPLICATION TYPE, SLOPE LENGTH, SLOPE GRADE, SOIL TYPE AND ANNUAL RAINFALL. THE FOLLOWING ARE GENERAL STAPLE RECOMMENDATIONS BASED ON SLOPE LENGTH, SLOPE GRADE, AND ESTIMATED RUNOFF. SPECIFIC STAPLE PLACEMENT PATTERNS ARE ILLUSTRATED IN DIAGRAMS A,B,C,D, AND E. INCREASED STAPLE RATES MAY BE NECESSARY DEPENDING UPON SITE CONDITIONS. FOR DETAILED SPECIFIC RECOMMENDATIONS, CONTACT YOUR NEAREST AUTHORIZED NORTH AMERICAN GREEN DISTRIBUTOR OF CALL NORTH AMERICAN GREEN TECHNICAL SERVICES.

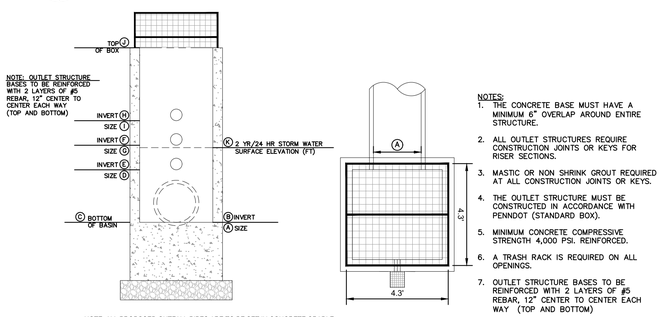
EROSION CONTROL BLANKET STAPLE PATTERN GUIDE
(NOT TO SCALE)

| INFILTRATION RATES AT TEST LOCATIONS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASIN NUMBER | SCM NUMBER | TEST PIT # | EXISTING ELEV. (FT) | FINAL ELEV. (FT) | PROPOSED TEST ELEV. (FT) | PROPOSED TEST DEPTH | ACTUAL TEST ELEV. (FT) | ACTUAL TEST DEPTH | INFILTRATION RATE (IN/HR) | DESIGN RATE | GROUNDWATER DEPTH | GROUNDWATER ELEVATION |
| 3 | 7 | TP-05 | 740.92 | 737.00 | 736.00 | 4.92 | 735.92 | 5.00 | 1.50 | 1.50 | N/A | N/A |
| | | TP-06 | 736.96 | 737.00 | 736.00 | 0.96 | 735.96 | 1.00 | 5.25 | | N/A | N/A |
| | | TP-23 | 740.14 | 737.00 | 736.00 | 4.14 | 738.14 | 2.00 | 8.40 | | N/A | N/A |
| 4 | 9 | TP-07 | 748.68 | 744.00 | 743.00 | 5.68 | 743.18 | 5.50 | 0.20 | 1.3 | N/A | N/A |
| | | TP-08 | 744.69 | 744.00 | 743.00 | 1.69 | 743.19 | 1.50 | 5.00 | | N/A | N/A |
| | | TP-24 | 748.18 | 744.00 | 743.00 | 4.18 | 747.18 | 1.00 | 6.60 | | N/A | N/A |

NOTES:
1. TP-23 AND TP-24 WERE NOT ACCOUNTED FOR IN THE DESIGN RATE AS THE INFILTRATION TEST AS THESE LOCATION DID NOT REACH THE TARGET DEPTH.

3 INFILTRATION TEST PIT TABLE

N.T.S.



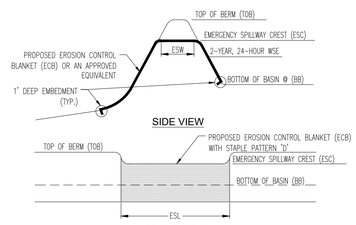

NOTE: ALL PROPOSED OUTFALL PIPES ARE TO BE SET IN CONCRETE CRADLE. SEE SHEET C-352 FOR DETAIL.

NOTES:
1. THE CONCRETE BASE MUST HAVE A MINIMUM 6" OVERLAP AROUND ENTIRE STRUCTURE.
2. ALL OUTLET STRUCTURES REQUIRE CONSTRUCTION JOINTS OR KEYS FOR RISER SECTIONS.
3. MASTIC OR NON SHRINK GROUT REQUIRED AT ALL CONSTRUCTION JOINTS OR KEYS.
4. THE OUTLET STRUCTURE MUST BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT (STANDARD BOX).
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH 4,000 PSI. REINFORCED.
6. A TRASH RACK IS REQUIRED ON ALL OPENINGS.
7. OUTLET STRUCTURE BASES TO BE REINFORCED WITH 2 LAYERS OF #5 REBAR, 12" CENTER TO CENTER EACH WAY (TOP AND BOTTOM)

| BASIN # | A OUTFALL SIZE (INCHES) | B OUTFALL ELEV (FT) | C BOTTOM OF BASIN ELEV. (FT) | D ORIFICE SIZE (INCHES) | E ORIFICE ELEV (FT) | F ORIFICE SIZE (INCHES) | G ORIFICE ELEV (FT) | H ORIFICE SIZE (INCHES) | I ORIFICE ELEV (FT) | J TOP OF BOX ELEV (FT) | K 2 YR/ 24 HR STORM WATER SURFACE ELEVATION (FT) | SIDE SLOPES (Z) (FT) | BOX SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INFILTRATION BASIN #3 (SCM NO. 7, POA008) | 30" HDPE | 736.00 | 736.00 | 4.0 | 737.50 | 10.0 | 746.00 | 12.0 | 748.00 | 742.25 | 737.35 | 3 | 48"W x 48"H |
| INFILTRATION BASIN #4 (SCM NO. 9, POA009) | 36" HDPE | 743.00 | 744.00 | 4.0 | 744.50 | – | – | – | – | 750.10 | 744.78 | 3 | 48"W x 48"H |

4 PERMANENT OUTLET STRUCTURE DETAILS

N.T.S.

