

CS Energy, LLC
Petition No. 1345A

Interrogatories Connecticut Siting Council Set 1
Dated: July 20, 2020

EXHIBIT B

CIVIL ENGINEERING PLANS

STONINGTON SOLAR PROJECT

15 MW AC SINGLE AXIS TRACKER SYSTEM

SITE ADDRESS: ELLA WHEELER ROAD, NORTH STONINGTON, CT 06359
SITE COORDINATES: 41.42°N, 71.84°W

SCOPE OF WORK

DEVELOP A 15 MW AC SOLAR PHOTOVOLTAIC ELECTRICAL GENERATING FACILITY ON APPROXIMATELY 162 ACRES OF LAND. THE SOLAR POWER PLANT WILL BE INSTALLED ON NEXTRACKER HORIZONTAL SINGLE AXIS TRACKER SYSTEM.

BUILDING CODES AND DESIGN REFERENCES

AUTHORITIES HAVING JURISDICTION:
NORTH STONINGTON SITING COUNCIL

CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

APPLICABLE CODES:

- BUILDING CODE:**
- NORTH STONINGTON ORDINANCE
 - CONNECTICUT STATE BUILDING CODE
 - INTERNATIONAL BUILDING CODE (IBC) 2018

GEOTECH REPORT BY:

TERRACON CONSULTANTS INC.
201 HAMMER MILL ROAD
ROCKY HILL, CT 06067
TERRACON PROJECT NO.
J21751412

OWNER INFORMATION, PROJECT TEAM

PROJECT OWNER:

ENERPARC, INC
1999 HARRISON ST., SUITE 830
OAKLAND, CA 94612

GENERAL CONTRACTOR:

CS ENERGY
2405 LINCOLN HIGHWAY
EDISON, NJ 08817

CIVIL ENGINEER:

SIERRA OVERHEAD ANALYTICS
PO BOX 1716
TWIN HARTE, CA 95383

CONTACT: DARIN GALLOWAY, PE
DGALLOWAY@SIERRAOVERHEAD.COM
(775) 848-5540

SITE LOCATION AND AERIAL VIEW



SITE LOCATION

SITE

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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal: Darin Galloway, No. 34152, Licensed Professional Engineer]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

TITLE:
COVER SHEET

SHEET:
C-001



GENERAL CIVIL NOTES:

- 1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE SPECIFICATIONS, TOWN OF NORTH STONINGTON ORDINANCES, AND CONNECTICUT STATE BUILDING CODES, CONNECTICUT GENERAL STATUTES, AND THE INTERNATIONAL BUILDING CODE.
- 2. CONNECTICUT STATE BUILDING CODES, CONNECTICUT GENERAL STATUTES AND NORTH STONINGTON TOWN ORDINANCES SHALL HAVE PRECEDENCE OVER SUBMITTED DRAWINGS AND SPECIFICATIONS.
- 3. ALL EARTHWORK AND TESTING SHALL ADHERE TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING REPORT (GEOTECH REPORT), PROVIDED BY TERRACON CONSULTANTS, INC. PROJECT NO J2175142.
- 4. EARTHWORK ON THE SITE SHALL BE OBSERVED AND EVALUATED BY THE GEOTECHNICAL ENGINEER OF RECORD (G-EOR).
- 5. THE EVALUATION OF EARTHWORK SHALL INCLUDE OBSERVATION AND TESTING OF ON-SITE BACKFILL MATERIAL AND OTHER GEOTECHNICAL CONDITIONS EXPOSED DURING EQUIPMENT PAD EXCAVATIONS AND ROAD IMPROVEMENT CONSTRUCTION AT THE DIRECTION OF THE G-EOR.
- 6. WHERE DEVIATIONS EXIST BETWEEN THESE SPECIFICATIONS/DESIGN AND THE GEOTECH REPORT, THIS DESIGN SHALL TAKE PRECEDENCE.
- 7. NOTES AND DETAILS NOTED AS "TYPICAL," SHALL BE USED WHENEVER APPLICABLE. SPECIFIC DETAILS AND NOTES TAKE PRECEDENCE OVER TYPICAL DETAILS AND NOTES.
- 8. DRAWINGS, SPECIFICATIONS, DETAILS, AND NOTES DEPICTED IN THIS DESIGN REPRESENT THE FINISHED PRODUCT AND DO NOT INDICATE THE MEANS, METHODS, PROCEDURES, OR SEQUENCE OF CONSTRUCTION UNLESS SPECIFICALLY NOTED.
- 9. CHANGES OR DEVIATIONS FROM THE DRAWINGS, SPECIFICATIONS, DETAILS, AND NOTES DEPICTED IN THIS DESIGN ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE CIVIL ENGINEER OF RECORD (C-EOR).
- 10. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONSTRUCTION SURVEYING STAKES SET BY THE OWNER. ANY DEVIATIONS FROM EXISTING GRADES AS SHOWN ON THE PLANS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND C-EOR.
- 11. REQUESTS FOR INFORMATION (RFIs) FOR CLARIFICATION OF THE INTENT OF THE DESIGN SHALL BE SUBMITTED TO THE C-EOR. RFIs SHALL INCLUDE A DETAILED WRITTEN STATEMENT THAT INDICATES THE SPECIFIC DRAWINGS OR SPECIFICATIONS IN NEED OF CLARIFICATION AND THE NATURE OF THE CLARIFICATION REQUIRED. THE C-EOR SHALL RESPOND IN WRITING AND ISSUE CLARIFICATIONS AS NECESSARY. RESPONSES TO RFIs DO NOT CONSTITUTE APPROVED DESIGN CHANGES.

EARTHWORK:

- 12. COMPACTION STANDARD FOR NATIVE, SCARIFIED, AND RE-COMPACTED SUBGRADES SHALL BE 95% MAXIMUM DRY DENSITY (MDD) BY MODIFIED PROCTOR DRY DENSITY (ASTM D1557), METHOD C.
- 13. COMPACTION STANDARD FOR STRUCTURAL FILL BENEATH CONCRETE PADS SHALL BE 95% MDD BY ASTM D1557.
- 14. MOISTURE CONTENT OF SOILS SHALL BE IN ACCORDANCE WITH THE GEOTECH REPORT AT THE TIME OF PLACEMENT AND COMPACTION.
- 15. PLACE FILL MATERIAL IN MAXIMUM LIFTS OF 12" LOOSE THICKNESS WHEN USING SELF PROPELLED HEAVY COMPACTORS.
- 16. FILL MATERIAL TYPES SHALL BE IN ACCORDANCE WITH STRUCTURAL FILL TYPES LISTED IN THE GEOTECH REPORT.
- 17. PLACE FILL MATERIAL IN MAXIMUM LIFTS OF 6" LOOSE THICKNESS WHEN USING HAND GUIDED COMPACTING EQUIPMENT.
- 18. PRIOR TO PLACING FILL OR COMPACTING SCARIFIED SOIL IN FOUNDATION AREAS, ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION AREAS. THIS SHALL INCLUDE THE REMOVAL OF ALL VEGETATION AND TOPSOIL, DEBRIS, LOOSE AND DISTURBED SOIL, CONTAMINATED SOIL AND OTHER DELETERIOUS MATERIALS THAT MAY EXIST WITHIN THE AREA OF THE PROPOSED CONSTRUCTION.
- 19. IF UNDERGROUND FACILITIES ARE ENCOUNTERED DURING SITE CLEARING, CONTRACTOR SHALL IMMEDIATELY NOTIFY C-EOR SO THAT A SOLUTION CAN BE CREATED TO PROTECT AND/OR RELOCATE (E) UTIL.
- 20. DRY AND LOW-DENSITY SOIL SHALL BE REMOVED OR WETTED AND COMPACTED IN-PLACE PRIOR TO PLACING ADDITIONAL FILL OVER THE MATERIAL.
- 21. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND VOLUMES PRIOR TO CONSTRUCTION.
- 22. MATERIAL QUANTITIES SHOWN IN THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL MATERIAL QUANTITIES PRIOR TO CONSTRUCTION.
- 23. ORGANIC SOILS SHALL BE LEFT IN PLACE IN NON-STRUCTURAL AREAS SUCH AS WITHIN THE ARRAY AREAS.
- 24. VEGETATION REMOVAL SHALL ONLY TAKE PLACE IN AREAS TO BE DISTURBED, CONTRACTOR SHALL MINIMIZE DISTURBANCE OF VEGETATION DUE TO CONSTRUCTION ACTIVITIES.
- 25. IN ROAD AND EQUIPMENT PAD CONSTRUCTION LOCATIONS, NATIVE TOPSOIL WILL BE REMOVED AND SPREAD ON SITE.
- 26. IN GRADING AREAS, NATIVE TOPSOIL SHALL BE REMOVED AND STOCKPILED NEAR THE GRADING AREAS. WHEN FINAL GRADES ARE ACHIEVED, NATIVE TOPSOIL SHALL BE SPREAD OVER THE GRADED AREA FOR RE-VEGETATION AND STABILIZATION ACTIVITIES.

SITE ACCESS ROADS (INTERNAL ROADS):

- 29. SITE ACCESS ROAD CONSTRUCTION SHALL CONSIST OF 12" OF SCARIFIED, MOISTURE CONDITIONED, AND COMPACTED NATIVE SUBBASE MATERIAL (SUBBASE); GEOTEXTILE FABRIC; AND 12" OF COMPACTED AGGREGATE BASE MATERIAL (SURFACE COARSE).
- 40. PRIOR TO PLACING SURFACE COARSE OR COMPACTING SUBBASE IN PROPOSED ROADWAY LOCATIONS, ALL UNSUITABLE MATERIAL SHALL BE REMOVED. THIS SHALL INCLUDE THE REMOVAL OF ALL VEGETATION AND TOPSOIL, DEBRIS, LOOSE AND DISTURBED SOIL, CONTAMINATED SOIL AND OTHER DELETERIOUS MATERIALS THAT MAY EXIST WITHIN THE AREA OF THE PROPOSED ROADWAY CONSTRUCTION.
- 41. SURFACE COARSE SHALL HAVE A MINIMUM COMPACTED THICKNESS OF 12" OF CRUSHED ANGULAR AGGREGATE RANGING IN SIZE FROM 1/2" TO 1 3/4".
- 42. SURFACE COARSE THICKNESS SHALL BE MEASURED AFTER FULL COMPACTION.
- 43. A MIRAFI 500X, OR EQUIVALENT GEOTEXTILE FABRIC SHALL BE PLACED ABOVE SCARIFIED AND COMPACTED NATIVE SUBBASE PRIOR TO PLACEMENT OF SURFACE COARSE MATERIAL.
- 44. SCARIFY (OR TILL), WET AND COMPACT NATIVE SUBBASE MATERIAL TO 12" DEPTH MINIMUM BEFORE ADDING GEOTEXTILE FABRIC OR AGGREGATE SURFACE COARSE.
- 45. NATIVE SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY (MDD) PER ASTM D1557, OPTIMUM MOISTURE CONTENT SHALL BE IN ACCORDANCE WITH THE GEOTECH REPORT.
- 46. AGGREGATE SURFACE COARSE SHALL BE COMPACTED TO 95% MDD PER ASTM D1557, 0 TO 2% OPTIMUM MOISTURE CONTENT AND CROWNED 2%.
- 47. SITE ACCESS ROADWAYS SHALL BE CONSTRUCTED AT OR NEAR EXISTING GRADE, U.N.O. WITH A VERTICAL TOLERANCE OF +/- 2".
- 48. POSITIVE DRAINAGE SHALL BE MAINTAINED ACROSS ROADS.
- 49. ON-SITE ROADWAY SLOPES SHALL NOT EXCEED 5%.

CULVERTS:

- 50. BACKFILLING SHALL BE PERFORMED IN ACCORDANCE WITH CT DOT STANDARDS AND SPECIFICATIONS.
- 51. BACKFILLING ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR ADJOINING FILL MATERIAL.
- 52. PLACE FILL AROUND CMP IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES THICK AND COMPACT TO 95% MDD STANDARD PROCTOR (ASTM D698).
- 53. FILL MATERIAL SHALL COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO CMP(S)
- 54. ALL CMP SHALL BE ALUMINUM COATED STEEL PIPE CONFORMING TO AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES.
- 55. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., SHALL BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE CMP.
- 56. PIPE CONNECTIONS SHALL BE WATERTIGHT.
- 57. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.
- 58. ALL CONNECTIONS SHALL USE RUBBER OR NEOPRENE GASKETS WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH.
- 59. THE CMP SHALL BE FIRMLY AND UNIFORMLY BEDDED THE ENTIRE LENGTH OF THE PIPE.
- 60. ROCK, SOFT SOIL, SPONGY MATERIAL, OR OTHER UNSUITABLE DELETERIOUS SOIL SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL.

CONSTRUCTION LAYDOWN AREA:

- 61. TEMPORARY LAYDOWN AREAS WILL BE CLEARED AND GRUBBED.
- 62. SCARIFY (OR TILL) NATIVE MATERIAL TO A DEPTH OF 12" AND RECOMPACT, IF NECESSARY.
- 63. PROOF ROLL COMPACTED SUB BASE NATIVE MATERIAL USING A LOADED TRUCK.
- 64. COMPACTION SHALL BE DEEMED ADEQUATE WHEN PROOF ROLL INDICATES 1" OR LESS DEFLECTION.
- 65. COVER TEMPORARY LAYDOWN AREA WITH 4" MIN. DEPTH OF CRUSHED ROCK.
- 66. TEMPORARY LAYDOWN AREAS SHALL BE REMOVED AND MITIGATED TO PRE-CONSTRUCTION GRADE BY SCARIFYING OR TILLING.
- 67. FINAL STABILIZATION OF TEMPORARY LAYDOWN AREAS SHALL BE IN ACCORDANCE WITH ESC SHEETS.

CLEARING AND GRUBBING:

- 68. CLEARING SHALL BE DEFINED AS THE REMOVAL OF PLANTS AT OR ABOVE THE GROUND SURFACE.
- 69. GRUBBING SHALL BE DEFINED AS THE REMOVAL OF ROOTS BENEATH THE GROUND SURFACE.

TEMPORARY SOIL STOCKPILING:

- 70. EXCAVATED SOILS SHALL ONLY BE STOCKPILED IN TEMPORARY LAYDOWN AREAS, WITH THE EXCEPTION OF TOPSOIL.
- 71. TOPSOIL FROM SITE ACCESS ROAD AND EQUIPMENT PAD CONSTRUCTION SHALL BE SPREAD ONSITE.
- 72. TOPSOIL IN GRADING AREAS SHALL BE STOCKPILED NEAR THE GRADING AREA AND SPREAD OVER THE GRADING AREA ONCE FINAL GRADE HAS BEEN ESTABLISHED.
- 73. EXCAVATED SOILS SHALL BE REUSED ON-SITE PLACE SO THAT SITE HYDROLOGY IS NOT ALTERED.
- 74. EXCAVATED SOIL REUSE LOCATIONS SHALL BE PROVIDED TO THE C-EOR FOR APPROVAL.
- 75. EROSION AND SEDIMENT CONTROLS FOR TEMPORARY STOCKPILES SHALL BE IN ACCORDANCE WITH ESC SHEETS AND THE STROMWATER POLLUTION CONTROL PLAN (SWPCP).

GRADING:

- 76. MASS GRADING ACROSS THE ENTIRE SITE SHALL NOT BE PERFORMED.
- 77. GRADING IN SELECT AREAS DEPICTED ON G&D SHEETS IS REQUIRED TO MAINTAIN PIER HEIGHT TOLERANCES.
- 78. GRADING SHALL NOT BE PERFORMED IN WETLANDS, WETLAND SETBACKS, CULTURAL RESOURCE AREAS, OR ENDANGERED/THREATENED SPECIES AREAS.
- 79. ADDITIONAL GRADING AREAS THAT WERE NOT ANTICIPATED IN THIS DESIGN BUT WERE DISCOVERED DURING CONSTRUCTION SHALL BE EVALUATED ON A CASE BY CASE BASIS AS NEEDED.

UTILITY LOCATE:

- 80. PRIOR TO CONSTRUCTION CONTRACTOR SHALL CONTACT CONNECTICUT ONE CALL FOR UTILITY LOCATION SERVICES TO LOCATE ALL PUBLIC AND PRIVATE UTILITIES.
- 81. CONNECTICUT ONE CALL CAN BE REACHED BY CALLING 811 OR 1-800-922-4455.

SURVEY CONTROL (CIVIL SHEETS ONLY):

- 82. HORIZONTAL COORDINATE SYSTEM: NAD 83, CONNECTICUT STATE PLANE SOUTH ZONE, SURVEY FEET.
- 83. VERTICAL DATUM: NAD 83, FEET.
- 84. ANY COORDINATES SHOWN ON CIVIL SHEETS ARE GROUND COORDINATES.

SPECIAL INSPECTIONS:

- 85. SPECIAL INSPECTION AND TESTING FIRM SHALL SUBMIT THE FOLLOWING TO THE OWNER AND C-EOR:
 - 85.1. SPECIAL INSPECTION AND TESTING REPORTS FOR THE FOLLOWING AT A MINIMUM:
 - 85.1.1. PERIODIC VERIFICATION THAT MATERIALS BELOW SHALLOW FOUNDATIONS AND EQUIPMENT PADS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.
 - 85.1.2. PERIODIC VERIFICATION THAT EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND WIDTH AND HAVE REACHED SUITABLE MATERIAL.
 - 85.1.3. PERIODIC CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.
 - 85.1.4. CONTINUOUS VERIFICATION OF THE USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED STRUCTURAL FILL.
 - 85.1.5. PERIODIC INSPECTION OF SUBGRADE, PRIOR TO PLACEMENT OF COMPACTED FILL, TO VERIFY THAT EXCAVATION SITE HAS BEEN PREPARED PROPERLY.

SUBMITTALS:

- 86. CONTRACTOR SHALL SUBMIT CUT SHEETS AND DETAILS FOR THE FOLLOWING TO THE OWNER AND C-EOR FOR REVIEW PRIOR TO PLACEMENT:
 - 86.1. PERIMETER FENCE
 - 86.2. FILL AND/OR STRUCTURAL FILL MATERIALS AND EQUIPMENT PAD EXCAVATION FILL MATERIALS

ALTERNATIVES:

- 87. THE C-EOR WILL CONSIDER ALTERNATIVES FOR MATERIALS AND PROCEDURES. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEMONSTRATE THAT ALL ALTERNATIVES ARE EQUAL IN STRENGTH, PERFORMANCE, AND DURABILITY TO THE MATERIALS OR PROCEDURES SPECIFIED IN THE DESIGN.
- 88. WRITTEN APPROVAL BY THE C-EOR SHALL BE REQUIRED PRIOR TO USING ANY ALTERNATIVE. CONSIDERATION OF ANY ALTERNATIVE SHALL NOT BE DEEMED TO IMPLY ADVANCE ACCEPTANCE BY THE C-EOR. THE C-EOR RESERVES THE RIGHT TO REJECT ANY ALTERNATIVE.