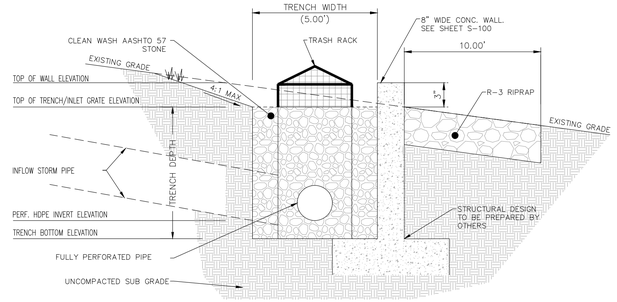



| SCM ID | TOP OF BERM ELEVATION (TOB) (FT) | EMERGENCY SPILLWAY CREST (ESC) (FT) | EMERGENCY SPILLWAY WIDTH (ESW) (FT) | MAX. 100-YR WATER ELEVATION (FT) | EMERGENCY SPILLWAY LENGTH (ESL) (FT) | BOTTOM OF BASIN (BB) (FT) | PROPOSED EROSION CONTROL BLANKET MATERIAL (ECB) |
|---|---|---|---|---|---|---|---|
| INFILTRATION BASIN #3 (SCM NO. 7, POA008) | 745.00 | 743.50 | 10 | 742.28 | 95 | 736.00 | NAG P-300 |
| INFILTRATION BASIN #4 (SCM NO. 9, POA009) | 753.00 | 751.40 | 10 | 750.06 | 80 | 744.00 | NAG P-300 |

NOTE:
1. THE CONSTRUCTION MATERIAL OF THE EMERGENCY SPILLWAYS SHALL EXTEND ALONG THE UPSTREAM AND DOWNSTREAM BERM EMBANKMENT SLOPES.
2. THE UPSTREAM EDGE OF THE EMERGENCY SPILLWAY SHALL BE A MINIMUM OF THREE FEET ABOVE THE BOTTOM OF BASIN..
3. THE DOWNSTREAM SLOPE OF THE SPILLWAY SHALL, AS A MINIMUM, EXTEND TO THE TOE OF THE BERM EMBANKMENT.

5 EMERGENCY SPILLWAY DETAIL

N.T.S.




| TRENCH BOTTOM ELEV. (FT.) | PERF. HDPE DIAMETER (IN.) | PERF. HDPE ELEVATION (FT.) | TRENCH DEPTH (FT.) | TRENCH TOP ELEV. (FT.) | INLET GRATE ELEV. (FT.) | TOP OF WALL ELEV. (FT.) | TRENCH LENGTH (FT.) |
|---|---|---|---|---|---|---|---|
| 730.00 | 30.00 | 730.50 | 6.00 | 736.00 | 736.00 | 736.25 | 55.00 |
| 735.50 | 36.00 | 736.00 | 6.50 | 742.00 | 742.00 | 742.25 | 100.00 |

6 CROSS SECTION OF LEVEL SPREADER DETAIL

SCALE: N.T.S.

### LEVEL SPREADER CONSTRUCTION SEQUENCE

1. EXCAVATE TRENCH BOTTOM TO A UNIFORM, UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS AND AT A SLOPE OF 0.0% FROM THE STORM INLET.
2. INSTALL STRUCTURAL CONCRETE CURB/EDGE TO ACT AS LEVEL SPREADER.
3. PLACE NONWOVEN GEOTEXTILE FABRIC ALONG THE BOTTOM AND SIDES OF THE TRENCH. FOLD BACK GEOTEXTILE FABRIC AND TIE INTO ADJACENT SUBGRADE.
4. INSTALL 8" BED BOTTOM STONE. PLACE PERFORATED HDPE PIPE IN THE CENTER OF THE TRENCH.
5. PLACE REMAINING STONE IN 8 INCH LIFTS, LIGHT COMPACTING BETWEEN LIFTS. 3
6. INSTALL R-3 RIPRAP FOR A MINIMUM OF 5 FEET DOWNSLOPE FROM THE EDGE OF LEVEL SPREADER.
7. STABILIZE SURROUNDING AREA IMMEDIATELY.

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL PAUL W. HUGHES ENGINEER PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY TGK

# POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 5

## G. MORRIS SOLAR

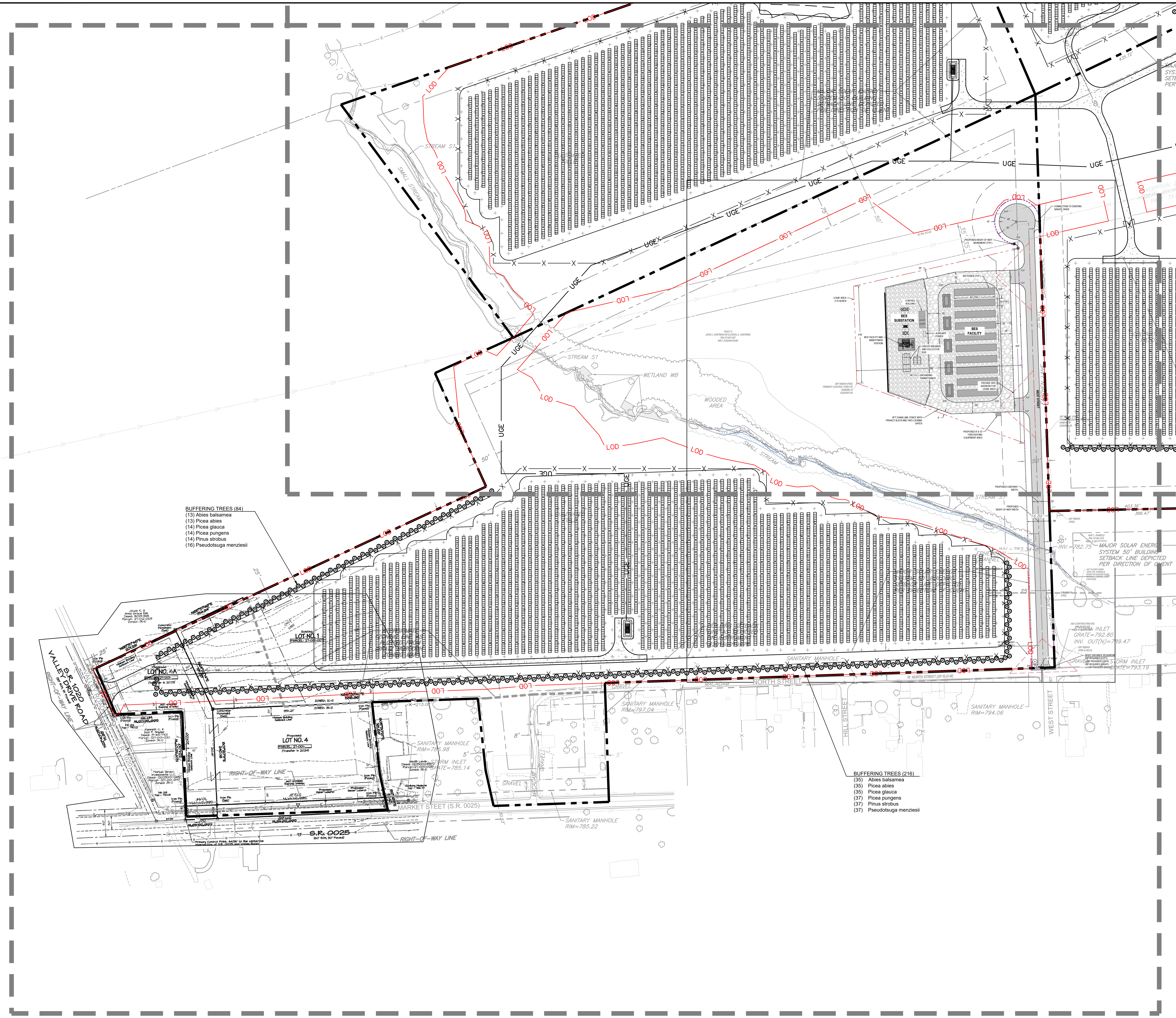
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