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| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
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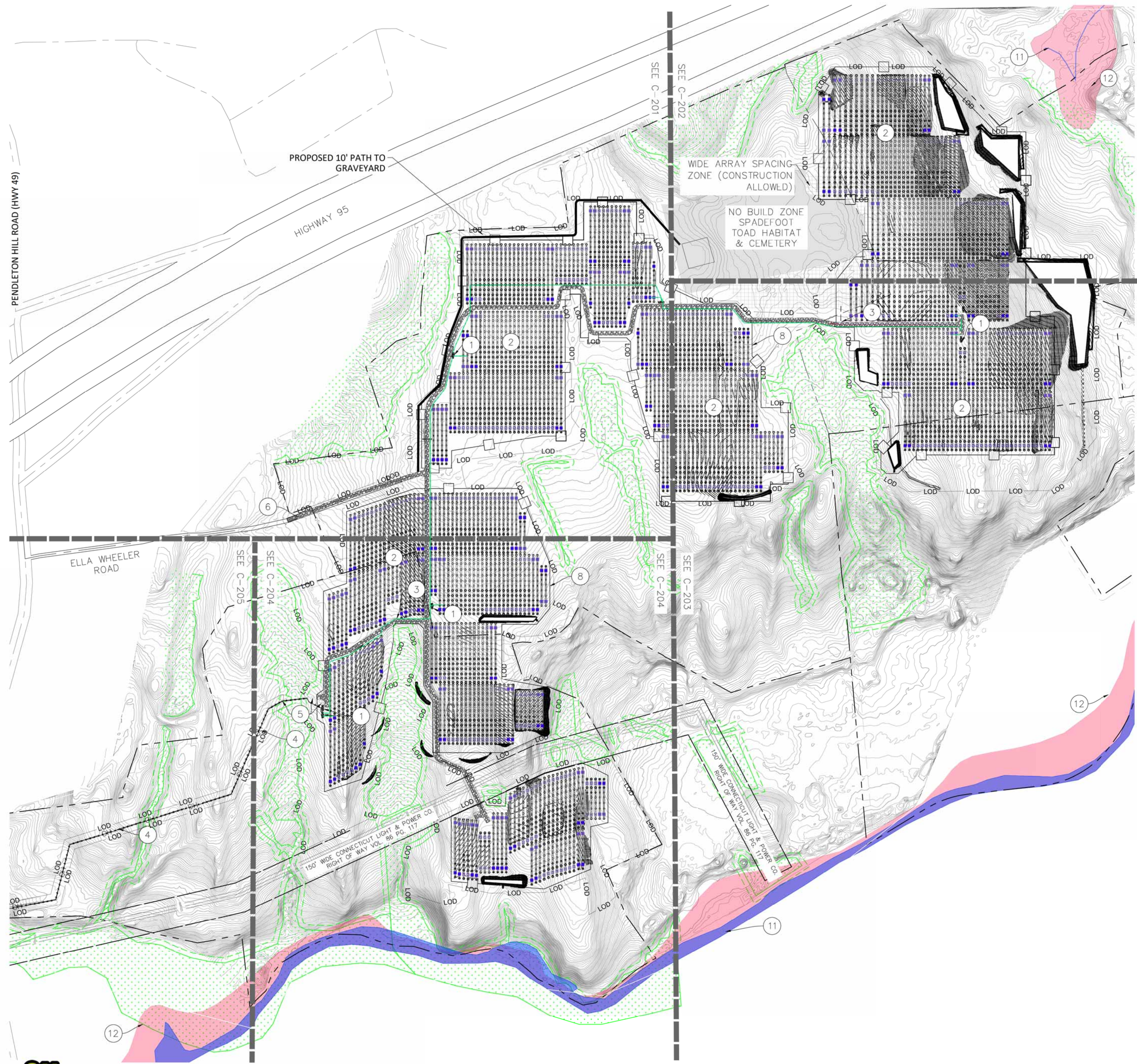
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| | CHECKED BY: DRG |

TITLE:
CIVIL NOTES

SHEET:
 C-100





LEGEND

| | |
|---|---------------------------|
| ① | EQUIPMENT PAD |
| ② | ARRAY AREA |
| ③ | (N) UG AC WIRE |
| ④ | OVERHEAD POWER |
| ⑤ | OVERHEAD POWER POLE |
| ⑥ | PROPOSED SITE ACCESS ROAD |
| ⑦ | WETLAND W/BUFFER |
| ⑧ | SITE FENCE LINE |
| ⑨ | SITE LIMIT OF DISTURBANCE |
| ⑩ | SITE BOUNDARY |
| ⑪ | RIVER OR CREEK |
| ⑫ | 100 YEAR FLOOD ZONE |
| | WIDE ARRAY SPACING AREA |

- GENERAL NOTES**
- LIMIT OF DISTURBANCE AREA = ±146.33 ACRES
 - DISTURBED AREAS INCLUDE: GRADING, EXCAVATION, PILE, ROADWORK, AND EQUIPMENT PADS.
 - SITE PREPARATION INCLUDES CLEARING/GRUBBING, GRADING, COMPACTION, MOWING OF VEGETATION, AND RE-STABILIZATION OF DISTURBED AREAS.
 - TOPSOIL SHALL NOT BE REMOVED FROM THE PROJECT SITE OR SOLD UNLESS REMOVAL OF EXCESS SOIL IS APPROVED BY THE AHJ.
 - EXCESS TOPSOIL SHALL BE SPREAD ON-SITE SO AS TO PROVIDE SIX INCHES OF COVER ORIGINALLY EXISTING ON THE SITE OR A MINIMUM OF FOUR INCHES OF COVER IF THE ORIGINAL COVER WAS LESS.
 - PROJECT SITE SHALL BE STABILIZED BY SEEDING AND/OR SODDING.
 - ADDITIONAL VEGETATION MAY NEED TO BE REMOVED PRIOR TO CONSTRUCTION. AREAS THAT ARE NOT CLEARED/GRUBBED SHALL BE MOWED TO A MINIMUM OF THREE INCHES.
 - CONTRACTOR RESPONSIBLE FOR PRESERVATION OF EXISTING VEGETATION, NOT CLEARED/GRUBBED OR MOWED, TO THE EXTENT PRACTICABLE.
 - VEGETATION REMOVAL SHALL ONLY OCCUR WITHIN THE PROJECT BOUNDARY.
 - CONTRACTOR TO REMOVE ONLY VEGETATION WHICH SHALL BE DESIGNATED BY THE OWNERS REPRESENTATIVE FOR REMOVAL AND SHALL EXERCISE CARE AROUND EXISTING VEGETATION TO BE SAVED. CONSTRUCTION FENCING MAY BE INSTALLED TO PROTECT AREAS THAT ARE NOT TO BE DISTURBED.
 - BURNING OF DEBRIS SHALL NOT OCCUR WITHOUT APPROPRIATE PERMITS AND/OR AHJ AND OWNER APPROVAL
 - FINAL STABILIZATION SHALL BE ACHIEVED WHEN A UNIFORM VEGETATIVE COVER WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST 80% OF PRE-DISTURBANCE LEVELS, OR EQUIVALENT PERMANENT PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED IN ALL AREAS OF DISTURBED GROUND.

SETBACK SCHEDULE

| ITEM | REQUIRED | DESIGNED |
|-------|------------------------|----------|
| FRONT | 50' FROM PROPERTY LINE | 50' |
| SIDE | 50' FROM PROPERTY LINE | 50' |
| REAR | 50' FROM PROPERTY LINE | 50' |



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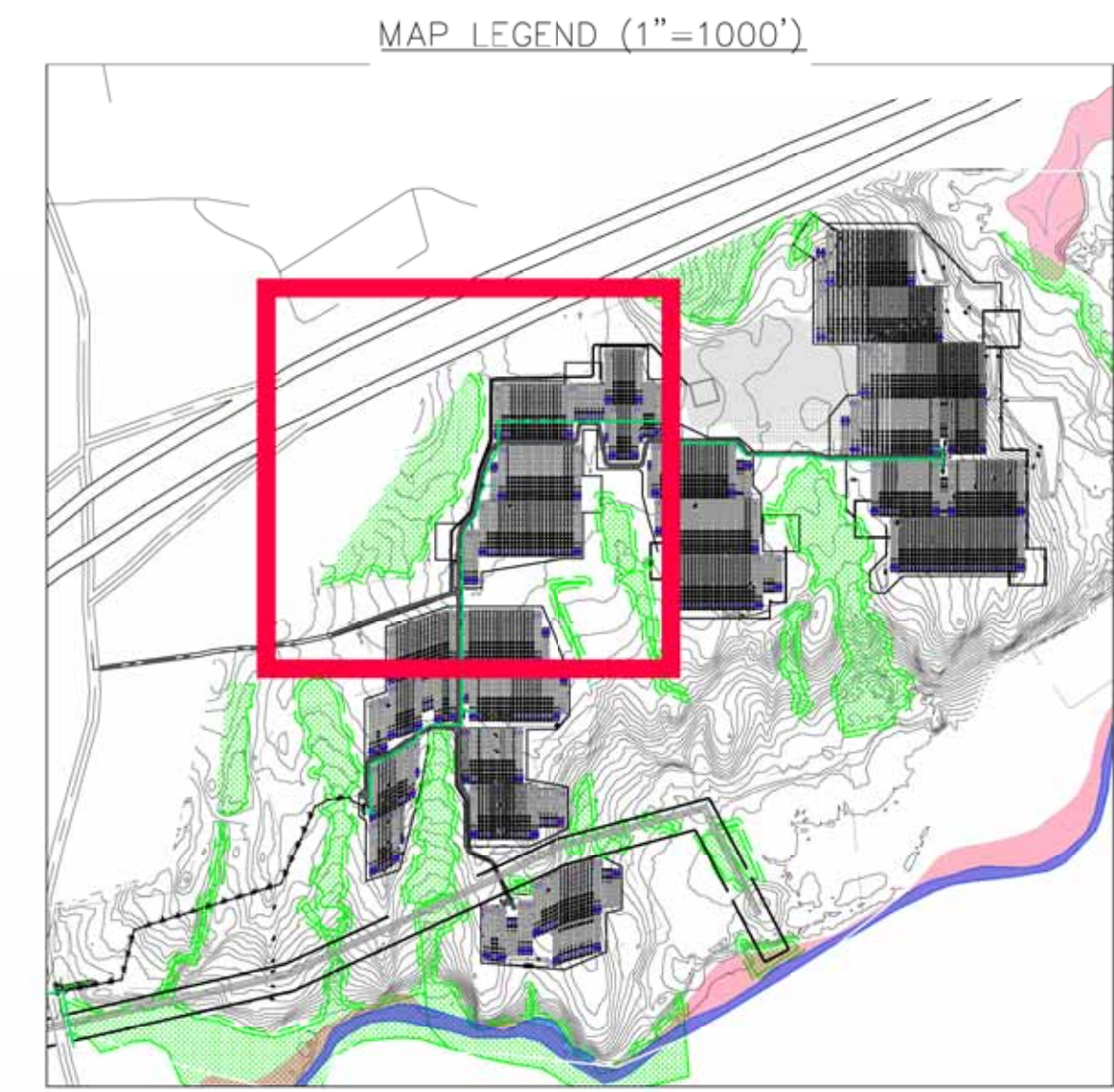
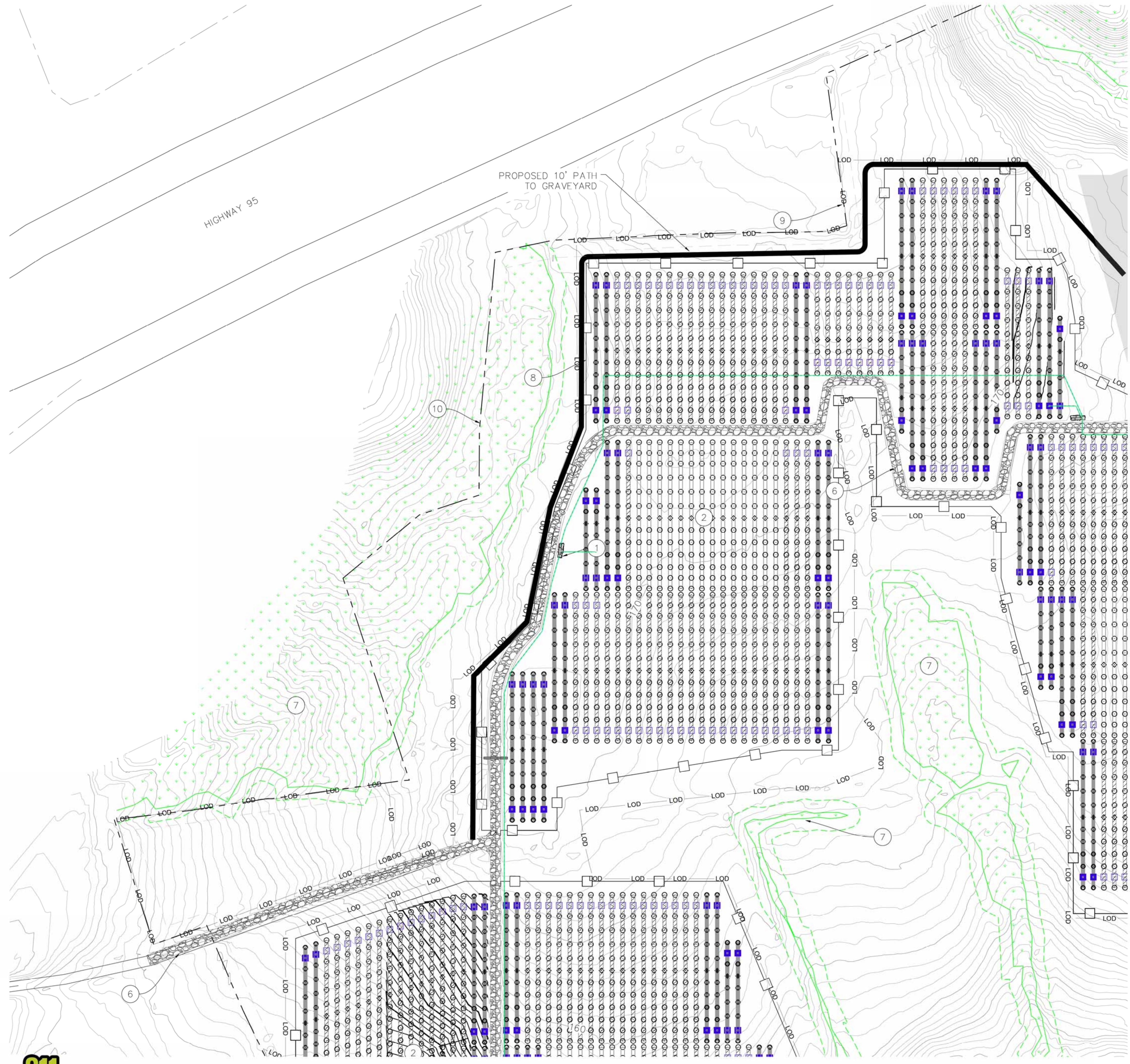
TITLE:
 CIVIL SITE OVERVIEW

SHEET:
 C-200

811 Know what's below. Call before you dig.

1 CIVIL SITE OVERVIEW
 C-200 Scale: 1" = 250'

0 250 500 FEET



LEGEND

| | | |
|---|--|---------------------------|
| ① | | EQUIPMENT PAD |
| ② | | ARRAY AREA |
| ③ | | (N) UG AC WIRE |
| ④ | | OVERHEAD POWER |
| ⑤ | | OVERHEAD POWER POLE |
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |
| ⑪ | | RIVER OR CREEK |
| ⑫ | | 100 YEAR FLOOD ZONE |

| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
| 1 | 60% FOR CLIENT REVIEW | 06/11/2020 |
| 2 | 90% ISSUED FOR CLIENT REVIEW | 06/30/2020 |
| 3 | IFC (DRAFT FOR REVIEW) | 07/02/2020 |
| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

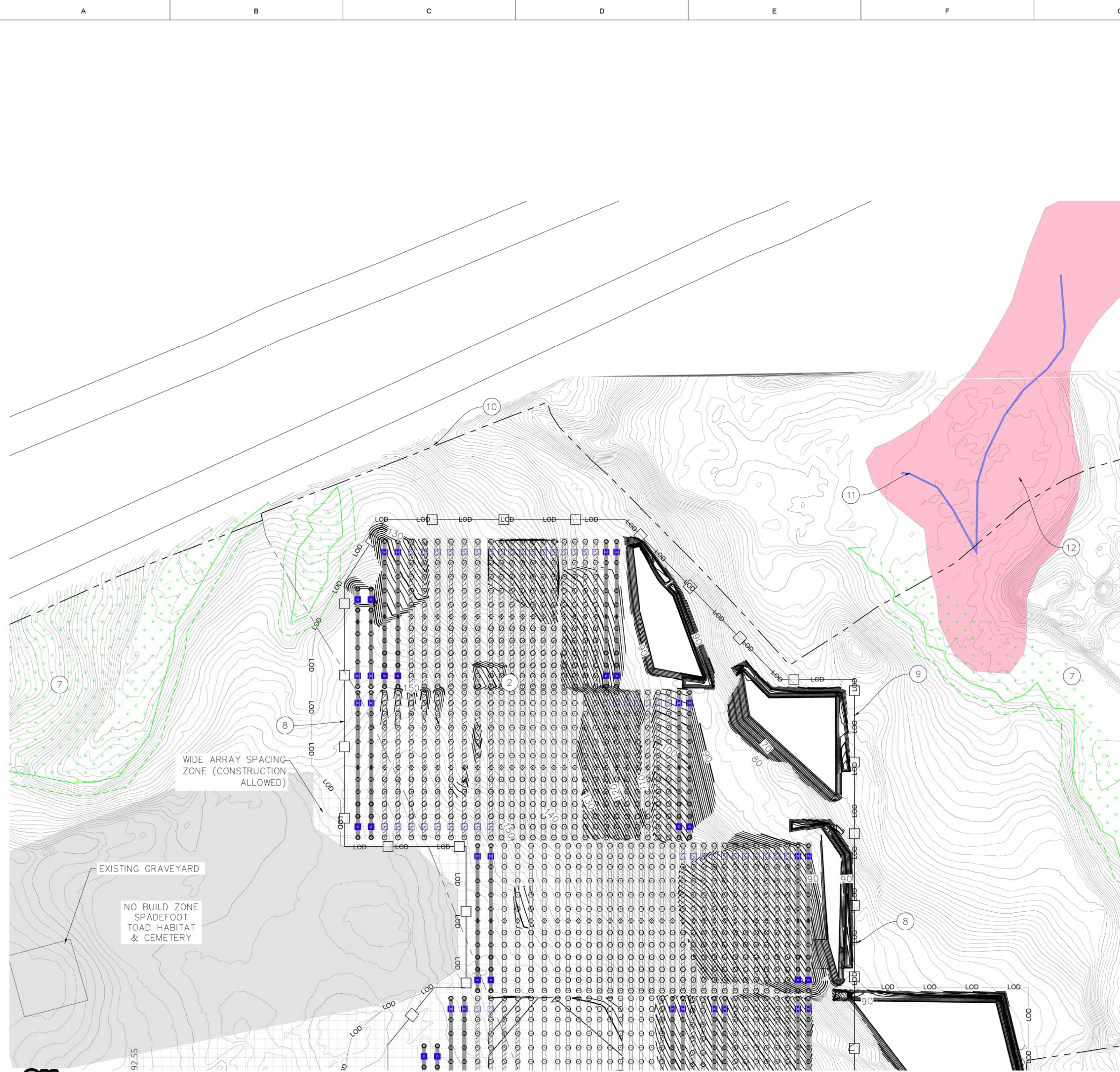
| | |
|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
 CIVIL SITE PLAN

SHEET:
 C-201



1 CIVIL SITE PLAN
 C-201 Scale: 1" = 100'



LEGEND

| | | |
|---|--|---------------------------|
| ① | | EQUIPMENT PAD |
| ② | | ARRAY AREA |
| ③ | | (N) UG AC WIRE |
| ④ | | OVERHEAD POWER |
| ⑤ | | OVERHEAD POWER POLE |
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |
| ⑪ | | RIVER OR CREEK |
| ⑫ | | 100 YEAR FLOOD ZONE |
| | | WIDE ARRAY SPACING AREA |



| REV | DESCRIPTION | DATE |
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| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

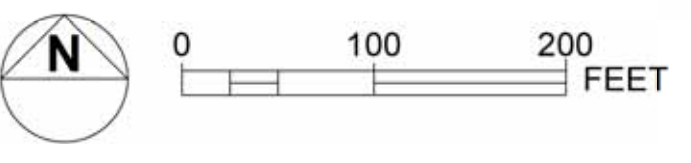
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| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