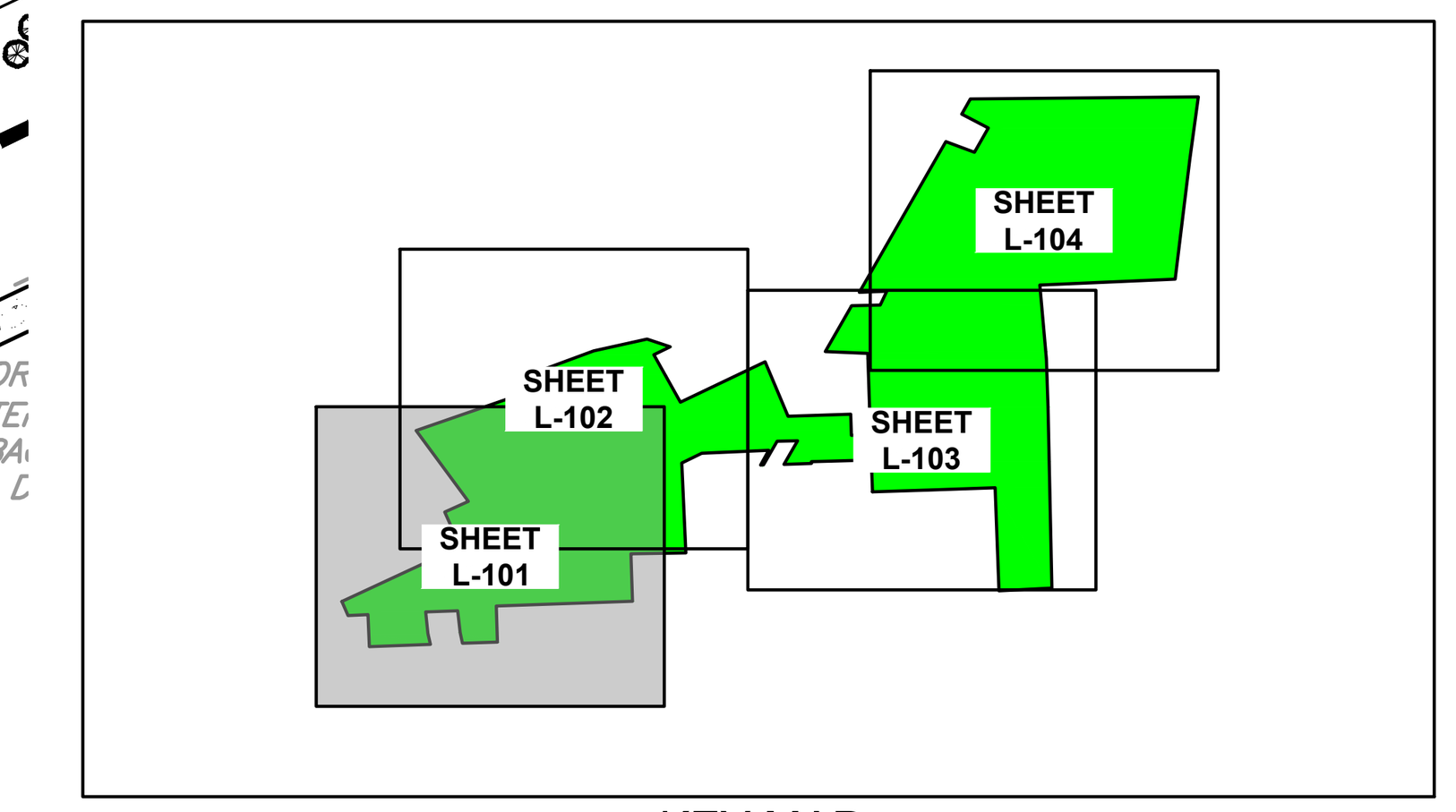
GRATZ BOROUGH, DAUPHIN COUNTY, PA

SHEET NUMBER
C-355

Plotted By: Zurabi Wofos Sheet Set: G Morris Solar Layout: C-355 January 29, 2026 01:53:22pm K:\PHI_PR\112882004 – G Morris Solar – Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\C-355 POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS.dwg
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KEY MAP
SCALE: 1" = 2,000'

## PLANT KEY

| SYMBOL | BOTANICAL NAME | COMMON NAME |
|---|---|---|
| **TREES** | | |
| | BUFFERING TREES | |
| | Abies balsamea | Balsam Fir |
| | Picea abies | Norway Spruce |
| | Picea glauca | White Spruce |
| | Picea pungens | Colorado Spruce |
| | Pinus strobus | White Pine |
| | Pseudotsuga menziesii | Douglas Fir |
| **GROUND COVERS** | | |
| | ERNST MIX 186 | SOLAR FARM SEED MIX |

CALL BEFORE YOU DIG!
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1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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PAUL W. HUGHES
PE079231

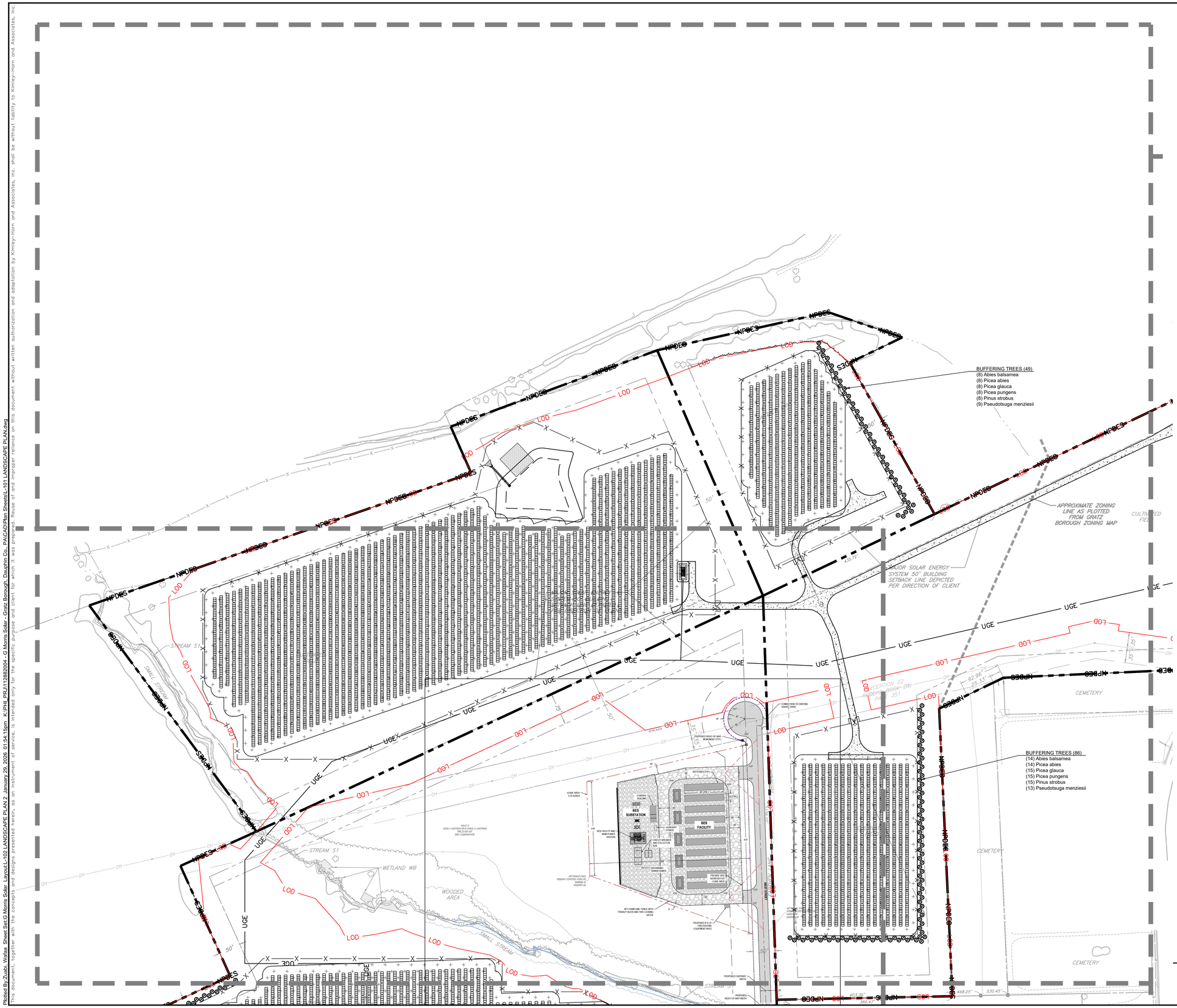
KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY XXX
DRAWN BY XXX
CHECKED BY XXX