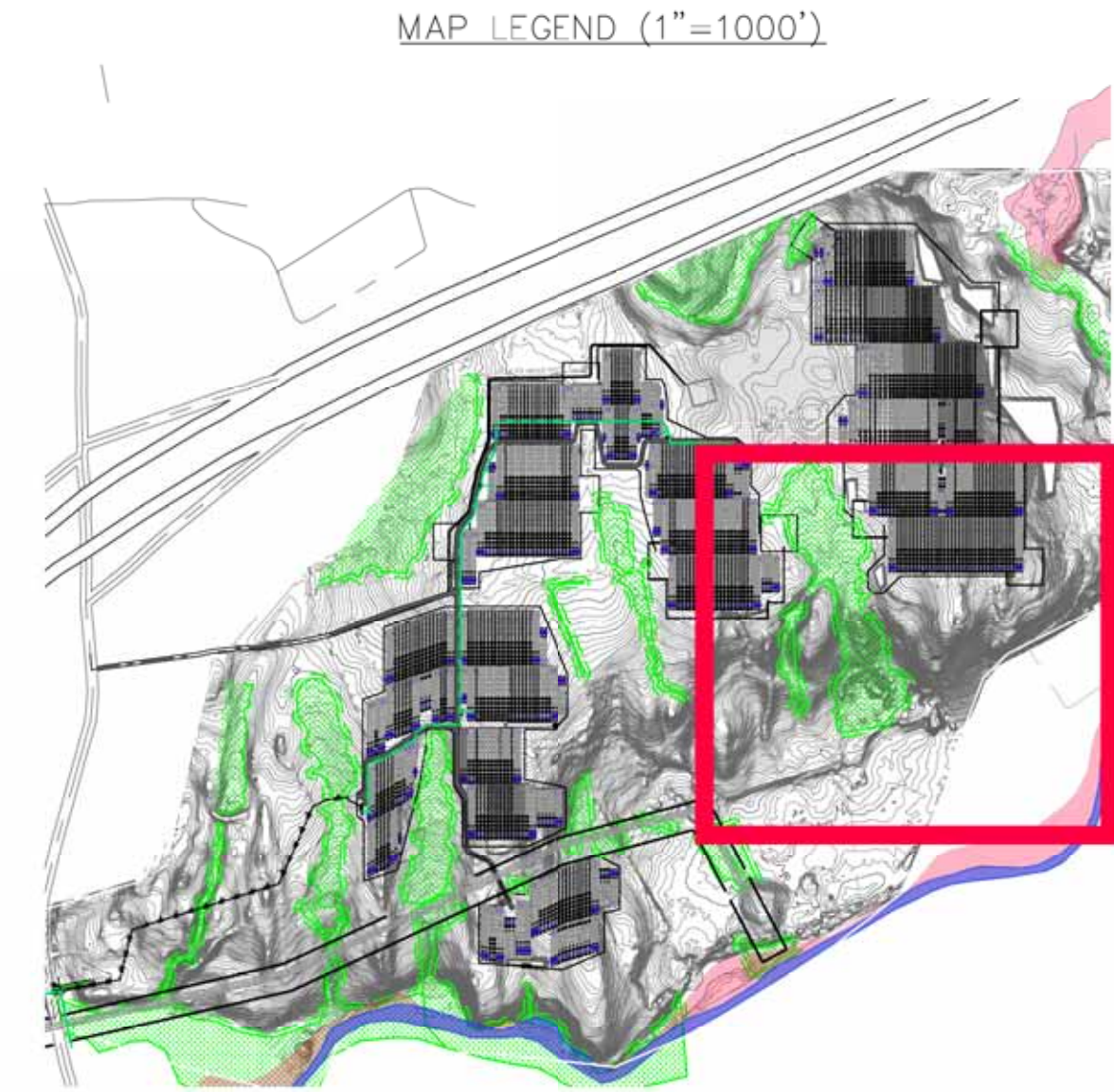
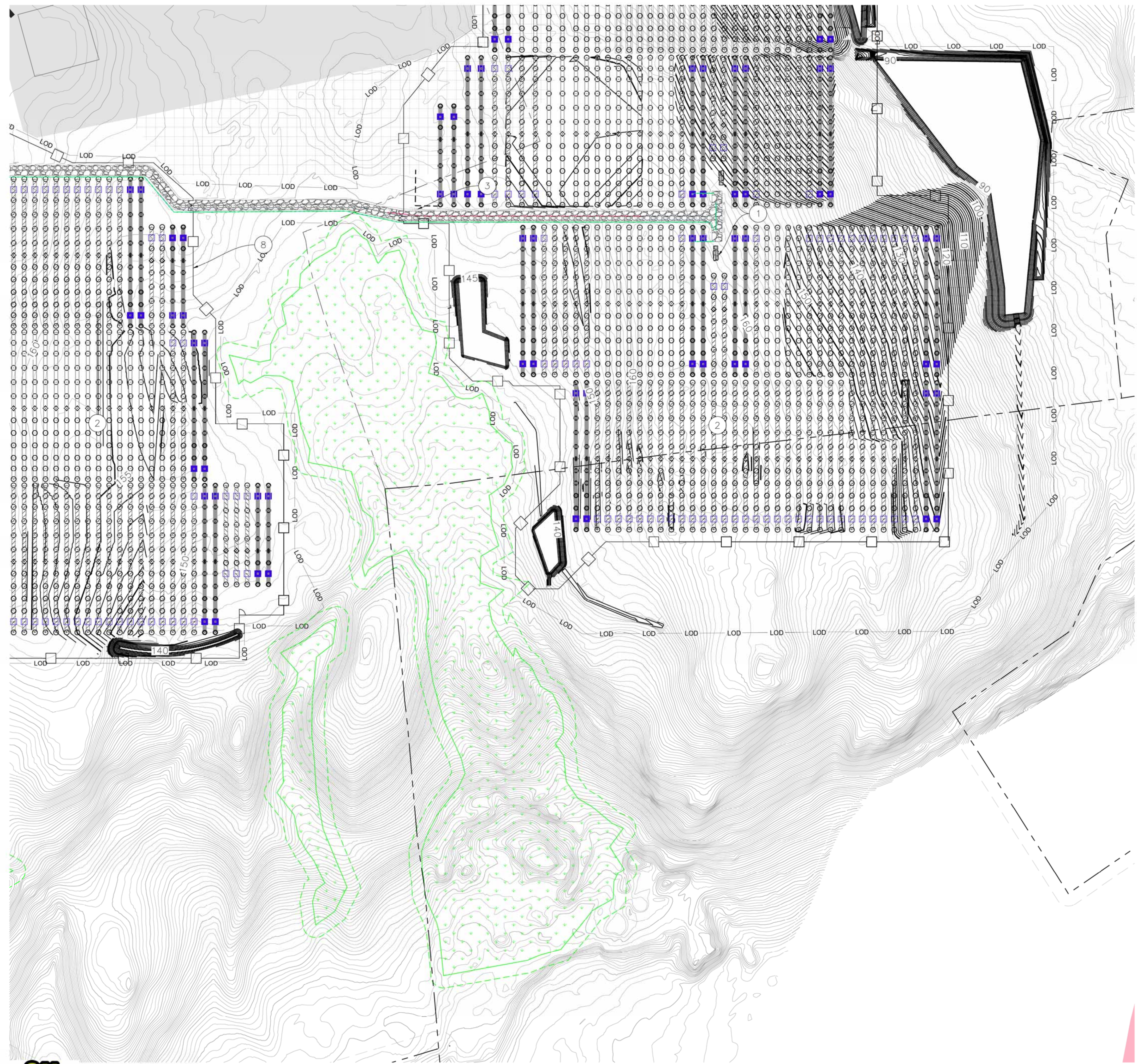
TITLE:
 CIVIL SITE PLAN

SHEET:
 C-202



1 CIVIL SITE PLAN
 C-202 Scale: 1" = 100'





LEGEND

| | | |
|---|--|---------------------------|
| ① | | EQUIPMENT PAD |
| ② | | ARRAY AREA |
| ③ | | (N) UG AC WIRE |
| ④ | | OVERHEAD POWER |
| ⑤ | | OVERHEAD POWER POLE |
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |

| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

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 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

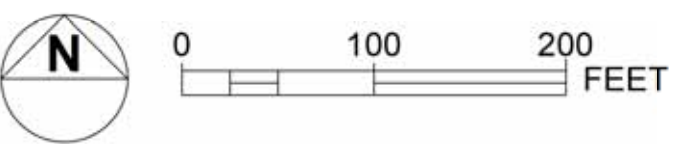
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|-------------|-----------|
| SEAL: | DATE: |
| | 22-JUL-20 |
| PROJECT #: | DRAWN BY: |
| 20200309_CT | MMM |
| CHECKED BY: | |
| DRG | |

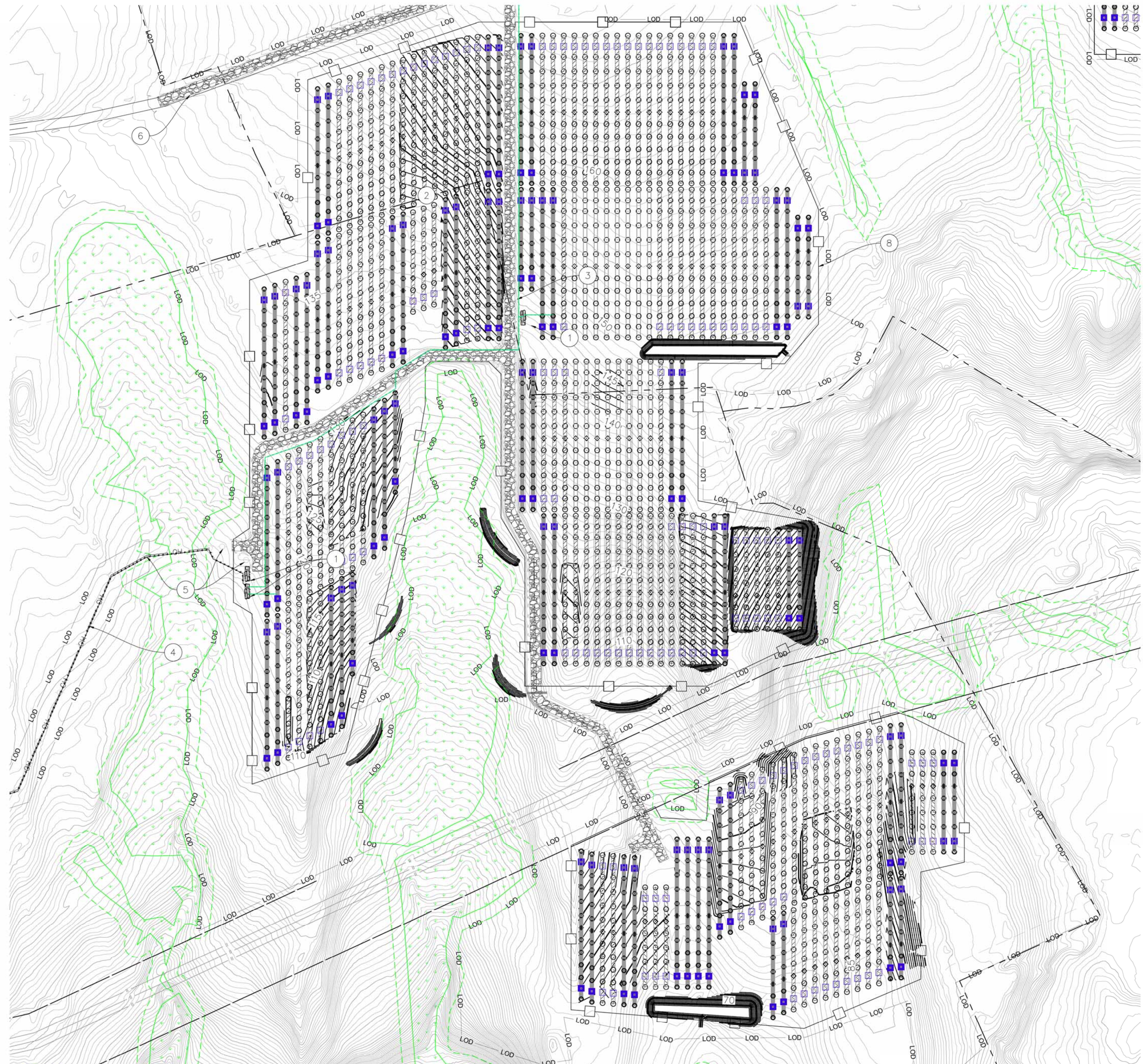
TITLE:
 CIVIL SITE PLAN

SHEET:
 C-203



1 CIVIL SITE PLAN
 C-203 Scale: 1" = 100'





LEGEND

| | | |
|---|--|---------------------------|
| ① | | EQUIPMENT PAD |
| ② | | ARRAY AREA |
| ③ | | (N) UG AC WIRE |
| ④ | | OVERHEAD POWER |
| ⑤ | | OVERHEAD POWER POLE |
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |
| | | 75 (E) MAJOR CONTOUR |
| | | 76 (E) MINOR CONTOUR |
| | | 75 (N) MAJOR CONTOUR |
| | | 76 (N) MINOR CONTOUR |

NOTES:

1. COORDINATE SYSTEM: NAD83 CONNECTICUT STATE PLANE ZONE, US FOOT



| REV | DESCRIPTION | DATE |
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| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
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PROJECT ADDRESS:
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 NORTH STONINGTON, CT 06359
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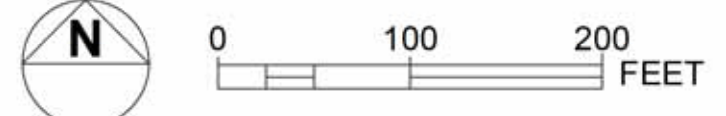
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

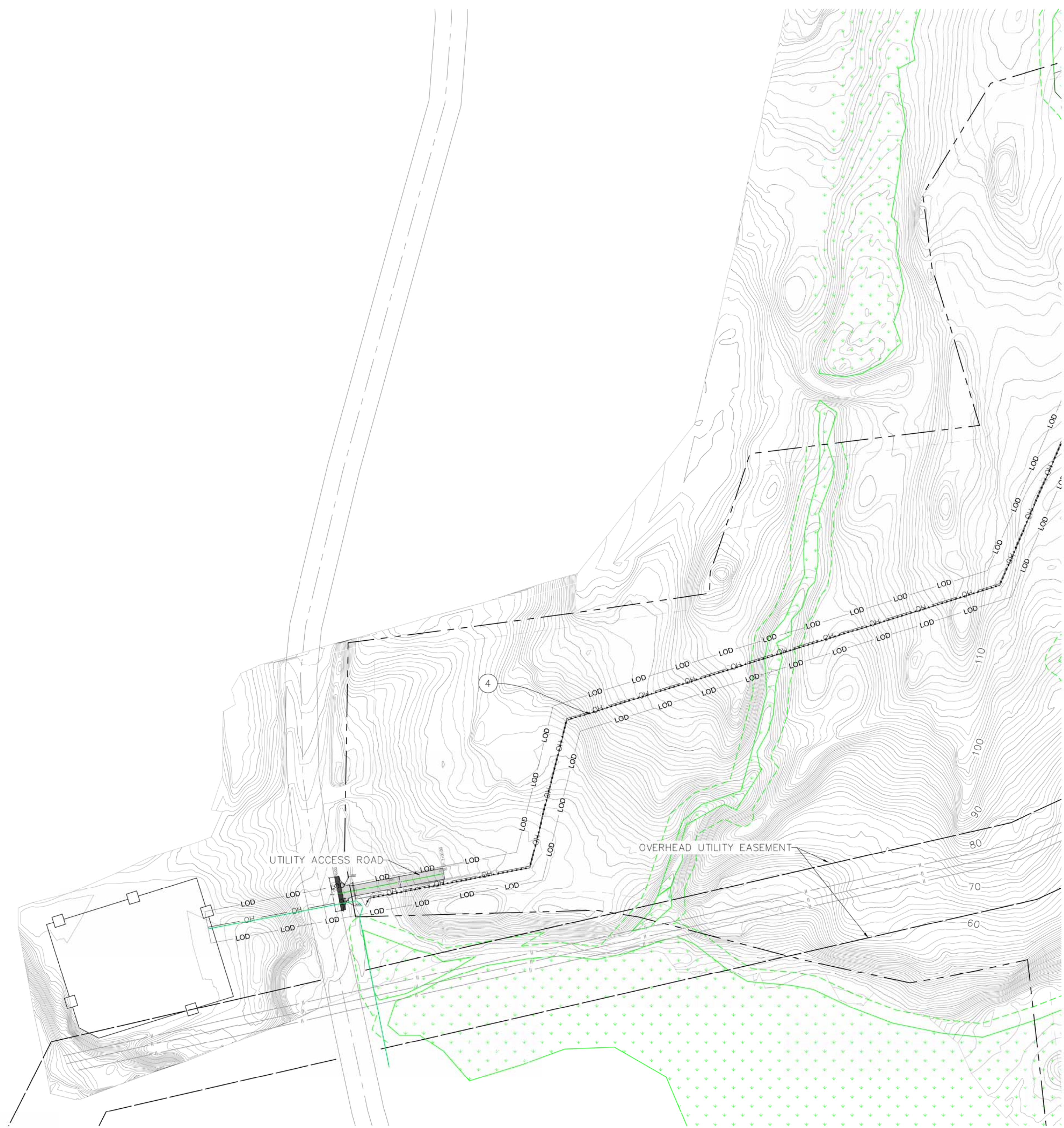
TITLE:
 CIVIL SITE PLAN

SHEET:
 C-204



1 CIVIL SITE PLAN
 C-204 Scale: 1" = 100'





LEGEND

| | | |
|---|--|---------------------------|
| ① | | EQUIPMENT PAD |
| ② | | ARRAY AREA |
| ③ | | (N) UG AC WIRE |
| ④ | | OVERHEAD POWER |
| ⑤ | | OVERHEAD POWER POLE |
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |



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PROJECT ADDRESS:
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 NORTH STONINGTON, CT 06359
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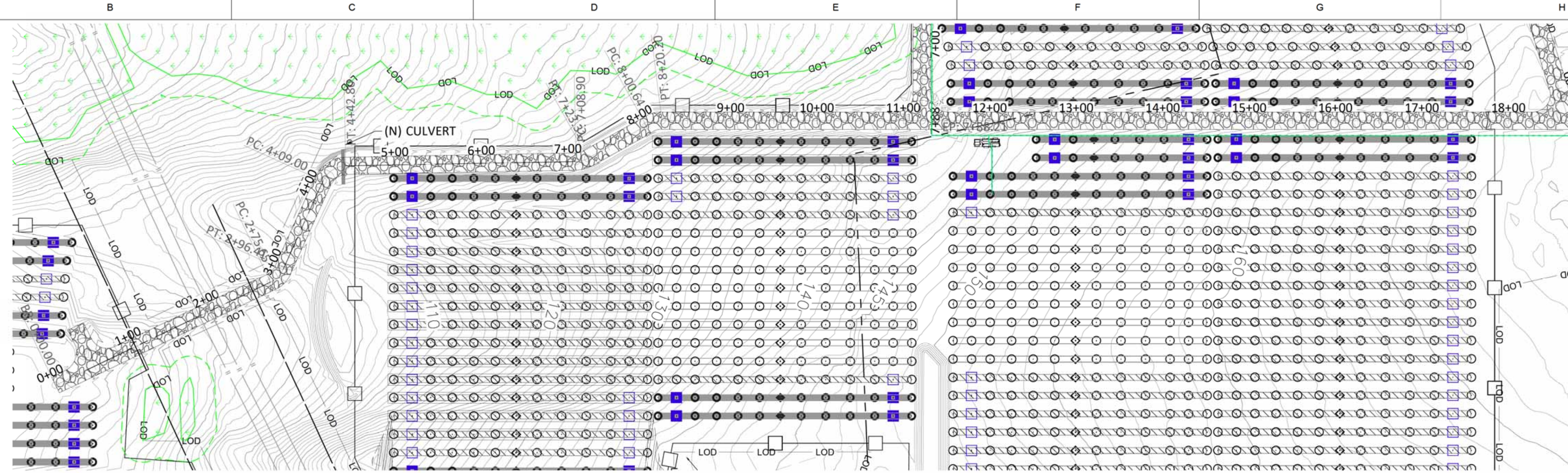
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|-------|-------------|
| SEAL: | DATE: |
| | 22-JUL-20 |
| | PROJECT #: |
| | 20200309_CT |
| | DRAWN BY: |
| | MMM |
| | CHECKED BY: |
| | DRG |

TITLE:
 CIVIL SITE PLAN

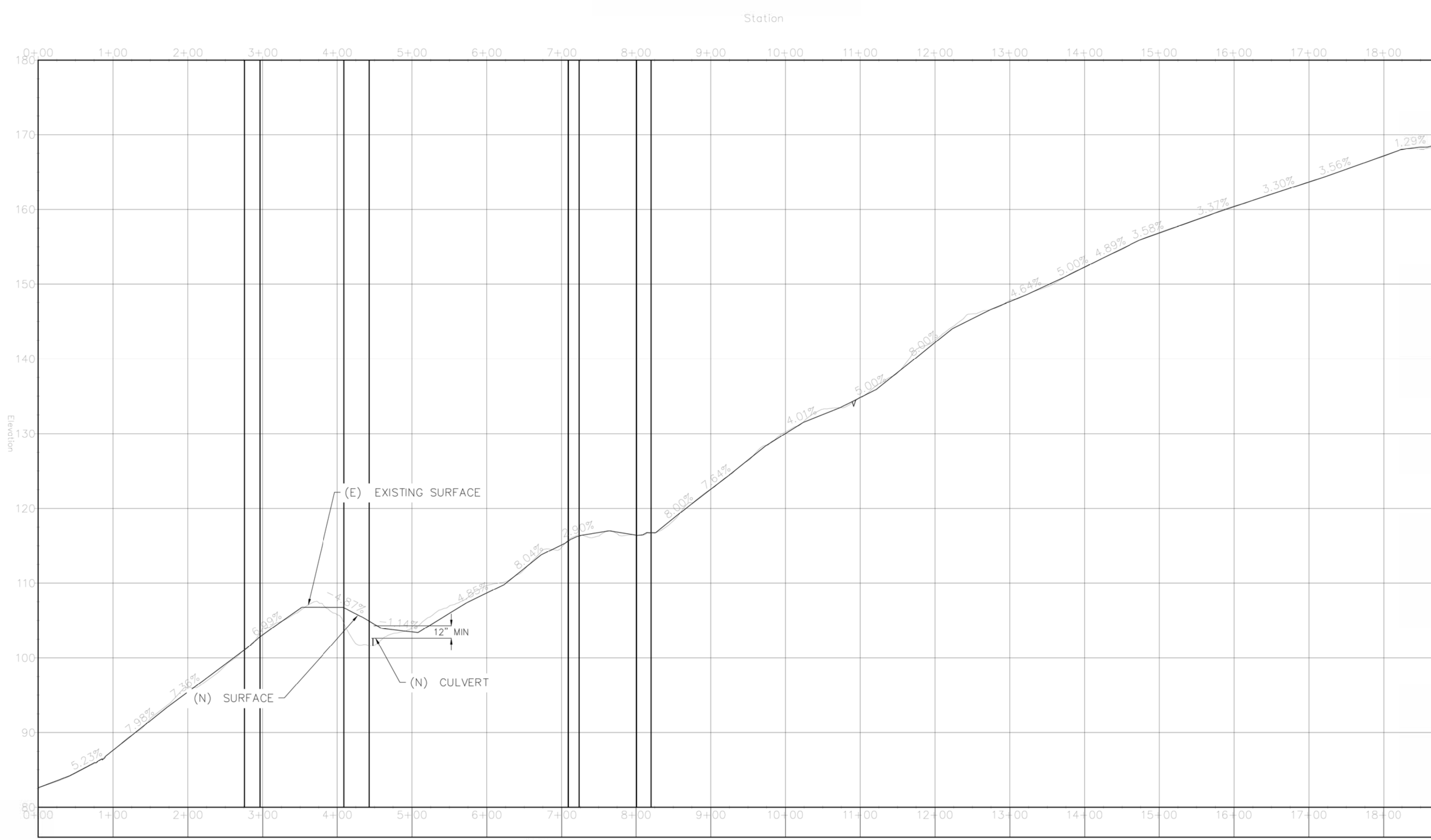
SHEET:
 C-205



1 CIVIL SITE PLAN
 C-205 Scale: 1" = 100'



1 ROAD SECTION 1 (STA 0+00 TO STA 18+50)
C-300 Scale: 1" = 80'



2 ROAD SECTION 1 PROFILE (STA 0+00 TO STA 18+50)
C-300 Scale: H-1" = 80' V-1" = 8'



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

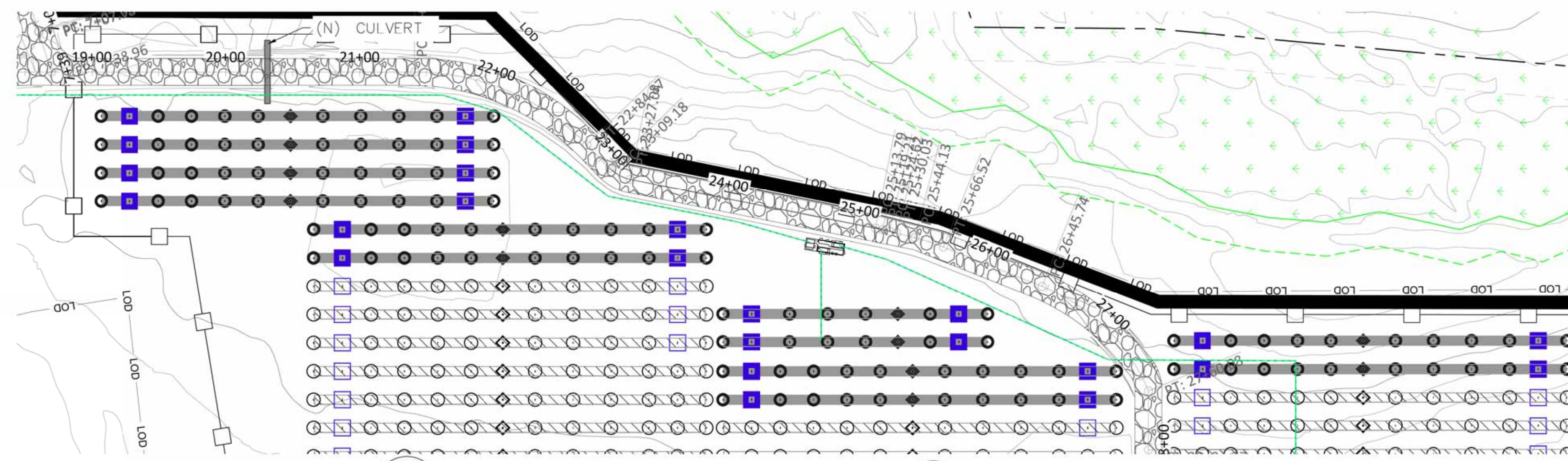
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal] DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

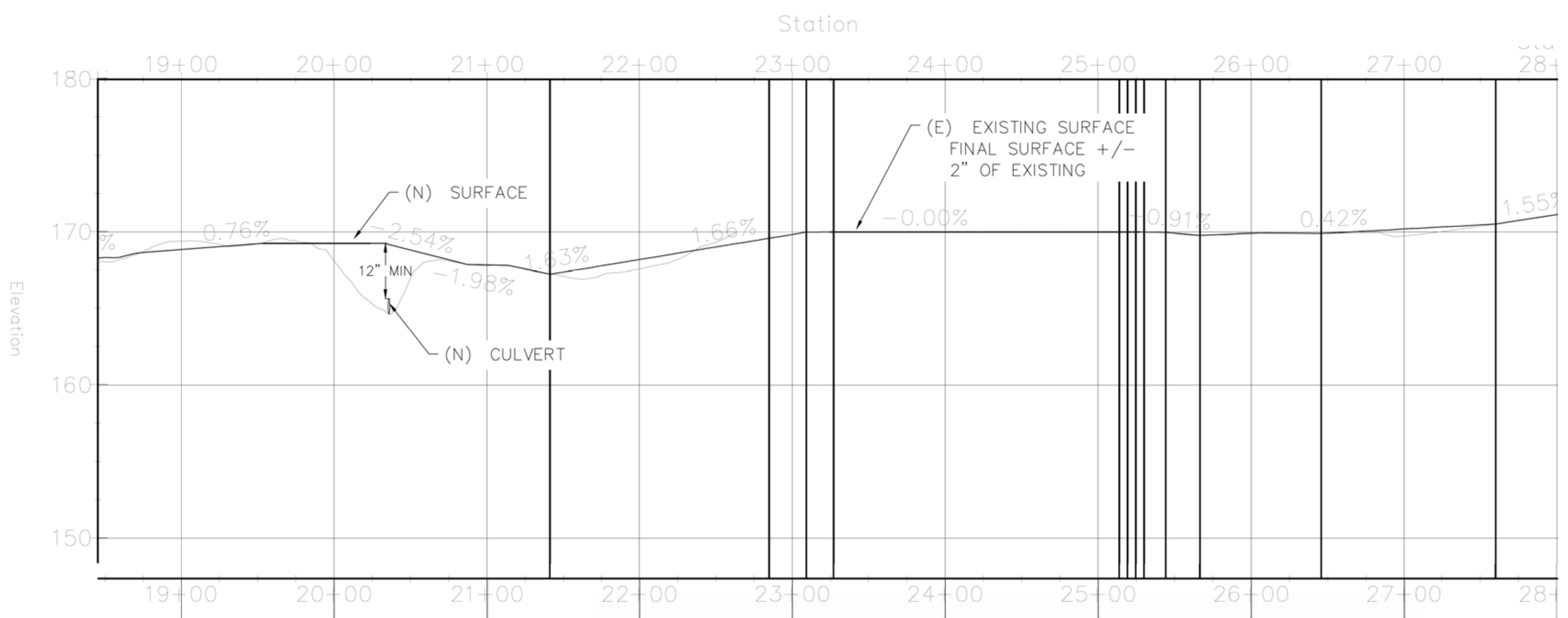
TITLE: ROAD SECTIONS

SHEET: C-300





1 ROAD SECTION 1 (STA 18+50 TO STA 28+00)
 Scale: 1" = 60'



2 ROAD SECTION 1 PROFILE (STA 18+50 TO STA 28+00)
 Scale: H-1" = 60' V-1" = 6'



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

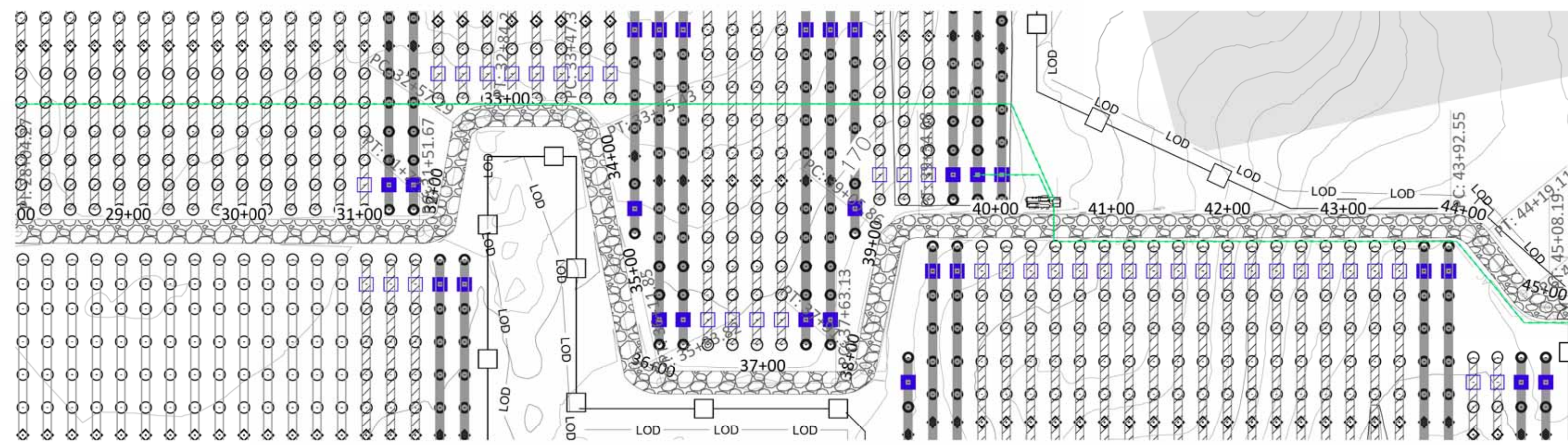
PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal for Darin Galloway, No. 34152, State of Connecticut]
 DATE: 22-JUL-20
 PROJECT #: 20200309_CT
 DRAWN BY: MMM
 CHECKED BY: DRG

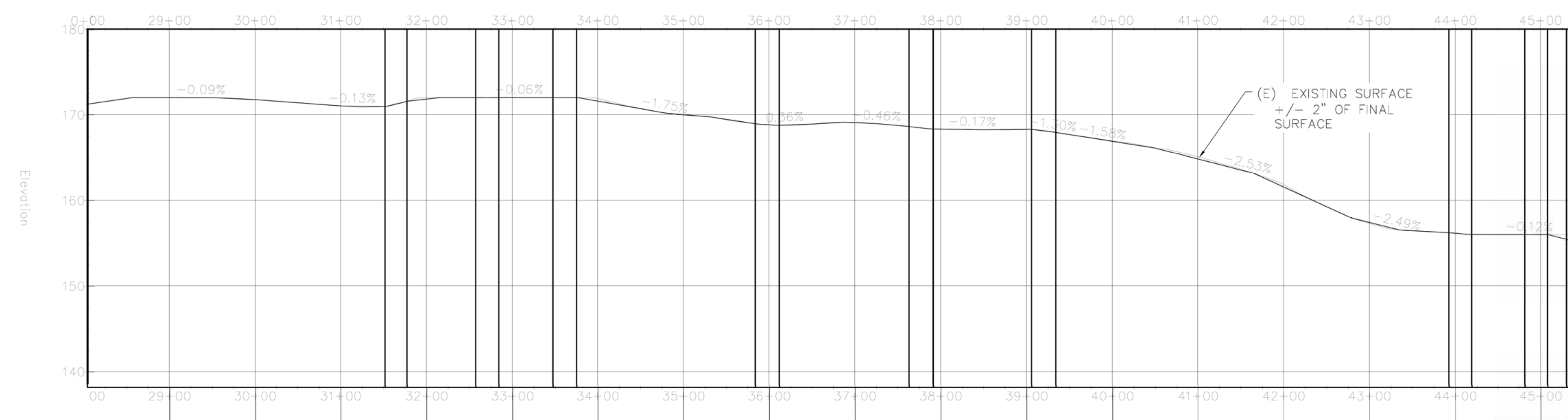
TITLE:
 ROAD SECTIONS

SHEET:
 C-301





1 ROAD SECTION 1 (STA 28+00 TO 45+30)
C-302 Scale: 1" = 80'



2 ROAD SECTION 1 PROFILE (STA 28+00 TO 45+30)
C-302 Scale: H-1" = 80' V-1" = 8'



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
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| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

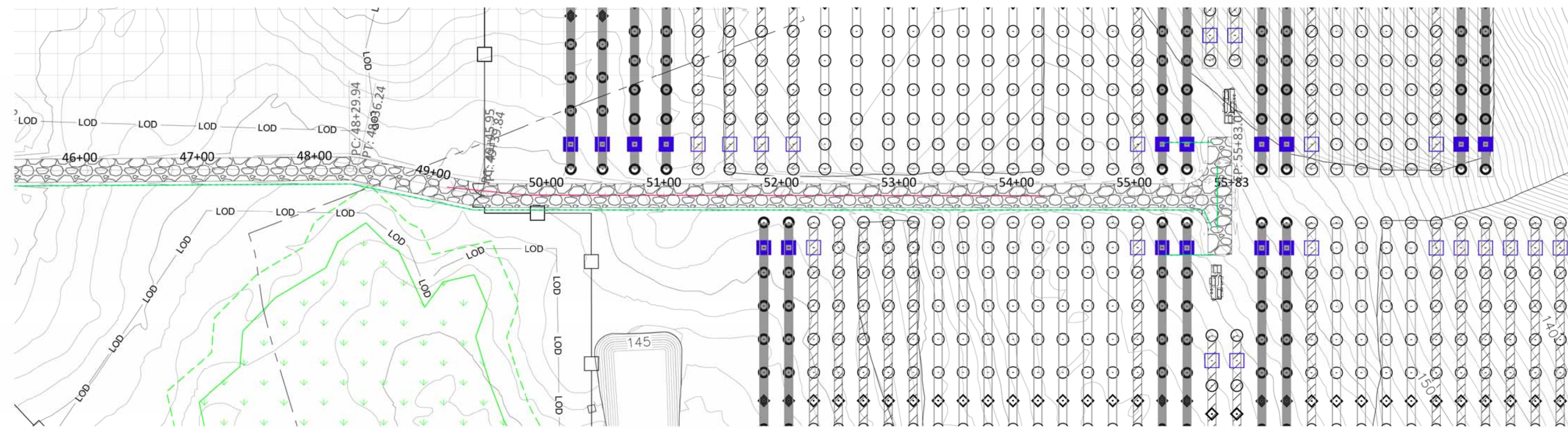
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-------|------------------------|
| SEAL: | DATE: 22-JUL-20 |
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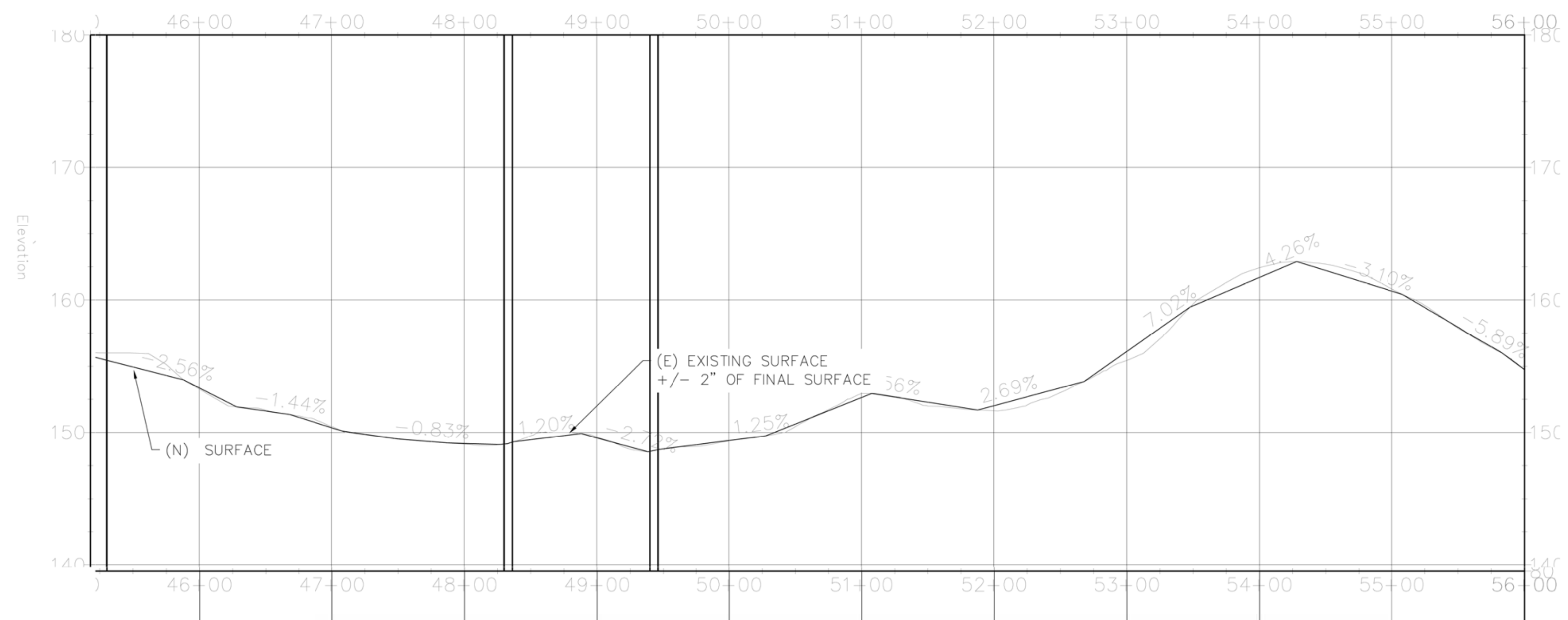
TITLE:
ROAD SECTIONS

SHEET:
C-302





1 ROAD SECTION 1 (STA 45+30 TO STA 55+83)
C-303 Scale: 1" = 60'



2 ROAD SECTION 1 PROFILE (STA 45+30 TO STA 55+83)
C-303 Scale: H-1" = 60' V-1" = 6'



| REV | DESCRIPTION | DATE |
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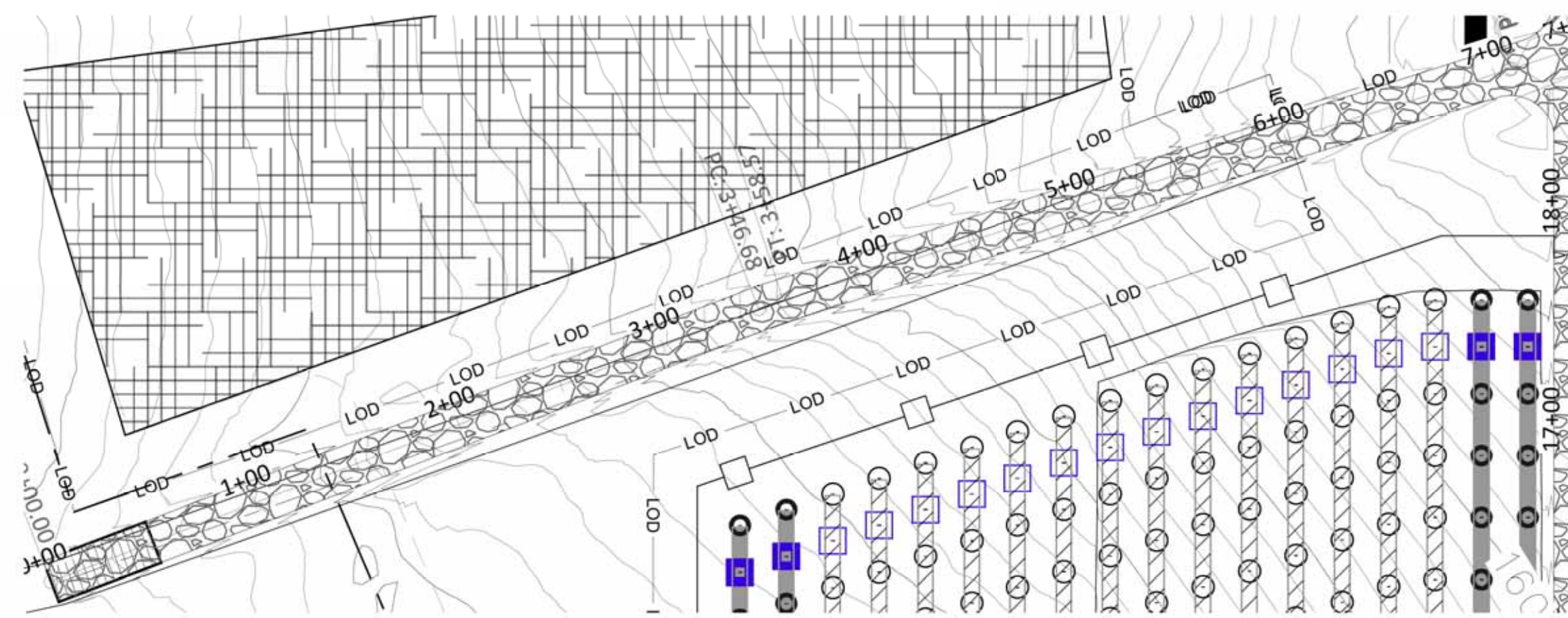
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