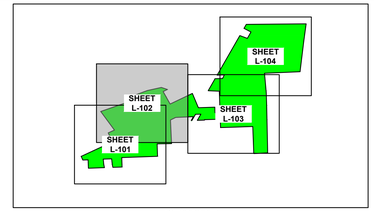
# LANDSCAPE PLAN 1

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC
GRATZ BOROUGH PA

SHEET NUMBER
L-101




KEY MAP
SCALE: 1" = 2,000'

## PLANT KEY

| SYMBOL | BOTANICAL NAME | COMMON NAME |
|---|---|---|
| **TREES** | | |
| | BUFFERING TREES | |
| | Abies balsamea | Balsam Fir |
| | Picea abies | Norway Spruce |
| | Picea glauca | White Spruce |
| | Picea pungens | Colorado Spruce |
| | Pinus strobus | White Pine |
| | Pseudotsuga menziesii | Douglas Fir |
| **GROUND COVERS** | | |
| | ERNST MIX 186 | SOLAR FARM SEED MIX |

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — ENGINEER PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY JK

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

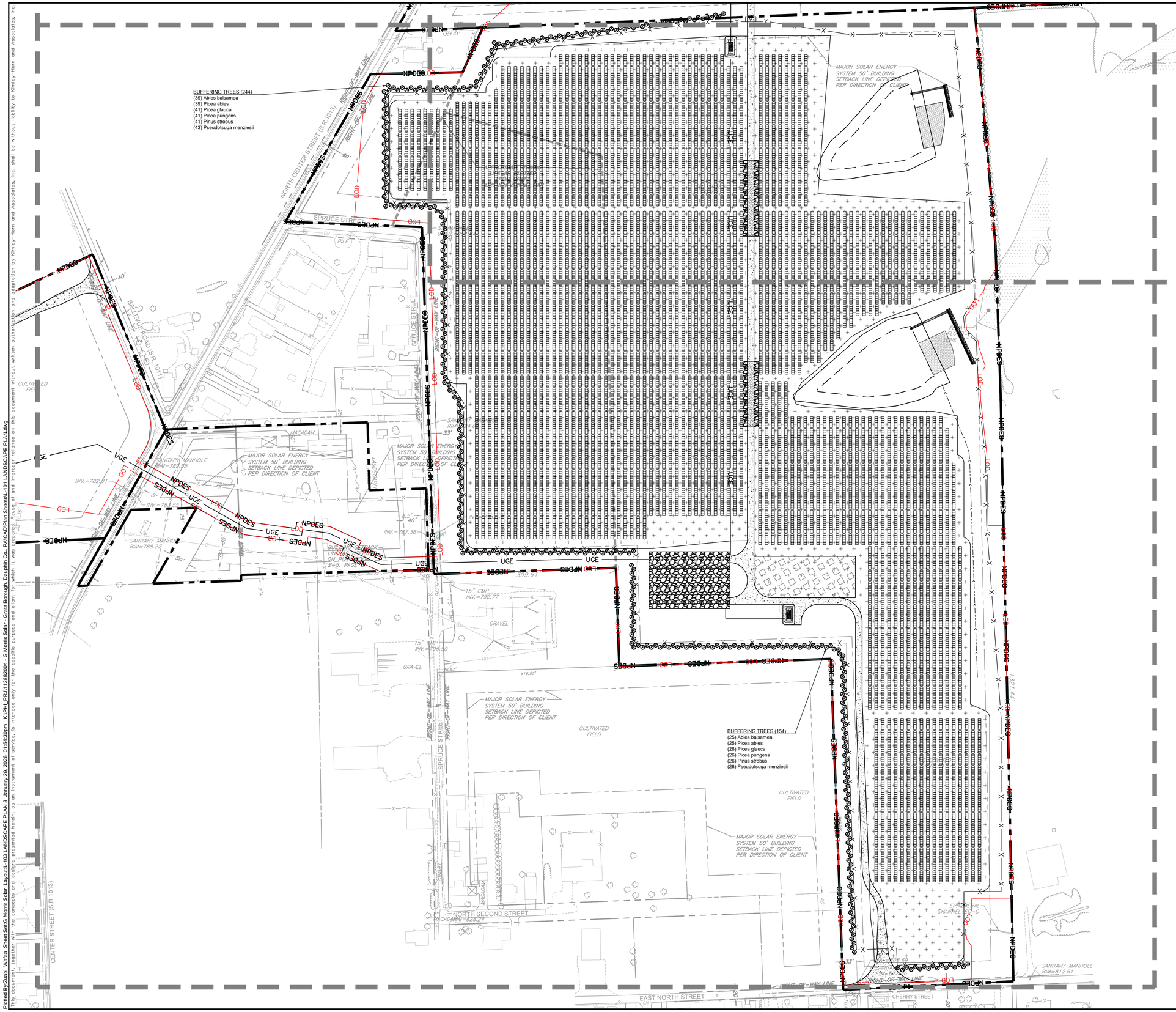
GRATZ BOROUGH PA

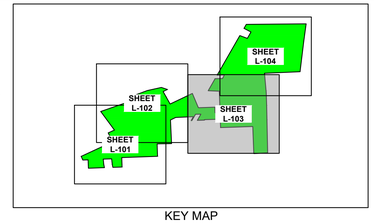
# LANDSCAPE PLAN 2

SHEET NUMBER
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PA 1 One Call
1-800-242-1776
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SERIAL NUMBER: 20213371543