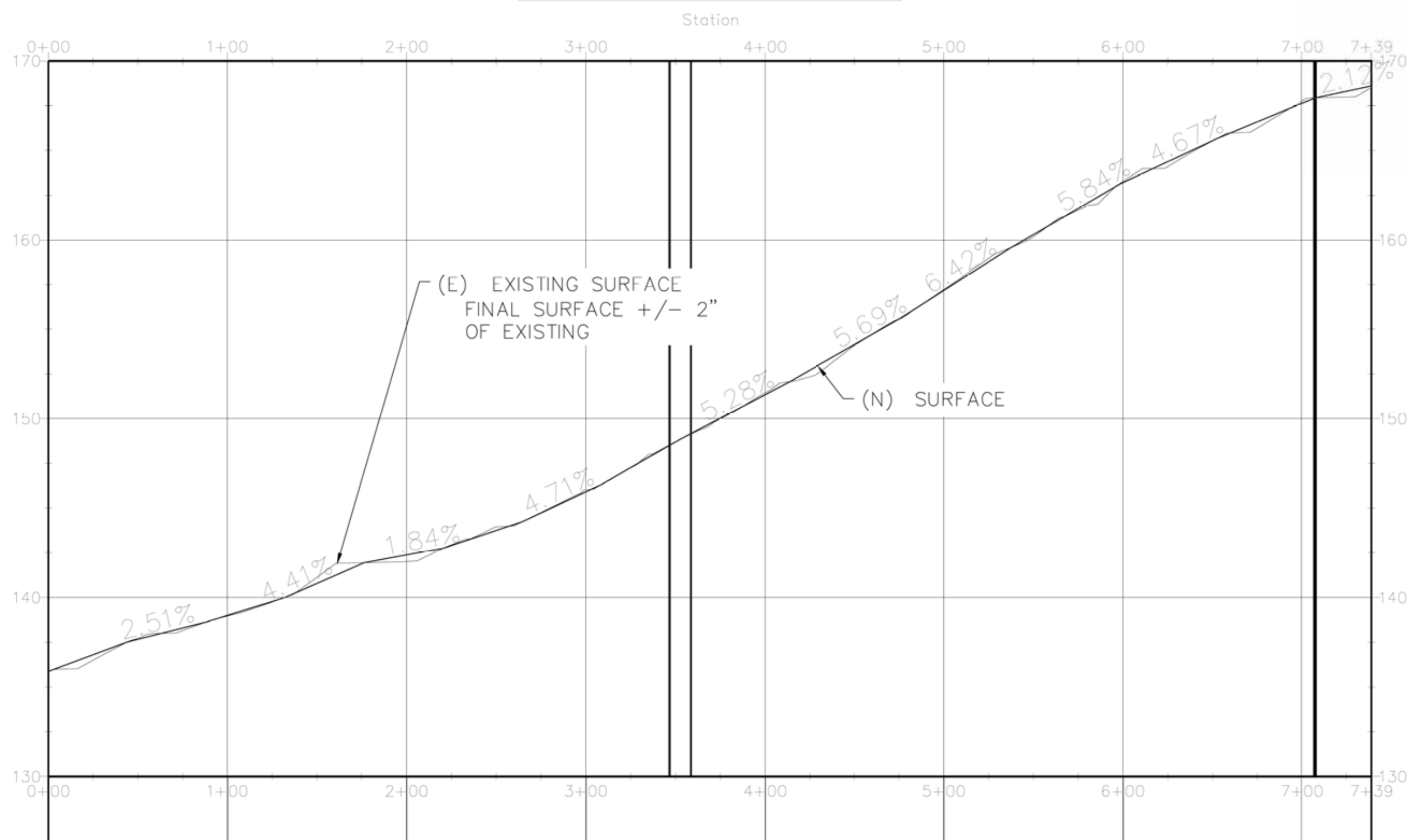
TITLE:
ROAD SECTIONS

SHEET:
C-303

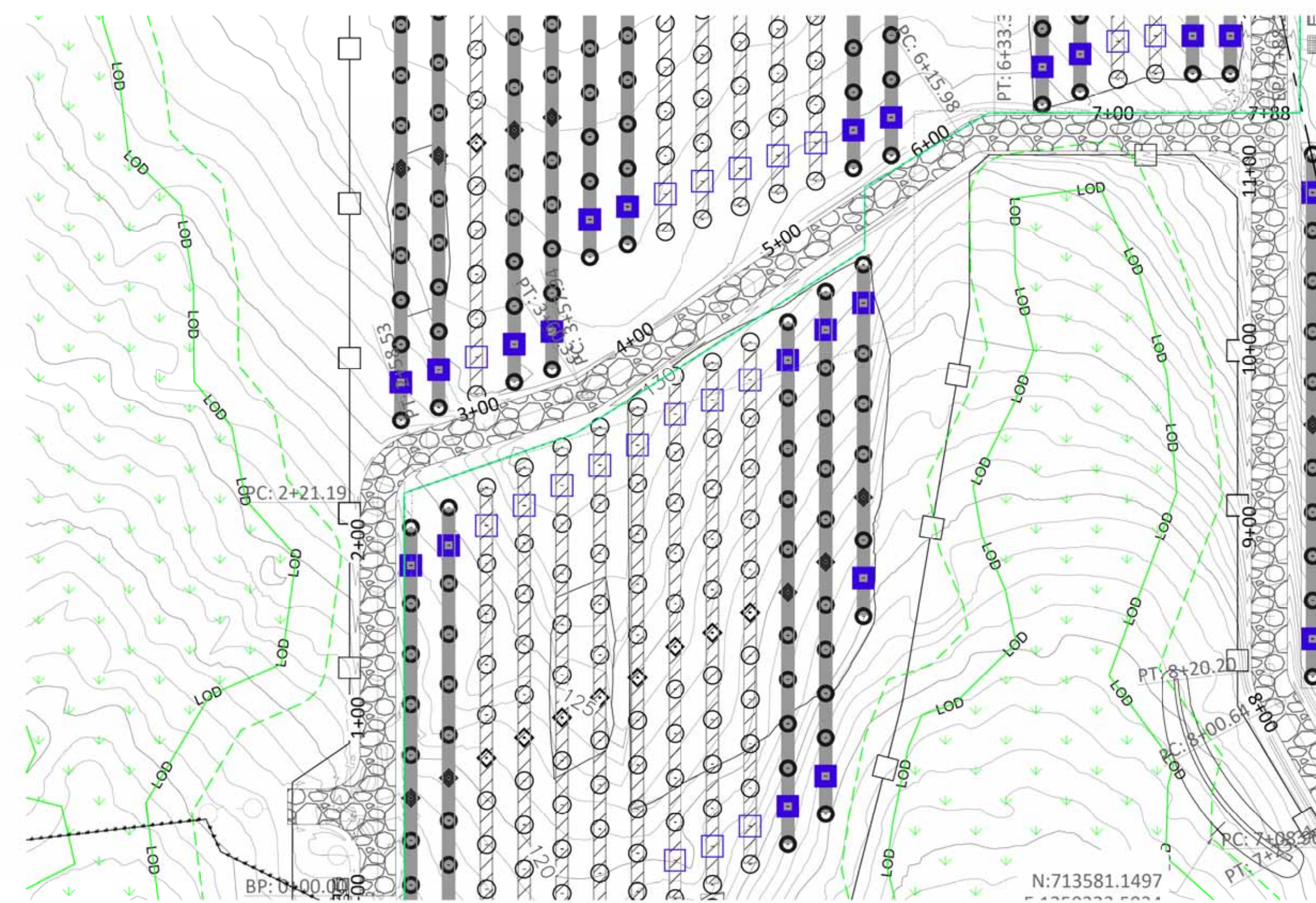




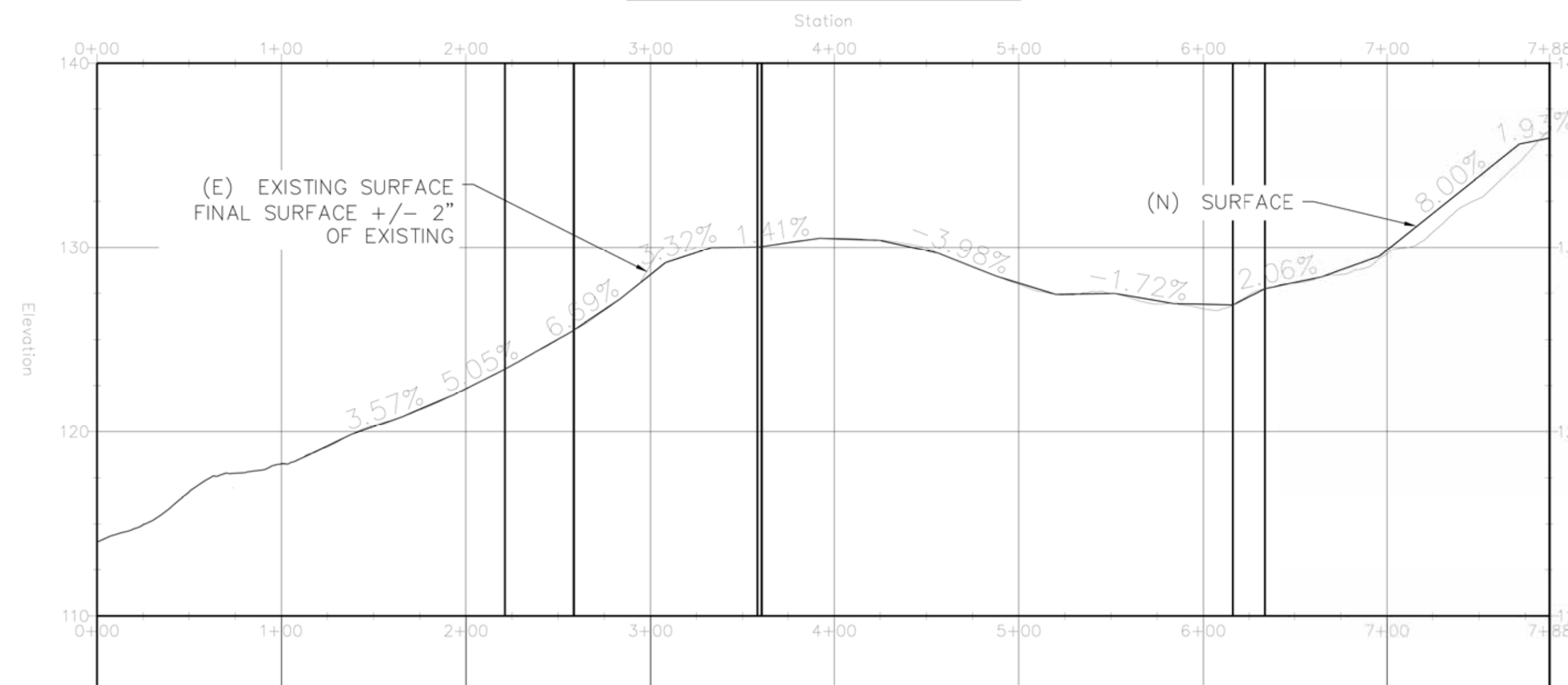
1 ROAD SECTION 2
C-304 Scale: 1" = 60'



2 ROAD SECTION 2 PROFILE
C-304 Scale: H-1" = 60' V-1"=6'



3 ROAD SECTION 3
C-304 Scale: 1" = 60'



4 ROAD SECTION 3 PROFILE
C-304 Scale: H-1" = 60' V-1"=6'



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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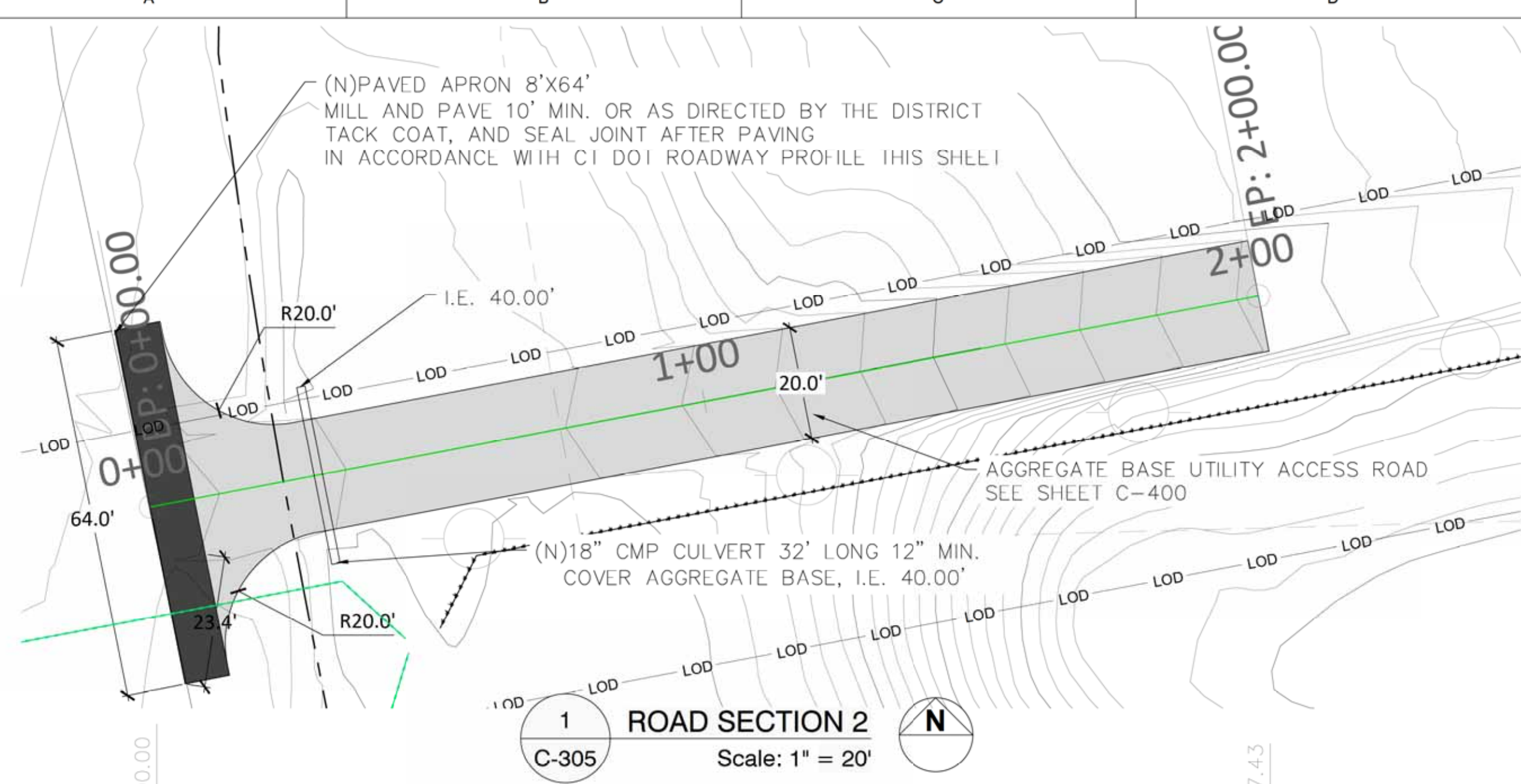
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal] DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

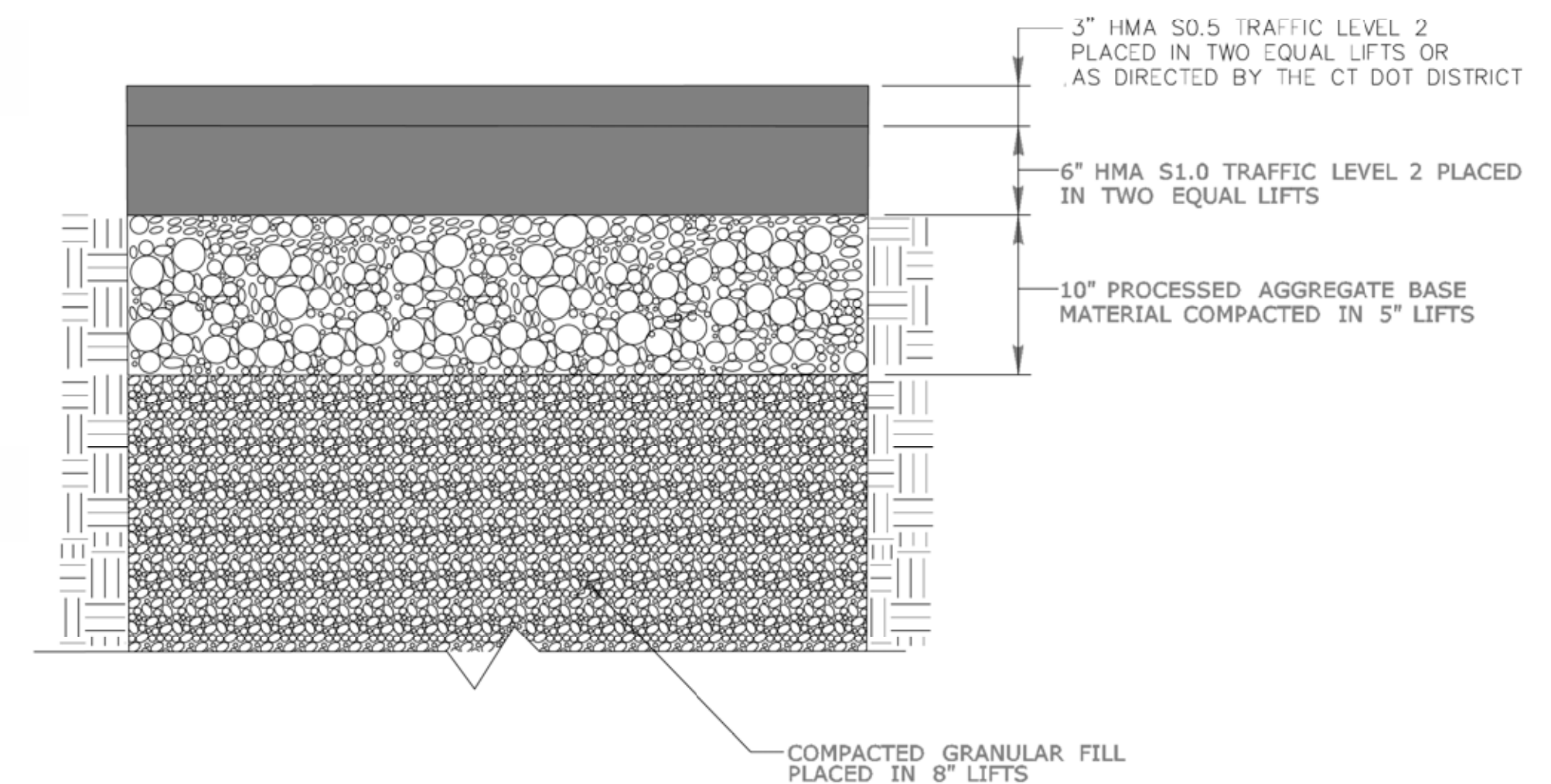
TITLE:
ROAD SECTIONS

SHEET:
C-304





1 ROAD SECTION 2
Scale: 1" = 20'



ROADWAY PROFILE

UTILITY ACCESS ROAD CONNECTION TO HIGHWAY GENERAL NOTES:

THE ConnDOT ROADWAY PROFILE FOR ENCROACHMENT PERMITS WILL CONSIST OF THE FOLLOWING:

- 3" OF HMA SUPERPAVE 0.5 TRAFFIC LEVEL 2 PLACED IN TWO EQUAL LIFTS.
- 6" OF HMA SUPERPAVE 1.0 TRAFFIC LEVEL 2 PLACED IN TWO EQUAL LIFTS.
- 10" OF PROCESSED AGGREGATE BASE MATERIAL COMPACTED IN 5" LIFTS.
- COMPACTED GRANULAR FILL BASE COMPACTED IN 8" LIFTS.

PERMANENT PAVEMENT REPAIR WITH MILLING:
DEPENDING ON THE LOCATION OF THE PROPOSED EXCAVATIONS, MILLING AND HMA RESURFACING SHALL BE REQUIRED FOR THE AFFECTED AREA. THE LIMITS OF RESURFACING WILL BE DETERMINED BY CONNDOT AND WILL GENERALLY EXTEND FROM THE NEAREST LONGITUDINAL PAVEMENT JOINT TO THE GUTTER LINE OR NEAREST ADJACENT JOINT WHICH PARALLELS THE EXCAVATION. THE MILLED AREA AND ALL SAW CUT EDGES SHALL BE MECHANICALLY SWEEPED AND TACK COATED WITH AN APPROVED TACK MATERIAL. THE MATERIAL MUST BE APPLIED BY A NON-GRAVITY PRESSURIZED SPRAY SYSTEM THAT RESULTS IN UNIFORM OVERLAPPING COVERAGE WITH AN APPLICATION RATE THAT IS IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS. THE MILLED AREA WILL BE PAVED WITH S0.5 OR S0.375 LEVEL 2 HMA COMPACTED TO A 2" DEPTH IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS SECTIONS 4.06 & M.04. ALL MILLED MATERIAL MUST BE DISPOSED OF AT THE PERMITTEE'S EXPENSE.

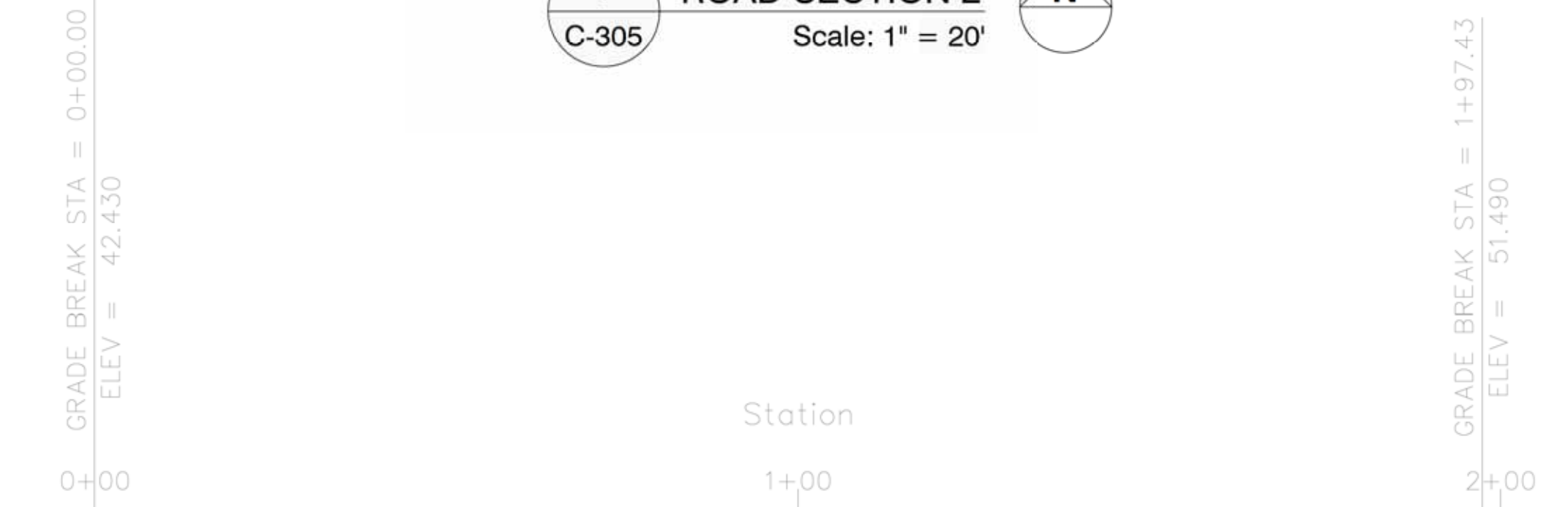
BACKFILL:
THE EXCAVATION SHALL BE FILLED WITH THE APPROPRIATED SUITABLE SUB-BASE AND BASE MATERIAL. THE SUB-BASE AND BASE SHALL BE COMPACTED IN LIFTS IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS.

COMPACTION:
THE PERMITTEE SHALL BE REQUIRED TO HAVE A CONSULTANT INSPECTOR ON SITE AT ALL TIMES DURING ANY AND ALL CONSTRUCTION WITHIN THE STATE RIGHT OF WAY TO PERFORM INSPECTIONS AND TO VERIFY REQUIRED MATERIALS TESTING IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 2.14. ALL COMPACTION AND DENSITY TESTING SHALL BE PERFORMED BY CERTIFIED NORTHEAST TRANSPORTATION TRAINING AND CERTIFICATION PROGRAM TESTING PERSONNEL USING A NUCLEAR DENSITY GAUGE THAT HAS BEEN RECEIVED ITS ANNUAL CERTIFICATION FROM CTDOT. COMPACTION TESTS ON SOILS AND DENSITY TESTS ON ASPHALT SHALL BE PERFORMED ONCE PER LIFT OF MATERIAL INSTALLED ONCE EVERY 25 L.F. OF THE EXCAVATION OR AS DIRECTED BY THE PERMIT INSPECTOR TO ASSURE THAT A RATE OF 95% IS ACHIEVED ON GRANULAR FILL, PROCESS, AND A MINIMAL OF 92% ON ASPHALT. DAILY INSPECTION REPORTS WHICH HAVE BEEN REVIEWED AND STAMPED BY A LICENSED CONNECTICUT PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE DISTRICT PERMIT OFFICE ON A WEEKLY BASIS.

SAW CUTTING:
THE CONTRACTOR SHALL BE REQUIRED TO SAW CUT THE PAVEMENT EDGES IN A VERTICAL, NEAT, STRAIGHT LINE TO A DEPTH NECESSARY TO REMOVE THE PAVEMENT AND PCC TO THE SUBBASE. THE SAW CUTTING SLURRY MUST NOT BE ALLOWED TO ENTER THE STATE'S DRAINAGE SYSTEM. ALL EDGES MUST BE TACK COATED AND THE SURFACE JOINTS SEALED BY AN APPROVED ASPHALTIC MATERIAL APPLIED IN ACCORDANCE WITH STANDARD AND SPECIFICATIONS SECTION 4.06.03.

FINE MILLING:
ALL WORK PERFORMED UNDER MILLING OF BITUMINOUS CONCRETE, REMOVAL OF EXISTING WEARING SERVICE SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS SECTION 4.09. THE EQUIPMENT USED TO MILL MUST COME EQUIPPED WITH AUTOMATIC GRADE OR SLOPE CONTROLS IN ORDER TO PROVIDE A UNIFORM TEXTURED APPEARANCE. THE MILLED SURFACE SHALL BE FREE FROM GOUGES, LONGITUDINAL GROOVES AND RIDGES, OIL FILM, AND OTHER IMPERFECTIONS THAT ARE A RESULT OF DEFECTIVE EQUIPMENT, IMPROPER USE OF EQUIPMENT, OR POOR WORKMANSHIP. ANY MILLED AREA THAT WILL NOT BE EXPOSED TO LIVE TRAFFIC FOR A MINIMUM OF 48 HOURS PRIOR TO PAVING SHALL REQUIRE A VACUUM SWEEPER TRUCK IN ADDITION TO, OR IN LIEU OF MECHANICAL SWEEPING. THE VACUUM SWEEPER TRUCK SHALL HAVE SUFFICIENT POWER AND CAPACITY TO COMPLETELY REMOVE ALL MILLINGS FROM THE ROADWAY SURFACE INCLUDING ANY FINE PARTICLES WITHIN THE TEXTURE OF THE MILLED SURFACE. VACUUM SWEEPER TRUCK HOSE ATTACHMENTS MUST BE USED TO CLEAN AROUND PAVEMENT STRUCTURES OR AREAS THAT CANNOT BE REACHED EFFECTIVELY BY THE MAIN VACUUM. COMPRESSED AIR MAY BE USED IN LIEU OF VACUUM ATTACHMENTS UPON PRIOR APPROVAL FROM THE INSPECTOR. THE PAVEMENT SURROUNDING AND INCLUDING THE EXCAVATION SHALL BE MILLED TO A DEPTH OF 2 INCHES FROM SHOULDER TO CENTER LINE OR SHOULDER TO SHOULDER, DEPENDING ON THE LENGTH OF THE EXCAVATION. THE MILLED AREA SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE OUTERMOST EDGE OF THE ORIGINAL TRENCH LINE. WHEN DETERMINING THE OVERALL WIDTH AND THE STARTING AND ENDING POINTS FOR THE MILLING, CONSIDERATION MUST BE GIVEN TO EXISTING PAVEMENT JOINTS, AT-GRADE RAIL CROSSINGS AND INTERSECTING STREETS. THE MILLED EDGES SHALL BE VERTICALLY FACED AND NOT TAPERED. THE ENTIRE MILLED AREA INCLUDING THE VERTICAL EDGES SHALL BE SWEEPED AND TACK COATED WITH APPROVED MATERIAL AT THE APPROPRIATE RATE.

OVERLAY:
THE AREA SHALL BE OVERLAID WITH S0.50 OR S0.375 LEVEL 2 HMA, COMPACTED BY A ROLLER WITH A VIBRATORY SYSTEM THAT ACHIEVES COMPACTION THROUGH VERTICAL AMPLITUDE FORCES THAT WILL MEET A MINIMAL COMPACTION OF 92% TO A DEPTH OF 2 INCHES. A 10-FOOT STRAIGHTEDGE SHALL BE USED TO ENSURE THAT THE FINAL GRADE OF THE PAVEMENT REPLACEMENT CONSISTENTLY MATCHES THE EXISTING SURFACE GRADE.



2 ROAD SECTION 2 PROFILE
Scale: H-1" = 20' V-1" = 2'



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| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

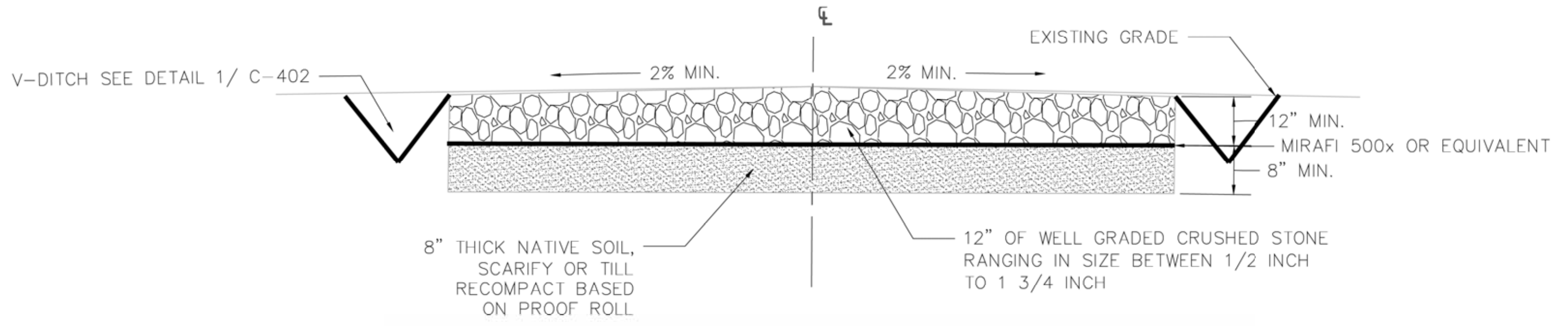
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal for Darin Galloway, No. 34152]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

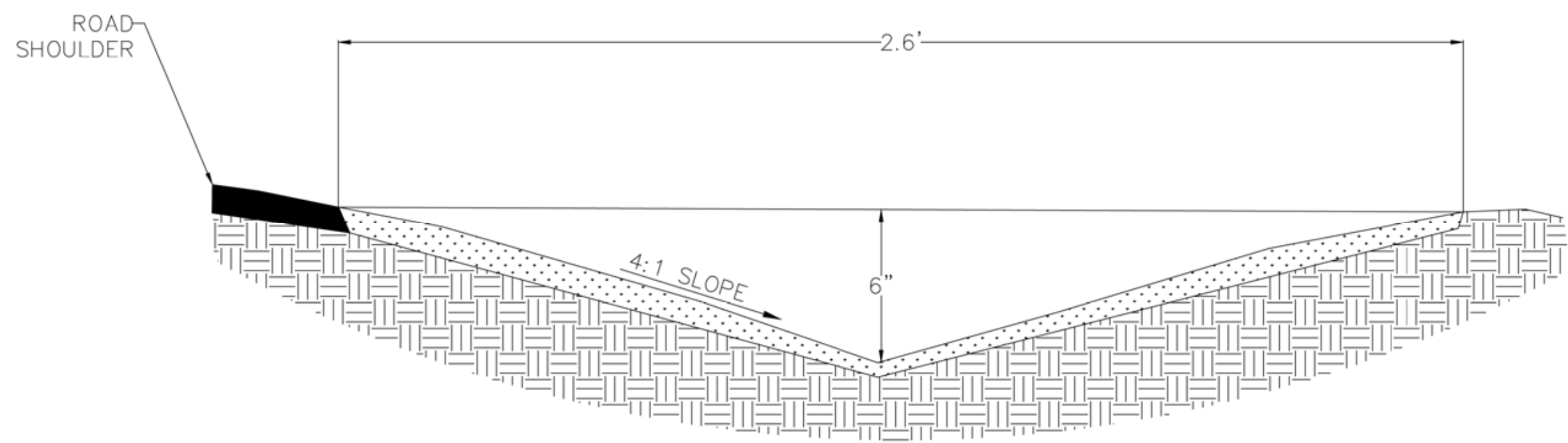
TITLE:
UTILITY ACCESS ROAD

SHEET:
C-305

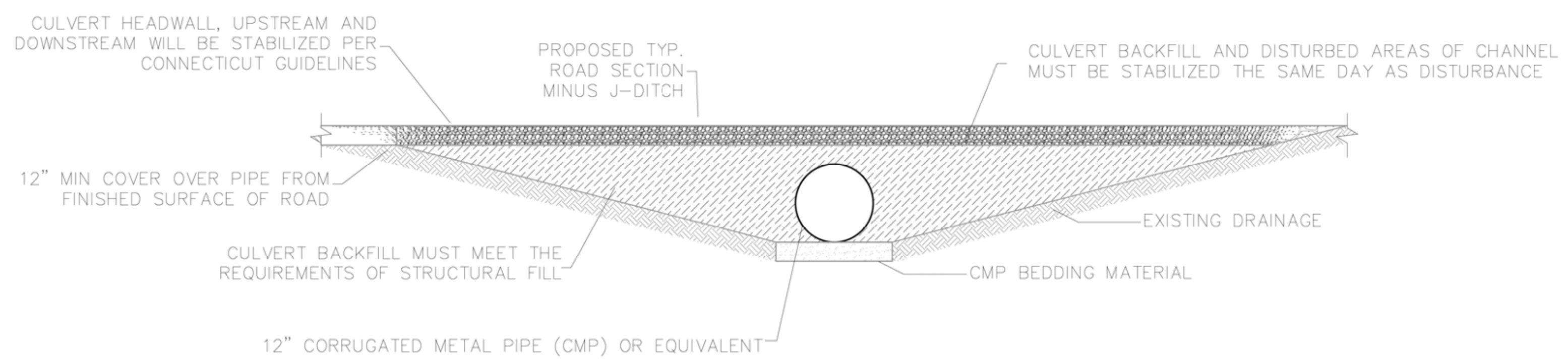




1 SITE ROAD CROSS SECTION, TYP.
C-400 SCALE: NTS



2 V-DITCH, TYP.
C-400 SCALE: NTS



3 CULVERT CROSSING, TYP.
C-400 SCALE: NTS

ON-SITE ACCESS ROAD CONSTRUCTION NOTES:

1. AGGREGATE BASE COARSE (0" TO 12" DEPTH):
 - 1.1. ROADWAY TO CONSIST OF 12-INCH THICKNESS OF WELL GRADED CRUSHED STONE RANGING IN SIZE FROM 1/2" TO 1 3/4", PLACED OVER A PREPARED SUBGRADE.
2. PRIOR TO PLACING FILL OR COMPACTING SCARIFIED SOILS IN ROAD EXCAVATIONS, REMOVAL OF ALL VEGETATION AND OTHER DELETERIOUS MATERIALS SHALL BE CONDUCTED.
3. NATIVE SUBBASE COARSE (12" TO 20" DEPTH):
 - 3.1. FOLLOWING REMOVAL OF MATERIAL WITHIN ROAD EXCAVATION, SCARIFY (OR TILL), WET AND COMPACT NATIVE SUBBASE MATERIAL TO 8" DEPTH MINIMUM BEFORE ADDING AGGREGATE BASE COARSE.
 - 3.2. LAY MIRAFI 500x OR EQUIVALENT GEOTEXTILE FABRIC ON TOP OF PREPARED SUBGRADE.
 - 3.3. NATIVE SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MDD VIA STANDARD PROCTOR (ASTM D698).
4. ON-SITE AGGREGATE ROADWAYS SHALL BE CONSTRUCTED AT GRADE WITH A VERTICAL TOLERANCE OF +/- 2".
5. POSITIVE DRAINAGE SHALL BE MAINTAINED ACROSS THE SITE.
6. ON-SITE AGGREGATE ROADWAY SLOPES SHALL NOT EXCEED 5%.
7. PRIOR TO PLACING FILL OR COMPACTING SCARIFIED SOIL ON PROPOSED ROADWAY LOCATIONS, ALL UNSUITABLE MATERIAL SHALL BE REMOVED. THIS SHALL INCLUDE THE REMOVAL OF ALL VEGETATION AND TOPSOIL, DEBRIS, LOOSE AND DISTURBED SOIL, CONTAMINATED SOIL AND OTHER DELETERIOUS MATERIALS THAT MAY EXIST WITHIN THE AREA OF THE PROPOSED ROADWAY CONSTRUCTION.
8. 20' ACCESS ROADS SHALL ACCOMMODATE ALL CONSTRUCTION, OPERATIONS, MAINTENANCE, AND UTILITY TRAFFIC THROUGHOUT THE SITE.
9. A CROWN OF 2% WILL BE PREPARED SLOPING AWAY FROM THE ROAD ALONG ITS CENTERLINE.
10. A J OR V DITCH DESIGN WILL BE UTILIZED AS EDGE DRAINAGE FOR THE ROADWAYS.
11. J OR V DITCH WILL BE AGGREGATE LINED TO PROTECT AGAINST EROSION.

CONNECTICUT DEPARTMENT OF TRANSPORTATION AGGREGATE REQUIREMENTS

1. GRADATION: COURSE AND FINE AGGREGATES SHALL BE COMBINED AND MIXED BY APPROVED METHODS SO THAT THEY MEET THE FOLLOWING GRADATION REQUIREMENT:

| SQUARE MESH SIEVE | PERCENT PASSING BY MASS |
|---------------------------|-------------------------|
| PASS 2 1/2 INCHES (63 MM) | 100 |
| PASS 2 INCHES (50 MM) | 95-100 |
| PASS 3/4 INCH (19 MM) | 50-75 |
| PASS 1/2 INCH (6.3 MM) | 25-45 |
| PASS #40 | 5-20 |
| PASS #100 | 2-12 |
2. COARSE AGGREGATE: COARSE AGGREGATE SHALL BE EITHER GRAVEL, BROKEN STONE OR RECLAIMED MISCELLANEOUS AGGREGATE CONTAINING NO MORE THAN 2% BY WEIGHT (MASS) OF ASPHALT CEMENT, AT THE OPTION OF THE CONTRACTOR. WHEN TESTED BY MEANS OF THE LOS ANGELES MACHINE, USING AASHTO METHOD T 96, THE COARSE AGGREGATE SHALL NOT HAVE A LOSS OF MORE THAN 50%.
 - A)A) IF GRAVEL IS USED FOR THE COARSE AGGREGATE, IT SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES OF CRUSHED OR UNCRUSHED GRAVEL OR A MIXTURE THEREOF, FREE FROM SOFT, THIN, ELONGATED OR LAMINATED PIECES, LUMPS OF CLAY, LOAM AND VEGETABLE OR OTHER DELETERIOUS SUBSTANCES.
 - A)B) IF BROKEN STONE IS USED FOR THE COARSE AGGREGATE, IT SHALL CONSIST OF SOUND, TOUGH, DURABLE FRAGMENTS OF ROCK OF UNIFORM QUALITY THROUGHOUT. IT SHALL BE FREE FROM SOFT DISINTEGRATED PIECES, MUD, DIRT, ORGANIC OR OTHER INJURIOUS MATERIAL.
 - A)C) IF THE RECLAIMED MISCELLANEOUS AGGREGATE IS USED FOR THE COARSE AGGREGATE, IT SHALL CONSIST OF SOUND, TOUGH, DURABLE FRAGMENTS OF UNIFORM QUALITY THROUGHOUT. IT SHALL BE FREE FROM SOFT DISINTEGRATED PIECES, MUD, DIRT, GLASS, ORGANIC OR OTHER INJURIOUS MATERIAL.
 - A)D) SOUNDNESS FOR GRAVEL, BROKEN STONE AND RECLAIMED MISCELLANEOUS AGGREGATE: WHEN TESTED BY MAGNESIUM SULFATE SOLUTION FOR SOUNDNESS USING AASHTO METHOD T 104, THE COARSE AGGREGATE SHALL SHOW A LOSS OF NOT MORE THAN 15% AT THE END OF 5 CYCLES.
3. FINE AGGREGATE: THE FINE AGGREGATE SHALL BE NATURAL SAND, STONE SAND, SCREENINGS OR ANY COMBINATION THEREOF. THE FINE AGGREGATE SHALL BE LIMITED TO MATERIAL 95% OF WHICH PASSES A NO. 4 (4.75-MM) SIEVE HAVING SQUARE OPENINGS AND NOT MORE THAN 8% OF WHICH PASSES A NO. 200 (75-MM) SIEVE. THE MATERIAL SHALL BE FREE FROM CLAY, LOAM AND DELETERIOUS MATERIALS.
 - A)A) PLASTICITY: WHEN NATURAL SAND IS USED, THE FINE AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE M.02.06-2.
 - A)B) PLASTICITY: WHEN SCREENINGS OR ANY COMBINATION OF SCREENINGS AND NATURAL SAND OR ANY COMBINATION OF STONE SAND AND NATURAL SAND ARE USED, THE FOLLOWING REQUIREMENTS SHALL APPLY:
 - 3.1)1) WHEN THE FRACTION OF THE DRY SAMPLE PASSING THE NO. 100 (150-MM) MESH SIEVE IS 6% OR LESS BY WEIGHT (MASS), NO PLASTIC LIMIT TEST WILL BE MADE.
 - 3.1)2) WHEN THE FRACTION OF THE DRY SAMPLE PASSING THE NO. 100 (150-MM) MESH SIEVE IS GREATER THAN 6% AND NOT GREATER THAN 10% BY MASS, THAT FRACTION SHALL NOT HAVE SUFFICIENT PLASTICITY TO PERMIT THE PERFORMING OF THE PLASTIC LIMIT TEST, USING AASHTO METHOD T 90.
 - 3.1)3) WHEN THE FRACTION OF THE DRY SAMPLE PASSING THE NO. 100 (150-MM) MESH SIEVE IS GREATER THAN 10% BY WEIGHT (MASS), THE SAMPLE SHALL BE WASHED; AND ADDITIONAL MATERIAL PASSING THE NO. 100 (150-MM) MESH SIEVE SHALL BE DETERMINED BY AASHTO METHOD T 146, EXCEPT THAT THE NO. 100 (150-MM) MESH SIEVE SHALL BE SUBSTITUTED FOR THE NO. 40 (425-MM) MESH SIEVE WHERE THE LATTER IS SPECIFIED IN AASHTO METHOD T 146. THE COMBINED MATERIALS THAT HAVE PASSED THE NO. 100 (150-MM) MESH SIEVE SHALL NOT HAVE SUFFICIENT PLASTICITY TO PERMIT THE PERFORMING OF THE PLASTIC LIMIT TEST USING AASHTO METHOD T 90.