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KEY MAP
SCALE: 1" = 2,000'

## PLANT KEY

| SYMBOL | BOTANICAL NAME | COMMON NAME |
|---|---|---|
| **TREES** | | |
| | BUFFERING TREES | |
| | Abies balsamea | Balsam Fir |
| | Picea abies | Norway Spruce |
| | Picea glauca | White Spruce |
| | Picea pungens | Colorado Spruce |
| | Pinus strobus | White Pine |
| | Pseudotsuga menziesii | Douglas Fir |
| **GROUND COVERS** | | |
| | ERNST MIX 186 | SOLAR FARM SEED MIX |

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PAUL W. HUGHES ENGINEER PE079251

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY JK

# LANDSCAPE PLAN 3

## G. MORRIS SOLAR

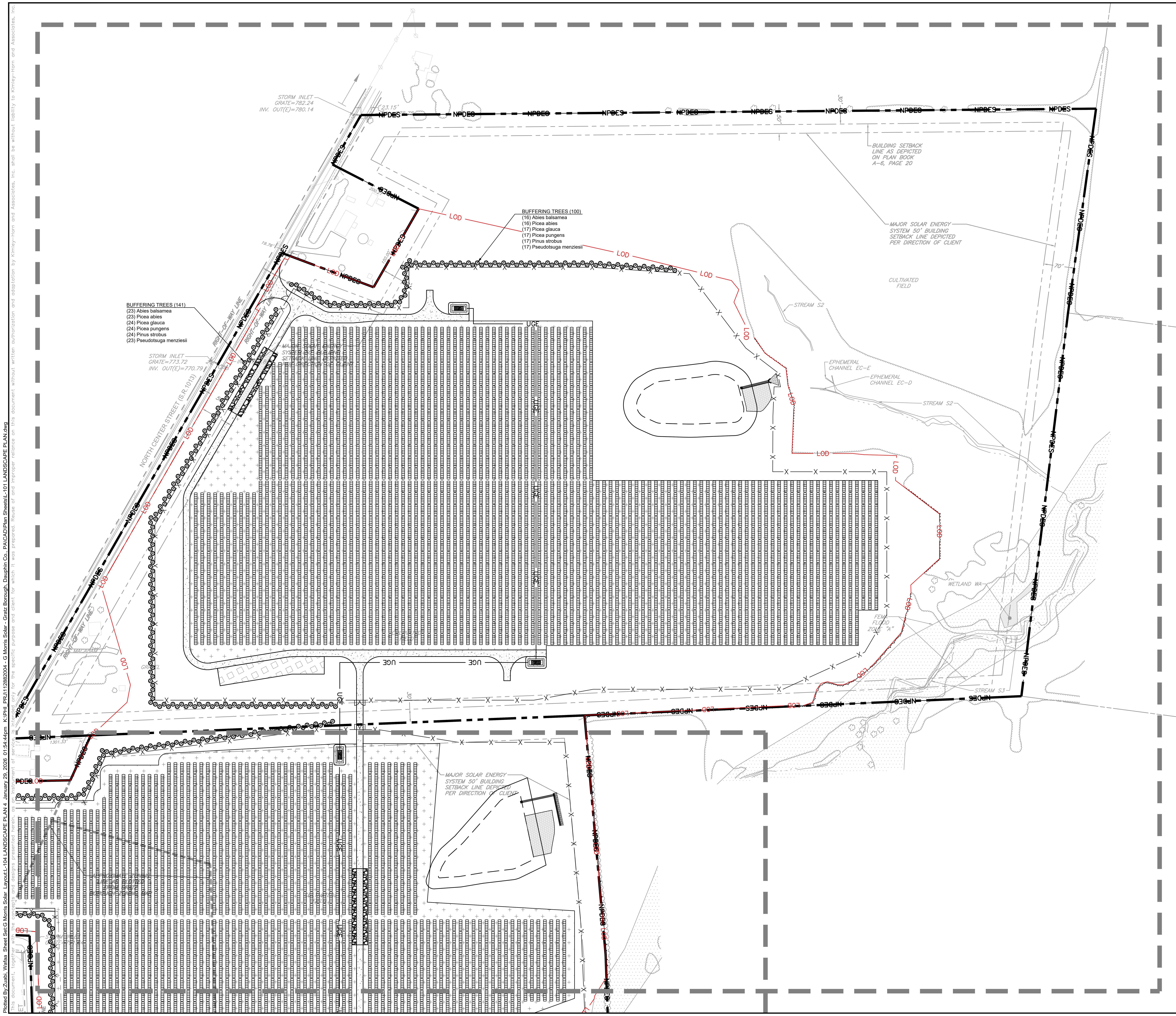
PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

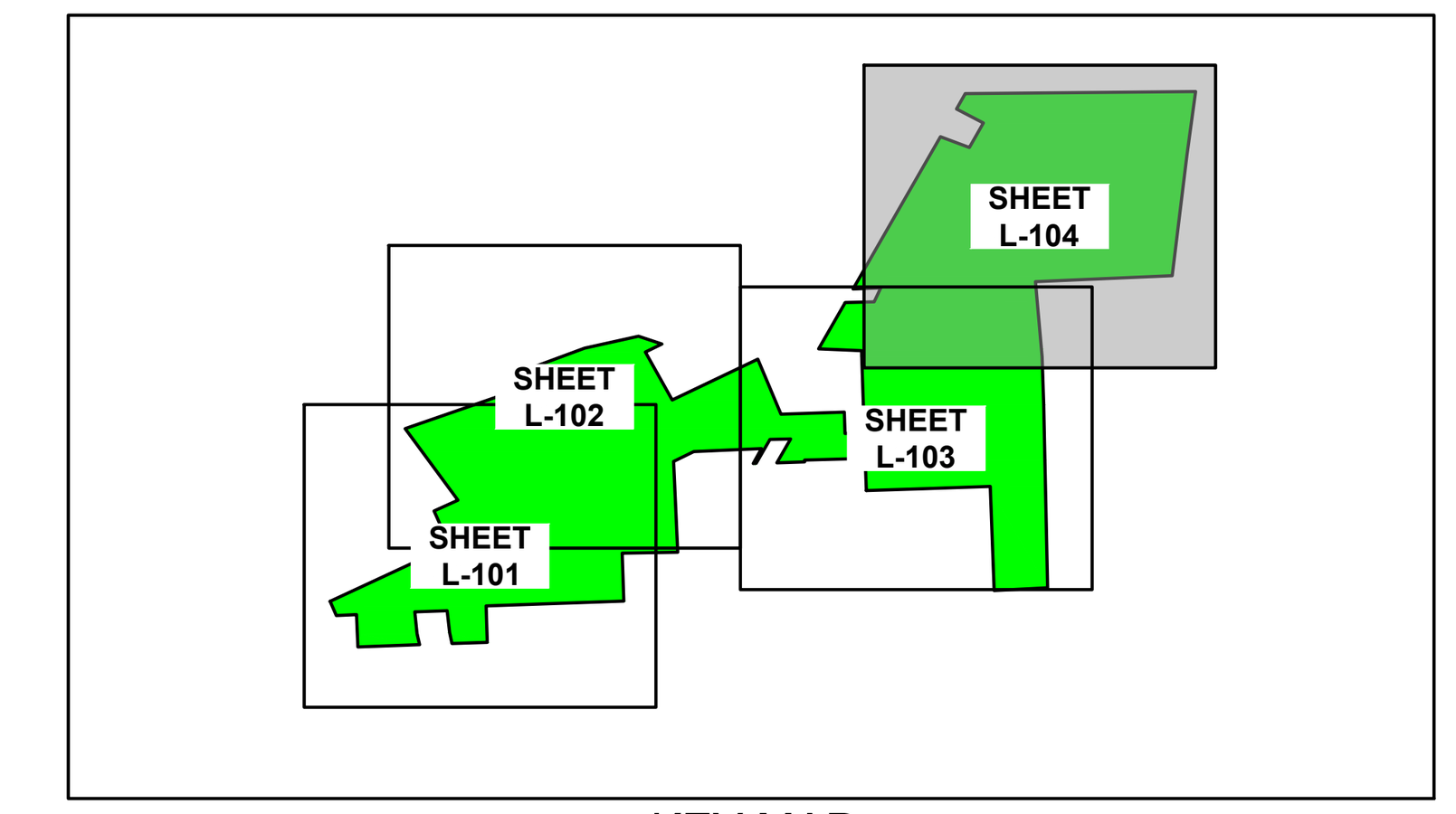
GRATZ BOROUGH PA

SHEET NUMBER
L-103

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE = STOP CALL
PA 1 One Call
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

Plotted By: Zuabi, Wafaa Sheet Set: G Morris Solar Layout: L-103 LANDSCAPE PLAN 3 January 29, 2026 01:54:30pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co, PA\CAD\Plan Sheets\L-101 LANDSCAPE PLAN.dwg
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KEY MAP

SCALE: 1" = 2,000'

## PLANT KEY

| SYMBOL | BOTANICAL NAME | COMMON NAME |
|---|---|---|
| **TREES** | | |
| (tree symbol) | BUFFERING TREES | |
| | Abies balsamea | Balsam Fir |
| | Picea abies | Norway Spruce |
| | Picea glauca | White Spruce |
| | Picea pungens | Colorado Spruce |
| | Pinus strobus | White Pine |
| | Pseudotsuga menziesii | Douglas Fir |
| **GROUND COVERS** | | |
| (hatch) | ERNST MIX 186 | SOLAR FARM SEED MIX |

CALL BEFORE YOU DIG!
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PA 1
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 5 | FINAL LD INITIAL SUBMISSION | 01/30/26 | PJQ |
| 4 | CONDITIONAL PRELIM LD APPROVAL RESUB. | 01/12/26 | PJQ |
| 3 | PER DCCD COMMENTS DATED 11/24/2025 | 12/11/25 | PJQ |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |

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TWO LIBERTY PLACE, 50 SOUTH 16TH STREET, SUITE 3300
PHILADELPHIA, PA 19102
PHONE: 267-687-0150
WWW.KIMLEY-HORN.COM

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — PAUL W. HUGHES — PE079231

KHA PROJECT 112882004
DATE 01/30/2026
SCALE AS SHOWN
DESIGNED BY EJF
DRAWN BY PJQ
CHECKED BY JK

# LANDSCAPE PLAN 4

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

GRATZ BOROUGH PA

SHEET NUMBER
L-104

Plotted By:Zuabi, Wafaa Sheet Set:G Morris Solar Layout:L-104 LANDSCAPE PLAN 4 January 29, 2026 01:54:44pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\L-101 LANDSCAPE PLAN.dwg
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# PERFORMANCE SPECIFICATION

## I. PLANTS

**A. General**

1. Live healthy plants free of dead branches and parts
2. Free of disease, insect, injury and damage
3. Unbroken, intact, dense and solid rootballs and containers, without cracks, flat sides or previously repaired damage.
4. Free of girdling roots or rootbound/circling container conditions
5. Plants of consistent in growth habit and healthy character
6. Free of compromising growth conditions such as weak crotch connections, crossed branches, snags and scars
7. Point of origin growing location within 100 miles of project site
8. Graded, standards, caliper, sizes and stock consistent with *ANSI Z60.1, American Standard for Nursery Stock* most current edition
9. Species identified consistent with the most current editions of: *Hortus Third: Concise Dictionary of Plants Cultivated in the United States and Canada*, and *Manual of Woody Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*
10. All disturbed areas shall be grass seed unless otherwise identified on landscape plans

**B. Trees:**

**1. Deciduous Single Trunk**
- a. Full, straight and upright with consistent symmetrical natural branching pattern throughout
- b. Branching Height-seven (7) feet to lowest branch in two years unless otherwise required by local jurisdiction

**2. Deciduous Multi-Trunk**
- a. Full and upright with straight consistent symmetrical natural branching pattern throughout
- b. Canes evenly spaced and of similar growth habit
- c. Free of suckers and extraneous branching

**3. Evergreen Single-Trunk**
- a. Full and upright with continuous symmetrical dense natural habit
- b. Clear branching height twelve (12) inches above top of football
- c. Free of suckers and extraneous branching
- d. Do not shear or otherwise prune to shape plantings

**C. Evergreen and Deciduous Shrubs**
1. Full, dense and naturally symmetrical.
2. Consistent with container and/or balled and burlapped size
3. Free of suckers and extraneous branching
4. Do not shear or otherwise prune or shape plantings

**D. Evergreen and Deciduous Groundcover**
1. Full and dense in pots or flats

**E. Perennials and Seasonal Color**
1. Full and dense in pots or flats

**F. Turf Grass**

**1. Subgrade**
- a. Soil Mix-10% Compost, 90% topsoil by volume
- b. Preparation-loosen subgrade to a minimum depth of four (4) inches. Remove all non-natural materials including litter, stones, sticks and all items greater than ¾ inch in any dimension
- c. Preparation-spread soil mix at a depth of four (4) inches continuously to meet grade elevations shown on drawings. Allow for thickness of sod when applicable

**2. Grass Sod**
- a. Install not longer than twenty-four (24) hours from harvest
- b. Grass bed not less than two (2) inches in continuous thickness
- c. 100% continuous live sod coverage after first growing season and at end of warranty period.
- d. Of uniform non-varying density and continuous texture quality capable of growth and development immediately upon installation. Weed and noxious plant free
- e. Stagger installation rows and place aligned parallel to contours
- f. Fill joints solidly with planting bed preparation soil
- g. Provide anchor pins at twenty-four (24) inches on center for slopes greater than 4:1