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STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
**ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

SEAL: DATE: **22-JUL-20**
PROJECT #: **20200309_CT**
DRAWN BY: **MMM**
CHECKED BY: **DRG**

TITLE: **CIVIL DETAILS**

SHEET: **C-400**



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|--|---|---|
| <p>Culverts 8.4-1</p> <p>8.4 Design Features</p> <p>8.4.1 Culvert Sizes and Shape</p> <p>The culvert size and shape selected shall be based on engineering and economic criteria related to site conditions.</p> <p>The following minimum sizes shall be used to avoid maintenance problems and clogging:</p> <ul style="list-style-type: none"> • 600 mm (24 in) for Interstate Systems, or equivalent for non-circular shapes • 450 mm (18 in) for other systems, or equivalent for non-circular shapes • Use arch or oval shapes only if required by hydraulic limitations, site characteristics, structural criteria, or environmental criteria • Where practical, the minimum height of box culverts should be 1.52 m (5 ft) for inspectability <p>8.4.2 Multiple Barrels</p> <p>Multiple barrel culverts shall fit within the natural dominant channel with minor widening of the channel so as to avoid conveyance loss through sediment deposition in some of the barrels. They are to be avoided where:</p> <ul style="list-style-type: none"> • the approach flow is high velocity, particularly if supercritical, (These sites require either a single barrel or special inlet treatment to avoid adverse hydraulic jump effects.) • fish passage is required unless special treatment is provided to insure adequate low flows (commonly one barrel is lowered) See Section 8.5.5. • a high potential exists for debris problems (clogging of culvert inlet) • a meander bend is present immediately upstream <p>8.4.3 Material Selection</p> <p>The material selection shall consider replacement cost and difficulty of construction as well as traffic delay.</p> <ul style="list-style-type: none"> • The material selected shall be based on a comparison of the total cost of alternate materials over the design life of the structure which is dependent upon the following: <ul style="list-style-type: none"> - durability (service life) - structural strength - hydraulic roughness - bedding conditions - abrasion and corrosion resistance - water tightness requirements • The selection shall not be made using first cost as the only criteria. • See Chapter 4, Culvert Repair, Materials, and Structural Design, for discussion of various pipe types and service life. <p>October 2000 ConnDOT Drainage Manual</p> | <p>Culverts 8.4-2</p> <p>8.4.4 Culvert Skew</p> <p>The culvert skew shall not exceed 45° as measured from a line perpendicular to the roadway centerline without the approval of the Hydraulics and Drainage Section. Consider structural impacts of skew. Flexible culverts may need balanced fill.</p> <p>8.4.5 End Treatment (Inlet or Outlet)</p> <p>The culvert inlet type shall be selected from the following list based on the considerations given and the inlet coefficient, K_E. (A table of recommended values of K_E is included in Appendix B.) Consideration shall also be given to safety since some end treatments can be hazardous to errant vehicles.</p> <p>Projecting Inlets or Outlets</p> <ul style="list-style-type: none"> • extend beyond the roadway embankment and are susceptible to damage during roadway maintenance and from errant vehicles • have low construction cost • have poor hydraulic efficiency for thin materials • shall include anchoring the inlet to concrete slope paving and toe wall to strengthen the weak leading edge • are used predominantly with metal pipe <p>Concrete Headwalls with Bevels</p> <ul style="list-style-type: none"> • increase the efficiency of metal pipe • provide embankment stability and embankment erosion protection • provide protection from buoyancy • shorten the required structure length <p>Improved Inlets</p> <ul style="list-style-type: none"> • shall be considered for culverts which will operate in inlet control • can increase the hydraulic performance of the culvert, but may also add to the total culvert cost, therefore, they should only be used if practicable • slope-taper shall not be considered where fish passage is required • could increase downstream flows and velocities <p>Commercial End Sections</p> <ul style="list-style-type: none"> • are available for corrugated metal, high density polyethylene pipe and concrete pipe • retard embankment erosion and incur less damage from maintenance • may improve projecting metal pipe entrances by increasing hydraulic efficiency and improving their appearance • are hydraulically equal to a headwall <p>October 2000 ConnDOT Drainage Manual</p> | <p>Culverts 8.4-3</p> <p>Wingwalls</p> <ul style="list-style-type: none"> • are used to retain the roadway embankment to avoid a projecting culvert barrel • are used where the side slopes of the channel are unstable • are used where the culvert is skewed to the normal channel flow • provide the best hydraulic efficiency if the flare angle is between 30° and 60° <p>Aprons</p> <ul style="list-style-type: none"> • are used to reduce scour from high headwater depths or from approach velocity in the channel • shall extend at least two pipe diameters upstream • shall not protrude above the normal streambed elevation <p>Mitered Inlets</p> <ul style="list-style-type: none"> • are hydraulically more efficient than thin edge projecting • shall be mitered to match the fill slope • shall include anchoring the inlet to strengthen the weak leading edge for culverts 1200 mm (48 in) in diameter and larger <p>Cut-off-Walls</p> <ul style="list-style-type: none"> • are generally used as primary protection against piping at culvert inlets and as secondary protection against erosion at culvert outlets (primary outlet protection is designed by the hydraulic engineer) • shall be used at endwalls and slope paved inlets and outlets as detailed on the Standard Drawings • shall have embedment depths which comply with the following: <ol style="list-style-type: none"> 1) for culverts included on Standard Drawings, use dimension shown 2) for culverts not included on Standard Drawings, embed cutoff walls a minimum of 1.2m (4 ft) below the streambed and 0.6m (2 ft) below the bottom of the culvert 3) where riprap is required, the embedment depth should not be less than the thickness of the riprap/bedding material <p>Weep Holes</p> <ul style="list-style-type: none"> • may be required to relieve uplift pressure and reduce hydrostatic pressure behind headwalls <p>May 2002 ConnDOT Drainage Manual</p> |
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SEAL: DATE: **22-JUL-20**
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DRAWN BY: **MMM**
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TITLE:
CULVERT DETAILS

SHEET:
C-401

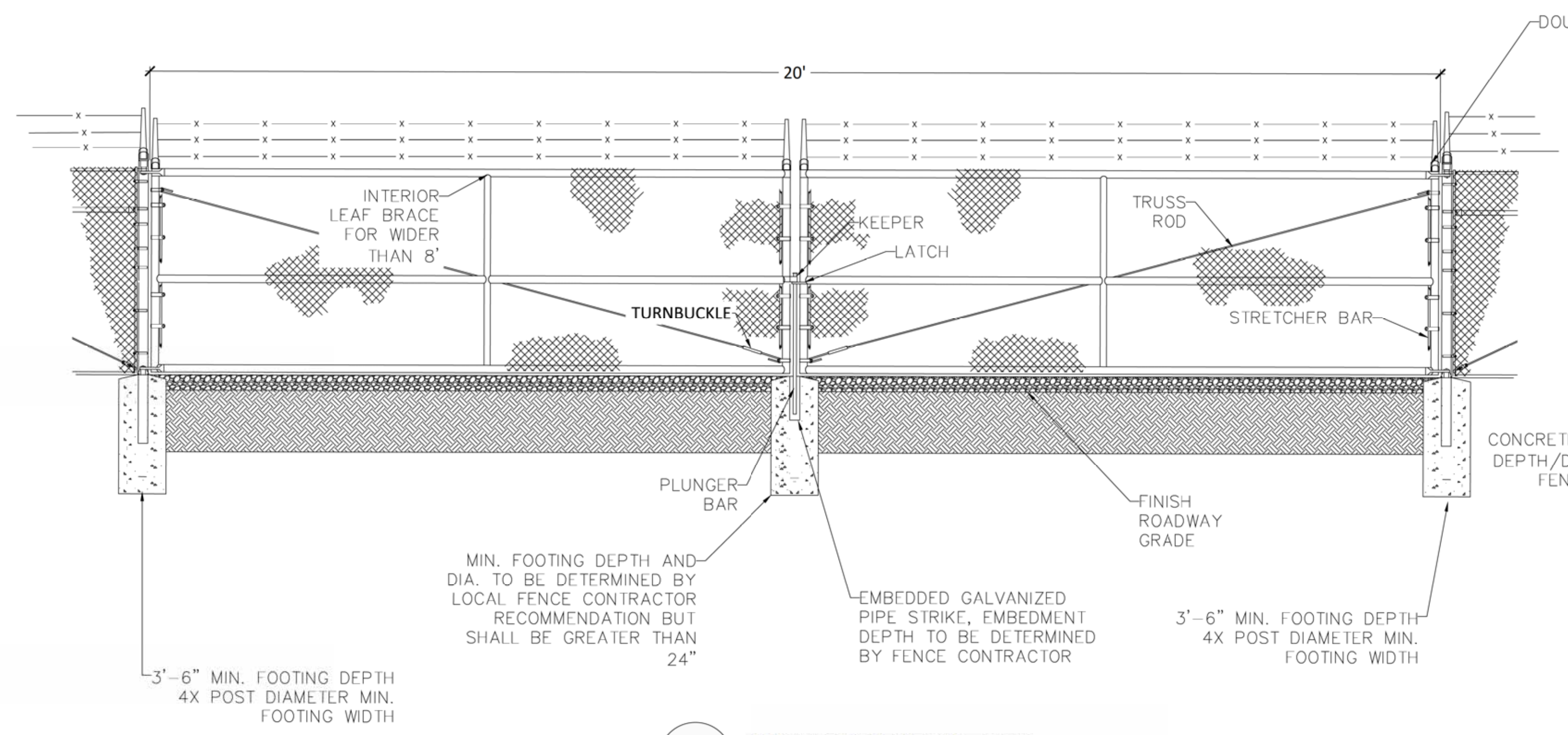
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| <p>Culvert Repair, Materials, and Structural Design 4.4-3</p> <p>4.4.3 Corrugated Steel</p> <p>Corrugated steel culverts are made with factory-produced corrugated sheet steel. Corrugated pipe culverts are made with factory-produced corrugated pipe sections. Large corrugated culverts are normally field-assembled using structural plate products. Structural plate steel products are available as structural plate pipes, box culverts, or long span structures. Standard shapes for corrugated steel culverts are shown on Table 4-2.</p> <ul style="list-style-type: none"> • Material – Corrugated steel pipe is fabricated from sheets coated with zinc or aluminum. It is reasonably lightweight for shipping and comes in a large range of thicknesses and corrugations to provide the appropriate strength. However, it requires controlled backfill for proper soil support. Other options include various coatings and/or pavings for added protection. • Shapes – Corrugated steel may be used for a wide variety of shapes, sizes, and lengths of culverts. The culverts may be made from prefabricated sections that are factory produced or assembled in the field from specially fabricated plates. The shapes may be made from various thicknesses of plate stock. <p>Pipe – Corrugated steel pipe is factory made in two basic shapes: round and pipe arch. Both round and arch shapes are available in a wide range of standard sizes. Round pipe is available in standard sizes up to 3600 mm (144 inches) in diameter. Standard sizes for pipe arch are available in sizes up to the equivalent of 3000 mm (120 inch) diameter round pipe. Both shapes are produced in several wall thicknesses, several corrugation sizes, as shown in Figure 4-10 and with annular (circumferential) or helical (spiral) corrugations.</p> <p>Pipes with annular corrugations have riveted, spot welded, or bolted seams. Pipes with helical corrugations have continuously welded seams or lock seams. Corrugated steel pipe and pipe arch are usually coated with zinc (galvanized) or aluminum. Additional protective coatings are used with the metallic coating when there are potential corrosion or abrasion problems.</p> <p>Structural plate – Structural plate steel pipes are field assembled from standard corrugated galvanized steel plates. Standard plates have corrugations with a 150mm (6-inch) pitch and a depth of 50 mm (2 inches). Plates are manufactured in a variety of thicknesses and are pre-curved for the size and shape of the structure to be erected. Standard plates have a nominal length of either 3 m or 3.7m (10 or 12 feet) and are produced in standard widths of 3N, 5N, 6N, 7N, and 8N, where N equals 3 pi or 244 mm (9.6 inches). Widths are measured along the circumference of the structure. Since the circumference of a circle equals pi times the diameter, the use of dimensions expressed in N or pi permits easy conversion from pipe circumference of 60 pi or 20N and would normally be assembled from four 5N plates. Structural plate pipes are available in six basic shapes: round, pipe arch, vertical ellipse, horizontal ellipse, and underpass. The standard sizes available range in span from 1.5 m to 7.9m (5 feet to 26 feet).</p> <p>Box – Steel box sections use standard 150 by 50 mm (6 by 2 inch) corrugated galvanized steel plates with special reinforcing elements applied to the areas of maximum moment or 375 by 140 mm (15 by 5 1/2 inches) corrugated plate without ribs. Steel box culverts are available with spans that range from 3m (9 feet 8 inches) to 6.3m (20 feet 9 inches).</p> <p>October 2000 ConnDOT Drainage Manual</p> |
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| <p>4.4-4 Culvert Repair, Materials, and Structural Design</p> <p>Long span – Long span steel structures are assembled using conventional 150 by 50 mm (6 by 2 inch) corrugated galvanized steel plates with longitudinal or circumferential stiffening members or 375 by 140 mm (15 by 5 1/2 inch) corrugated plate without ribs. There are five standard shapes for long span structures: horizontal elliptical, pipe arch, low profile arch, high profile arch, and pear shape. The long span pipe arch is not commonly used. The span lengths of typical sections range from 5.9m (19 feet 4 inches) to 12.2 m (40 feet). Longer spans are available for some shapes as special designs.</p> <p>Figure 4-10 Common corrugated patterns (not to scale) (English only)</p> <p>October 2000 ConnDOT Drainage Manual</p> |
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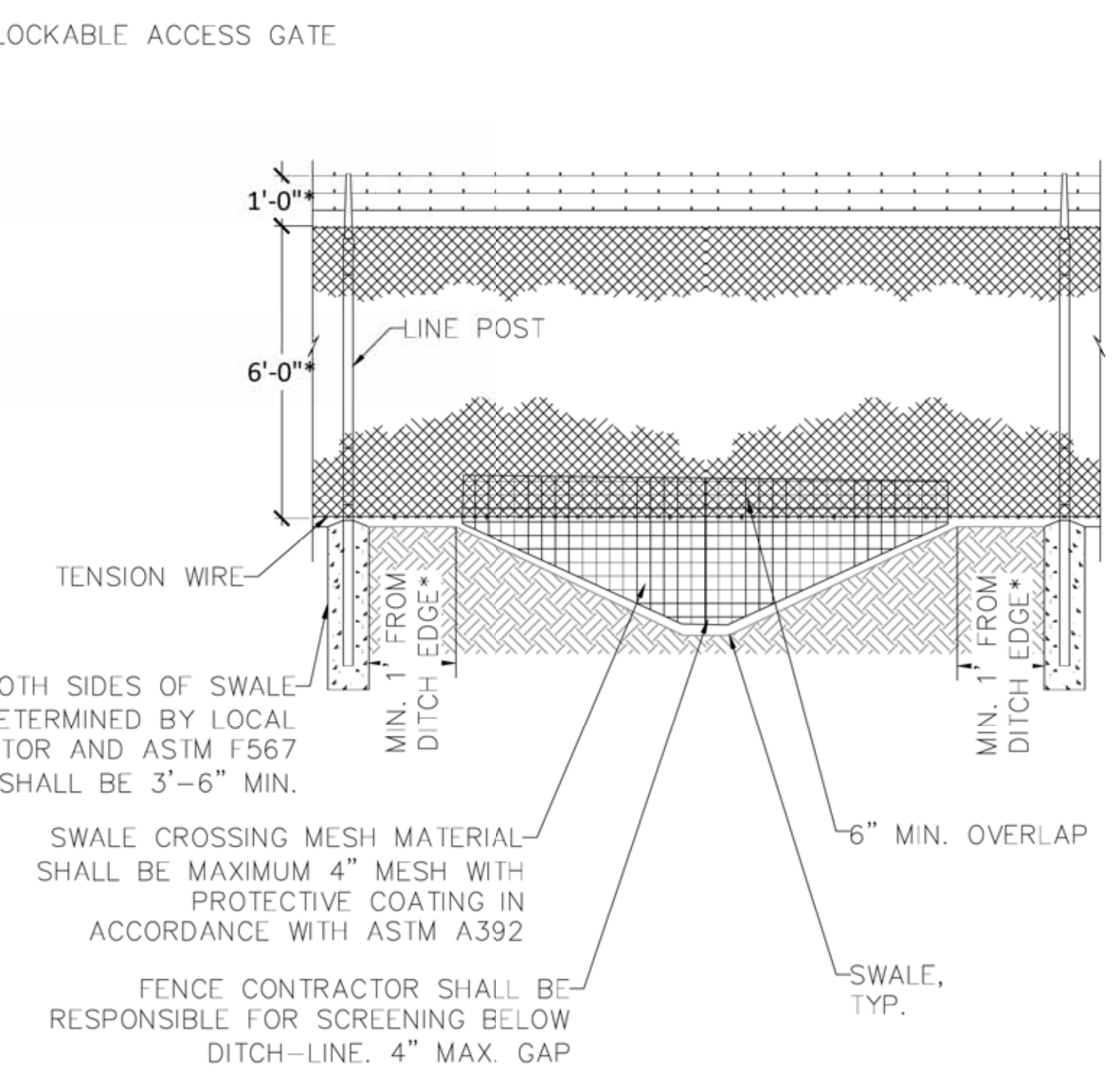
| <p>Culvert Repair, Materials, and Structural Design 4.4-5</p> <p>Table 4-2 Standard corrugated steel culvert shapes (English only)</p> <table border="1"> <thead> <tr> <th>Shape</th> <th>Range of Sizes</th> <th>Common Uses</th> </tr> </thead> <tbody> <tr> <td>Round</td> <td>6 in. – 26 ft.</td> <td>Culverts, subdrains, sewers, service tunnels, etc. All plates same radius. For medium and high fills (or benches).</td> </tr> <tr> <td>Vertically-elongated (ellipse) 5% is common</td> <td>4 – 21 ft. nominal before elongating</td> <td>Culverts, sewers, service tunnels, recovery tunnels. Plates of varying radii shop fabricated. For appearance and where backfill compaction is only moderate.</td> </tr> <tr> <td>Pipe-arch</td> <td>Span x Rise 17 ft. x 13 in. to 20 ft. 7 in. x 13 ft. 2 in.</td> <td>Where headroom is limited. Has hydraulic advantages at low flows. Corner plate radius: 18 inches or 31 inches for structural plate.</td> </tr> <tr> <td>Underpass*</td> <td>Span x Rise 6 ft. 8 in. x 6 ft. 9 in. to 20 ft. 4 in. x 17 ft. 9 in.</td> <td>For pedestrians, livestock or vehicles (structural plate).</td> </tr> <tr> <td>Arch</td> <td>Span x Rise 6 ft. x 1 ft. 9 1/2 in. to 25 ft. x 12 ft. 6 in.</td> <td>For low clearance large waterway opening, and aesthetics (structural plate).</td> </tr> <tr> <td>Horizontal Ellipse</td> <td>Span 7 – 40 ft.</td> <td>Culverts, grade separations, storm sewers, tunnels.</td> </tr> <tr> <td>Pear</td> <td>Span 25 – 30 ft.</td> <td>Grade separations, culverts, storm sewers, tunnels.</td> </tr> <tr> <td>High Profile Arch</td> <td>Span 20 – 45 ft.</td> <td>Grade separations, culverts, storm sewers, tunnels, ammo ammunition magazines, earth covered storage.</td> </tr> <tr> <td>Low Profile Arch</td> <td>Span 20 – 50 ft.</td> <td>Low-Wide waterway enclosures, culverts, storm sewers.</td> </tr> <tr> <td>Box Culverts</td> <td>Span 10 – 26 ft.</td> <td>Low-Wide waterway enclosures, culverts, storm sewers.</td> </tr> <tr> <td>Specials</td> <td>Various</td> <td>For lining old structures or other special purposes. Special fabrication.</td> </tr> </tbody> </table> <p>*For equal area or clearance, the round shape is generally more economical and simpler to assemble.</p> <p>October 2000 ConnDOT Drainage Manual</p> | Shape | Range of Sizes | Common Uses | Round | 6 in. – 26 ft. | Culverts, subdrains, sewers, service tunnels, etc. All plates same radius. For medium and high fills (or benches). | Vertically-elongated (ellipse) 5% is common | 4 – 21 ft. nominal before elongating | Culverts, sewers, service tunnels, recovery tunnels. Plates of varying radii shop fabricated. For appearance and where backfill compaction is only moderate. | Pipe-arch | Span x Rise 17 ft. x 13 in. to 20 ft. 7 in. x 13 ft. 2 in. | Where headroom is limited. Has hydraulic advantages at low flows. Corner plate radius: 18 inches or 31 inches for structural plate. | Underpass* | Span x Rise 6 ft. 8 in. x 6 ft. 9 in. to 20 ft. 4 in. x 17 ft. 9 in. | For pedestrians, livestock or vehicles (structural plate). | Arch | Span x Rise 6 ft. x 1 ft. 9 1/2 in. to 25 ft. x 12 ft. 6 in. | For low clearance large waterway opening, and aesthetics (structural plate). | Horizontal Ellipse | Span 7 – 40 ft. | Culverts, grade separations, storm sewers, tunnels. | Pear | Span 25 – 30 ft. | Grade separations, culverts, storm sewers, tunnels. | High Profile Arch | Span 20 – 45 ft. | Grade separations, culverts, storm sewers, tunnels, ammo ammunition magazines, earth covered storage. | Low Profile Arch | Span 20 – 50 ft. | Low-Wide waterway enclosures, culverts, storm sewers. | Box Culverts | Span 10 – 26 ft. | Low-Wide waterway enclosures, culverts, storm sewers. | Specials | Various | For lining old structures or other special purposes. Special fabrication. |
|---|--|--|-------------|-------|----------------|--|---|--------------------------------------|--|-----------|--|---|------------|--|--|------|--|--|--------------------|-----------------|---|------|------------------|---|-------------------|------------------|---|------------------|------------------|---|--------------|------------------|---|----------|---------|---|
| Shape | Range of Sizes | Common Uses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Round | 6 in. – 26 ft. | Culverts, subdrains, sewers, service tunnels, etc. All plates same radius. For medium and high fills (or benches). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Pipe-arch | Span x Rise 17 ft. x 13 in. to 20 ft. 7 in. x 13 ft. 2 in. | Where headroom is limited. Has hydraulic advantages at low flows. Corner plate radius: 18 inches or 31 inches for structural plate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Underpass* | Span x Rise 6 ft. 8 in. x 6 ft. 9 in. to 20 ft. 4 in. x 17 ft. 9 in. | For pedestrians, livestock or vehicles (structural plate). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arch | Span x Rise 6 ft. x 1 ft. 9 1/2 in. to 25 ft. x 12 ft. 6 in. | For low clearance large waterway opening, and aesthetics (structural plate). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Ellipse | Span 7 – 40 ft. | Culverts, grade separations, storm sewers, tunnels. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pear | Span 25 – 30 ft. | Grade separations, culverts, storm sewers, tunnels. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High Profile Arch | Span 20 – 45 ft. | Grade separations, culverts, storm sewers, tunnels, ammo ammunition magazines, earth covered storage. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Profile Arch | Span 20 – 50 ft. | Low-Wide waterway enclosures, culverts, storm sewers. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Box Culverts | Span 10 – 26 ft. | Low-Wide waterway enclosures, culverts, storm sewers. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Specials | Various | For lining old structures or other special purposes. Special fabrication. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|--|
| <p>4.4-6 Culvert Repair, Materials, and Structural Design</p> <p>4.4.4 Corrugated Aluminum</p> <p>Corrugated aluminum culverts are constructed from factory assembled corrugated aluminum pipe or field assembled from structural plates. Structural plate aluminum culverts are available as conventional structural plate structures, box culverts, or long span structures.</p> <ul style="list-style-type: none"> • Material – Corrugated aluminum pipe is fabricated from aluminum-alloy sheets. It is very lightweight for shipping and handling. It has good resistance to corrosion, especially in brackish waters but is subject to abrasion in fast-flowing streams with a significant load of sand or rock. It is generally more flexible than steel, requires greater care in installation, and is less tolerant of less-than-normal cover. • Shapes – Corrugated aluminum may be used for a wide variety of shapes, sizes, and lengths of culverts. The culverts may be made from prefabricated sections that are factory produced or assembled in the field from specially fabricated plates. The shapes may be made from various thicknesses of plate stock. <p>Pipe - Factory assembled aluminum pipe is available in two basic shapes: round and pipe arch. Both shapes are produced with several different wall thicknesses, several corrugation patterns, and with annular (circumferential) or helical (spiral) corrugations. Round aluminum pipe is available in standard sizes up to 3000 mm (120 inches) in nominal diameter. Aluminum arch pipe is available in sizes up to the equivalent of a 2400 mm (96-inch) diameter round pipe.</p> <p>Structural plate - Structural plate aluminum pipes are field assembled with 228 mm (9-inch)-pitch by 64 mm (2.5-inch)-depth corrugations. Plates are manufactured in a variety of plate thicknesses and are pre-curved for the specific size and shape of the structure to be erected. Plates are manufactured in lengths of 3N through 18N, where N equals 3 pi or 244 mm (9.625 inches). Plate length is measured along the circumference of the structure. Standard plates have a net width of 1.4 m (4.5 ft.). Structural plate aluminum pipes are produced in five basic shapes: round, pipe arch, pedestrian/animal underpass, and vehicle underpass. A wide range of standard sizes is available for each shape. Spans as large as 7.9 m (26 feet) can be obtained for the arch shape.</p> <p>Box - The aluminum box culvert utilizes standard aluminum structural plates with aluminum rib reinforcing added in the areas of maximum moments. Ribs are bolted to the exterior of the aluminum shell during installation. Aluminum box culverts are suitable for shallow depths of fill and are available with spans ranging from 2.7 m (8 feet 9 inches) to 7.7m (25 feet 5 inches).</p> <p>Long Span - Long span aluminum structures are assembled using conventional 225 by 64 mm (9- by 2.5-inch) corrugated aluminum plates and aluminum rib stiffeners. Long span aluminum structures are available in the same five basic shapes as steel long spans: including horizontal ellipse, pipe arch, low profile arch, high profile arch, and pear shape. The typical sizes for aluminum spans are essentially the same as the typical sizes available for steel long span structures. Spans range from 5.9 m (19 feet 4 inches) to 12.2 m (40 feet).</p> <p>October 2000 ConnDOT Drainage Manual</p> |
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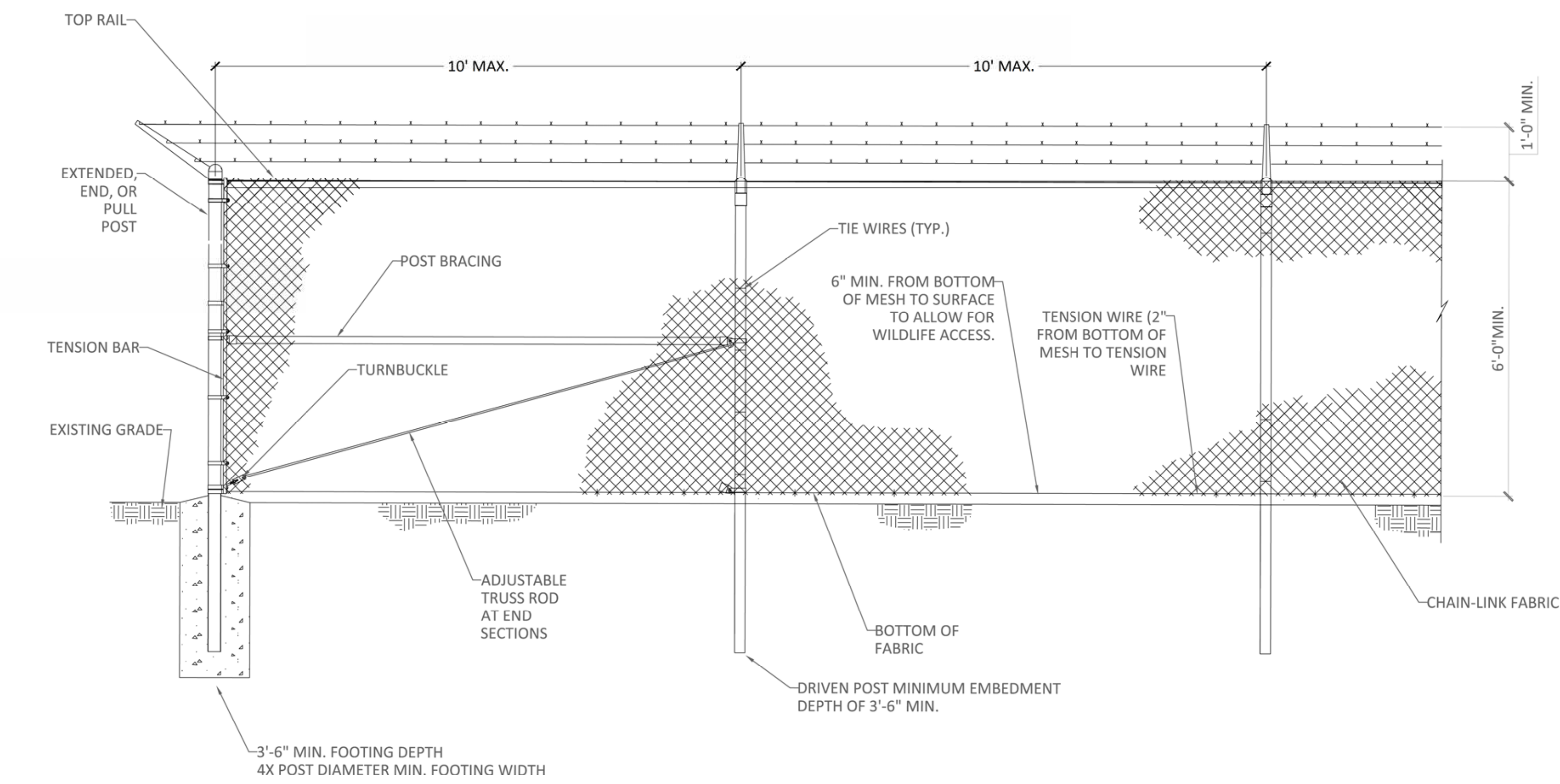