**3. Grass Seed**
- a. Mix approved by the Landscape Architect
- b. Provide first and new of year seed crops in mix free of weed seeds and deleterious matter
- c. Provide seed mix not greater than 15% annual or perennial rye
- d. Coverage 85% continuous coverage live stand after first growing season and at end of warranty
- e. Replacement or overseeding mixes consistent with original application/installation
- f. Provide erosion blankets or other slope retention methods as noted on drawings

## II. Materials and Appurtenances

**A. Testing**
1. Materials testing information/certificates/dated labels shall be current to the project and performed/certified not greater than 120 calendar previous days from current date of submittal for review

**B. Top Soil**
1. Neutral Ph balance 5.5 -7.5. Friable and containing 2.0-5.0% organic matter by dry weight. Continuously free of non-soil items such as stones, debris, sticks, trash, and deleterious matter greater than ¾ inch in any direction. Clay content shall not exceed 25%.Gravel content shall not exceed 10%. Silt shall not exceed 25%

**C. Use of Existing Topsoil**
1. Existing topsoil on-site may be repurposed with prior Owner approval. Contractor shall provide soil testing and additive program that demonstrates consistent performance and characteristics and composition as identified herein. Owner shall approve soil testing and soil amendment/additive methods and procedures

**D. Shredded Hardwood Mulch**
1. 100% organic shredded first year hardwood free of deleterious matter, rock, gravel and weed seed. Neutral Ph balance 5.5-7.5

**E. Compost Ph**
1. Balanced 5.0-8.5 mature, stable and weed free produced by natural aerobic decomposition. Free of visible contaminants and toxic substances. Not greater than 5% sand, silt, clay or rock by dry weight. Consistent with US-EPA CFR Title 40 Part 503 Standards for Class A biosolids

**G. Compost Testing**
1. Prior to delivery on-site, the following items are required for approval by Owner: Feedstock percentage in final compost product; statement that the products meets federal, state and local health safety requirements
2. Provide copy of lab analysis less than 120 calendar days old verifying that the product meets described physical requirements; chemical contaminants; Ph; physical contaminants; biological contaminants (including a statement that fecal coliform and salmonella testing and results comply with requirements of the US Composting Council Seal of Testing approval programs

**H. Planting Mix**
1. 85% topsoil and 15% Compost

**I. Fertilizer**
1. Granular 10% nitrogen, 6% Phosphorous, 4% Potassium granular form with 50% Nitrogen in organic form. Product and Material Safety Data as approved by Owner

**J. Herbicide**
1. Product and Material Safety Data as approved by Owner

**K. Water**
1. Potable only unless otherwise approved by Owner

**L. Hardwood Stakes**
1. 2 x 2 x 48 inch square of sound hardwood, painted flat black on all sides

**M. Tree Ties**
1. Villa Non-Abrasive Rubber Tree Ties or approved equal

**N. Filter Fabric**
1. Mirafi 140-N or approved equal

**O. Steel Edging**
1. 1/8-inch x 4-inch in full sections. Ryerson, Timec or approved equal with integral stakes. No open corners. Corners shall be formed and trued to compliant angle or welded closed

**P. River Stone**
1. Locally sourced, river rounded, unfaceted river stone/cobbles.
2. Size shall not exceed 3 total inches in any dimension.
3. Color and texture approved by Owner
4. When placed in concrete or mortar setting bed, tamp to secure and brush clear joints.
5. Concrete or mortar as approved by owner.

## III. Execution

**A. Site Conditions**
1. Inspect site and notify Owner in writing of acceptance with indication that project conditions are acceptable are suitable to proceed with work. Notify Owner of any existing damage and/or other conflicting conditions.
2. Do not proceed with work until unsatisfactory conditions have been satisfactorily remedied. Notify Owner of acceptance prior to commencement of work.
3. Notify Owner in writing of any conditions that may preclude successful completion of work including items such as coordination with other trades, incomplete work, drainage, soil temperature and/or composition, access to storage/work areas, damage to conditions, etc.
4. Notify Owner in writing immediately of any items that may influence work schedule, timing of tasks, materials delivery and/or installation and warranty responsibilities.
5. Coordinate and cooperate with other trades working in and adjacent to work areas. Examine drawings of other trades which show development of the entire project and become familiar with the scope of required work by others.

**B. Planting Seasons**

Recommended seasons are a general guide based on historical climatic data and typical performance of plantings, and which vary dependent on project-specific environmental conditions. Due to construction schedules, recommended planting seasons may/may not coincide with request(s) for certificate of occupancy for projects. Coordination of planting installation and seasons shall be reviewed with Owner on an individual project basis.

**1. Deciduous and Evergreen Trees**

Do not install/plant the following trees between September 15 and March 15
1. Oaks (Quercus Sp., Such as Q. rubra, Q. alba, Q. phellos, Q. coccinnea)
2. Dogwood (Cornus Sp.)
3. Sweetgum (Liquidambar Sp.)
4. All Conifers and Evergreens except White Pine (Pinus strobus Sp.)

**2. Deciduous and Evergreen Shrubs**
- a. Install/plant between March 15 and June 15 and/or September 15 and November 30

**3. Perennials**
- a. Install/plant between March 15 and June 15 and/or September 15 and November 30

**4. Spring Flowering Bulbs**
- a. Install/plant between September 15 and December 15

**5. Seasonal Annuals**
- a. Install/plant in season per approved schedule

**6. Turf Grass**
- a. Install/plant between March 15 and May 15 and/or September 15 and November 30
- b. Do not install/plant seed or sod turf grass areas when ambient air temperature is below forty (40) degrees Fahrenheit, or forecast for a twelve (12) hour period after completion of work

**7. No Plant Installation**
- a. Do not install plantings or turf grass between June 15 and September 15, without approval by Owner

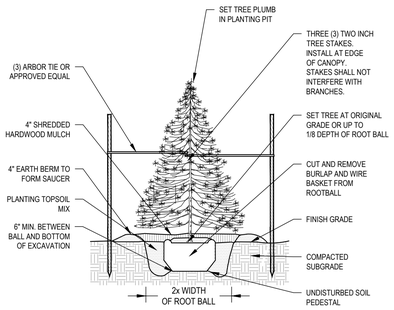
**C. Positioning & Location of Plantings**
1. Position plants to show the most-prominent and well-formed face to most-public view
2. Field locate plants and location/spacing/dimension of planting beds on project site prior to beginning installation
3. Verify location of individual plants and plant beds prior to beginning installation. Do not proceed without Owner approval

**D. Implementation**
1. Pursue work continuously without delay or interruption until completion unless notified otherwise by Owner
2. Provide project submittals ahead of commencement of work. Landscape Architect requires a minimum of ten (10) working days from date of receipt for review of submittals and response to Owner and Contractor. Plan accordingly for procurement of materials
3. Continuously update implementation schedule and notify Owner of progress. Delays related to material availability are not cause for non-completion of scheduled delivery of work.
4. Report delays due to weather or site conditions immediately upon finding. Provide recommendation for remedy of schedule delays. Do not work, place or modify frozen soil
5. Report delays due to extraordinary natural or other conditions beyond control of Contractor

**E. Clean Up**
1. Remove trash, debris and work materials from site prior to request for substantial completion. Thoroughly clean surfaces impacted by work including building, parking areas, roadways, sidewalks, signs, lights, site furnishings, etc.
2. Repair any damage to existing conditions that occurred during execution of work.
3. All clean-up and demobilization procedures shall be performed to satisfaction of the Owner and Landscape Architect.

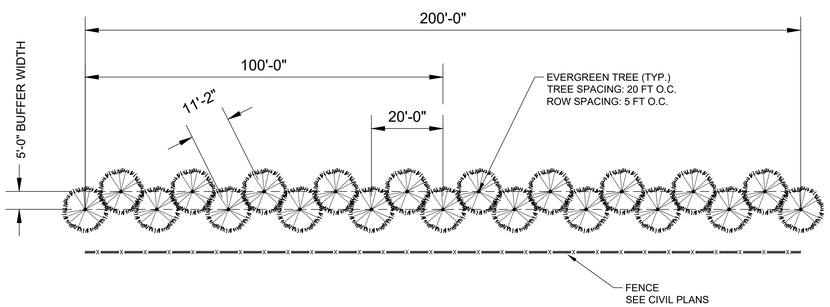
# GENERAL NOTES

1. Plants shall be healthy, vigorous material, free of pests and diseases and are subject to approval/rejection of the Landscape Architect prior to, during and after installation.
2. Contractor shall identify all materials at growing location prior to purchase and submit digital photographs, and source list to the Landscape Architect for approval at a minimum of six (6) calendar weeks prior to installation. Plants not approved shall be resourced and resubmitted.
3. Planting beds and individual tree plantings shall be mulched continuously as specified.
4. Prior to construction the contractor shall be responsible for locating underground utilities and execute work in a manner that avoids damage to utilities during the course of work. Contractor shall be responsible or remedy of any damage to utilities, structures, site appurtenances that occur as a result of landscape related work.
5. Contractor is responsible for verifying quantities shown on documents. Field adjustments shall be approved by Landscape Architect prior to installation. Quantities indicated on drawings are for reference. It is the Contractor's responsibility to ensure full coverage of plants at the indicated spacing.
6. Contractor is responsible for maintenance of all plantings including, but not limited to watering, mowing, edging, spraying, mulching, fertilizing, of plantings and turf areas for one (1) calendar year from date of certificate of occupancy. Contractor is responsible for warranty of all plant material for a period of one (1) calendar year from date of certificate of occupancy. Warranty replacement planting shall meet or exceed the original specification identified on drawings. Replacement planting shall extend the same warranty as originally installed materials. Plantings and grass areas shall be flourishing and fully thriving at end of warranty period.
7. Plants identified for replacement by Owner, Landscape Architect shall be replaced immediately by the Contractor unless otherwise agreed upon. Plantings (trees, shrubs, groundcover) subject to replacement by warranty shall exhibit characteristics of 30% dead-per individual plant, non-contributing or disease compromised. Grass areas suitable for acceptance shall demonstrate 85% sustained/consistent and continuous, densely established coverage. Contractor shall perform a site review at end of warranty period and provide the Owner with written documentation of the site, including plant health, warranty replacement items, and conditions that may be influencing plant health. Contractor shall remove from plants and site, all staking and guying material at end of warranty period.
8. Contractor shall comply with all local, state and federal requirements, codes and regulations related to the work undertaken.
9. All material including planting operation appurtenances shall be of domestic origin manufacture and sourced within 100 miles of the project site.
10. Contractor is responsible for coordination among trades operating on site. Coordination and if necessary resulting modifications to schedules are responsibility of the Contractor.




1 EVERGREEN TREE PLANTING

NOT TO SCALE




2 BUFFER PLANTING DETAIL

1" = 20' - 0"

### GENERAL BUFFER NOTES:

1. TWO STAGGERED ROWS OF PLANTING CONSISTING OF A MIX OF EVERGREEN TREES.
2. ONE SPECIES OF TREE MAY NOT ACCOUNT FOR MORE THAN 25% OF THE TOTAL TREE SPECIES USED ON THE PROJECT.
   - 1,074 TOTAL TREES X 25% = 268 TREES MAX PER SINGLE SPECIES
3. TREES 6' HEIGHT MINIMUM AT TIME OF PLANTING.
4. ELEVEN TREES PER 100 LF OF BUFFER. SEE BUFFER CALCULATIONS BELOW.

### BUFFER CALCULATIONS:

| | |
|---|---|
| **TOTAL BUFFER LENGTH:** | **10,432 LF** |
| EVERGREEN TREES PER 100 LF: | 11 TREES |
| **TOTAL EVERGREEN TREES :** | **1,147 TREES** |
| **TOTAL EVERGREEN TREES PROVIDED :** | **1,074 TREES** |

### PLANT SCHEDULE

| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE AT PLANTING | ROOT |
|---|---|---|---|---|---|---|
| TREES | | | | | | |
| | | 1,074 | BUFFERING TREES | | | |
| | AB | | Abies balsamea | Balsam Fir | 6` Ht. | B&B |
| | PA | | Picea abies | Norway Spruce | 6` Ht. | B&B |
| | PG | | Picea glauca | White Spruce | 6` Ht. | B&B |
| | PC | | Picea pungens | Colorado Spruce | 6` Ht. | B&B |
| | PS | | Pinus strobus | White Pine | 6` Ht. | B&B |
| | PD | | Pseudotsuga menziesii | Douglas Fir | 6` Ht. | B&B |

| SYMBOL | CODE | QTY | BOTANICAL NAME | COMMON NAME | SIZE / TYPE | QTY / RATE |
|---|---|---|---|---|---|---|
| GROUND COVERS | | | | | | |
| | E186 | 3,441,531 sf | ERNST MIX 186 | SOLAR FARM SEED MIX | --- | 4 LBS PER 1000 SF |

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PA 1 CALL
1-800-242-1776
SERIAL NUMBER: 20213371504
SERIAL NUMBER: 20213371543

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| 1 | PER BOROUGH COMMENTS DATED 5/22/2025 | 6/13/25 | JK |
| 2 | INITIAL NPDES SUBMISSION TO DCCD | 10/08/25 | JK |
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# LANDSCAPE NOTES AND DETAILS

# G. MORRIS SOLAR

PREPARED FOR
G. MORRIS SOLAR LLC C/O BIRCH CREEK DEVELOPMENT, LLC

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Plotted By:Zuah, Wafaa Sheet Set:G Morris Solar Layout:L-105 LANDSCAPE NOTES AND DETAILS January 29, 2026 01:54:49pm K:\PHI_PRJ\112882004 - G Morris Solar - Gratz Borough, Dauphin Co., PA\CAD\Plan Sheets\L-101 LANDSCAPE PLAN.dwg
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