1 DRIVE GATE DETAIL, TYP.
C-402 Scale: NTS

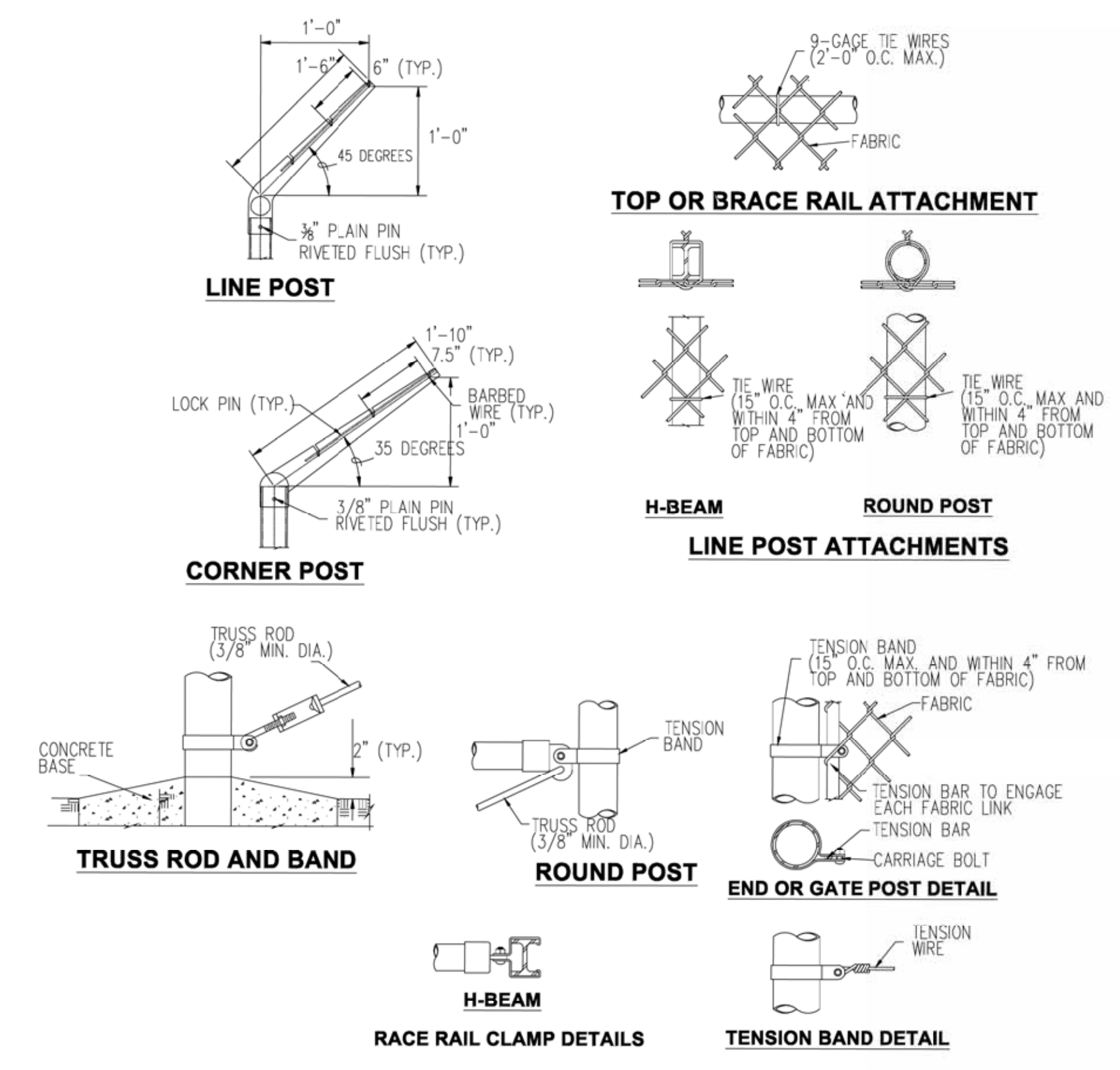


2 FENCE CROSSING SWALE DETAIL, TYP.
C-402 Scale: NTS

- FENCE INSTALLATION NOTES:**
- FENCE TO BE INSTALLED IN GENERAL ACCORDANCE WITH ASTM F567. LOCAL FENCE CONTRACTOR TO ALTER ASTM F567 REQUIREMENTS TO MEET SITE SPECIFIC CONDITIONS.
 - FENCE FABRIC SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A392, CLASS 2.
 - STRENGTH AND PROTECTIVE COATINGS OF ALL FENCE FRAMEWORK SHALL CONFORM TO ASTM F1083.
 - CORNER, END, OR PULL POST FOOTING MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 2,500 PSI MIN.
 - CORNER, END, OR PULL POST FOOTING DEPTH SHALL BE A MINIMUM OF 36".
 - SWING GATE POST FOOTING DEPTHS AND DIAMETERS SHALL BE DETERMINED BASED ON ASTM F567, TABLE 2 AND ALTERED AS NEEDED BY FENCE CONTRACTOR.
 - IN AREAS WHERE EXISTING FENCES CONFLICT WITH SITE SECURITY FENCE, CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING FENCE.
 - POSTS SHALL BE STEEL PIPE, ASTM F1083 STANDARD WEIGHT SCHEDULE 40
 - LINE POSTS - 2" SCHEDULE 40
 - TERMINAL POSTS (EXTENDED, END, AND PULL) 2 1/2" SCHEDULE 40.
 - ALL STEEL OR MALLEABLE IRON PARTS AND ACCESSORIES SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
 - ALL FENCE GAGE TO BE A MINIMUM OF 9.



3 SECURITY FENCE DETAIL, TYP.
C-402 Scale: NTS



4 FENCE ATTACHEMENT DETAILS, TYP.
C-402 Scale: NTS



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
| 1 | 60% FOR CLIENT REVIEW | 06/11/2020 |
| 2 | 90% ISSUED FOR CLIENT REVIEW | 06/30/2020 |
| 3 | IFC (DRAFT FOR REVIEW) | 07/02/2020 |
| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

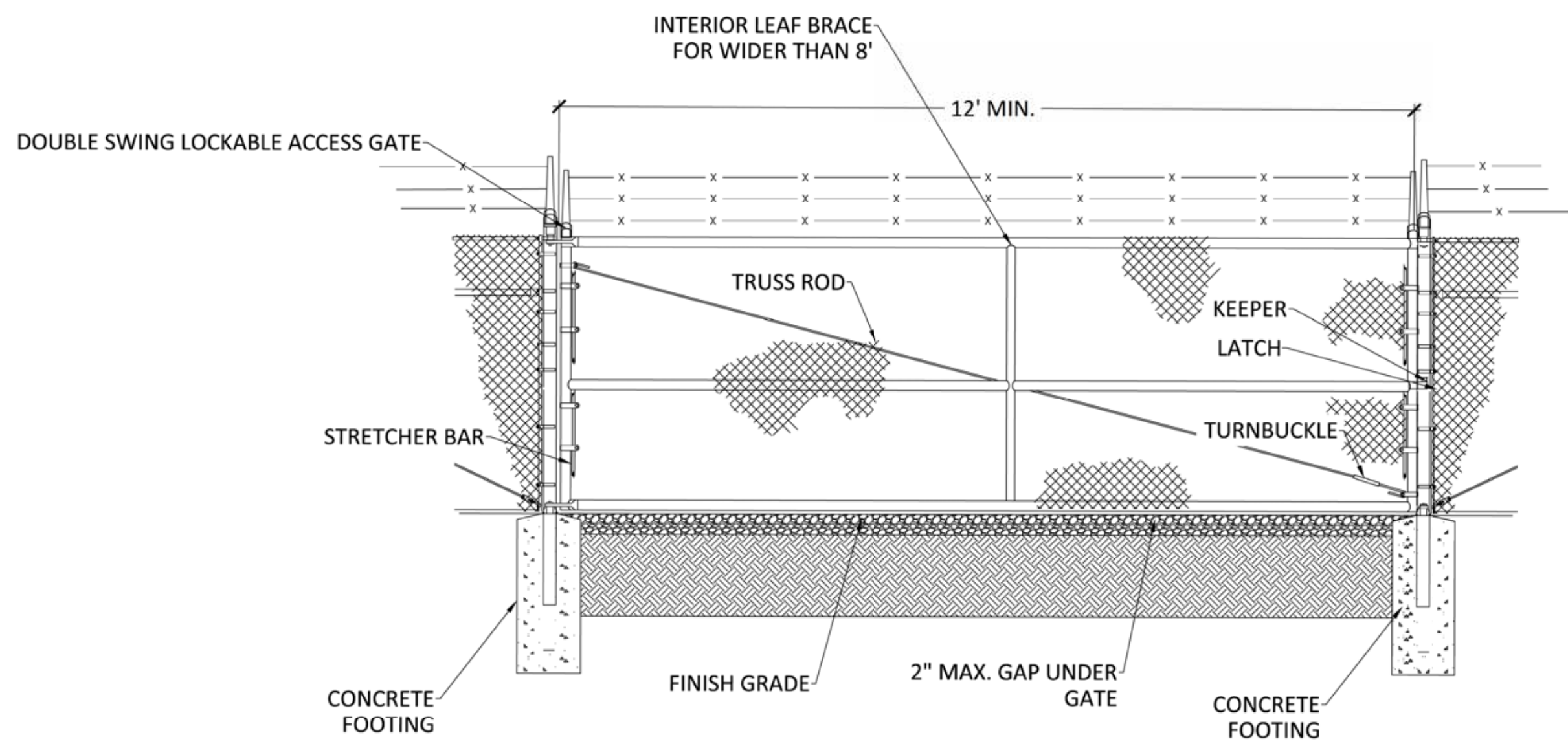
PROJECT ADDRESS:
**ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

SEAL: [Professional Engineer Seal]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

TITLE: **FENCE DETAILS**

SHEET: **C-402**





- FENCE INSTALLATION NOTES:**
1. 12' MAINTENANCE GATES TO BE UTILIZED AT LOCATIONS FOR ACCESS TO MAINTAIN SEDIMENT TRAPS OR BASINS.
 2. FOR LOCATIONS SEE G&D DETAIL SHEETS.
 3. EMBEDMENT DEPTHS AND INSTALLATION TO MIRROR 20' DRIVE GATES.

1 12' MAINTENANCE ACCESS GATE, TYP.
C-403 Scale: NTS



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
| 1 | 60% FOR CLIENT REVIEW | 06/11/2020 |
| 2 | 90% ISSUED FOR CLIENT REVIEW | 06/30/2020 |
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| - | - | - |
| - | - | - |
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| | CHECKED BY: DRG |

TITLE:
FENCE DETAILS

SHEET:
C-403



EROSION AND SEDIMENT CONTROL NOTES:

ALL EROSION AND SEDIMENT CONTROL WORK AND BMPs SHALL ADHERE TO THE FOLLOWING DOCUMENTS:

- 1. CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (CT-DEEP) GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES (CGP) DEEP-WPED-GP-015.
2. NORTH STONINGTON ORDINANCE.
3. CONNECTICUT STATE BUILDING CODE.
4. 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. ALL WORK SHALL COMPLY WITH THE CONDITIONS OF THE PERMITS OBTAINED FOR THE PROJECT AND ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
6. ADDITIONAL BMP REQUIREMENTS ARE IN THE WETLAND AND VERNAL POOL PROTECTION PLAN INCLUDED ON ESC-102.

STANDARD STABILIZATION NOTES:

- 7. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED IN ACCORDANCE WITH THE SWPCP.
8. ALL STABILIZED AREAS SHALL BE INSPECTED BY A CERTIFIED SWPCP INSPECTOR.

TYPICAL CONSTRUCTION SEQUENCE:

- 9. INSTALL SITE ENTRANCE.
10. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
11. CLEAR (GRUB IF NECESSARY) SITE FOR PERIMETER EROSION AND SEDIMENT CONTROLS (BMP'S) ONLY.
12. INSTALL TEMPORARY PERIMETER BMPs.
13. INSTALL TEMPORARY SEDIMENT TRAPS AND TEMPORARY SEDIMENT BASINS.
14. ROUGH GRADE ROAD(S) AND LAYDOWN/MATERIAL STORAGE AREA IMPORTING MATERIAL AS NECESSARY FROM ON-SITE OR OFF-SITE SOURCE PER PROPOSED GRADES PROVIDED TO CREATE OR MAINTAIN POSITIVE DRAINAGE.
15. CONSTRUCT THE SOLAR PLANT.
16. FINAL GRADE THE ENTRANCE.
17. PERFORM TEMPORARY STABILIZATION SEEDING OF DISTURBED AREAS IF REQUIRED.
18. CONSTRUCT PERMANENT STORMWATER CONTROLS.
19. STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT VEGETATION OR SITE SPECIFIC VEGETATION AS NOTED INCLUDING TOP SOILING, FERTILIZING, AND MULCHING, IF REQUIRED.
20. STABILIZATION OF ALL AREAS DISTURBED BY REMOVAL OF BMP'S WILL BE PERFORMED PRIOR TO FINAL INSPECTION.
21. ALL MAINTENANCE OF THE FINAL SITE AND PERMANENT BMP'S SHALL BE CONTROLLED BY SITE OWNER.

- 22. IF THE SEQUENCE OF CONSTRUCTION AND BMP INSTALLATION IS MODIFIED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THESE CORRECTIONS TO UPDATE THE EROSION AND SEDIMENT CONTROL PLAN. THE CERTIFIED SWPCP DESIGNER SHALL UPDATE THE SWPCP. THESE CHANGES SHALL BE APPROVED BY THE AHJ PRIOR TO IMPLEMENTATION.

INSPECTIONS AND MAINTENANCE OF BMP'S:

- 23. ADDITIONAL INSPECTION REQUIREMENTS ARE IN THE WETLAND AND VERNAL POOL PROTECTION PLAN INCLUDED ON ESC-102.
24. THE CERTIFIED SWPCP INSPECTOR SHALL INSPECT ALL DISCHARGE POINTS, DISTURBED AREAS, MATERIAL STORAGE AREAS, STRUCTURAL CONTROLS AND CONSTRUCTION ENTRANCES/EXITS IN ACCORDANCE WITH THE APPROVED SWPCP. ALL OBSERVATIONS AND INCIDENTS OF NON-COMPLIANCE, CORRECTIVE ACTIONS, AND MAINTENANCE SHALL BE RECORDED IN THE SWPCP INSPECTION REPORT.
25. INSPECTIONS OF BMP'S SHALL BE DOCUMENTED AND SIGNED BY THE CERTIFIED SWPCP INSPECTOR AND PROVIDED TO PROJECT MANAGEMENT AND CONTRACTOR.
26. IF BMP INSPECTION REPORTS DO NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, THE BMP INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPCP AND THE CGP.
27. IF REQUIRED, MAINTENANCE OF BMP'S SHALL BE CONDUCTED BY A CERTIFIED SWPCP INSTALLER AND SHALL OCCUR WITHIN 24 HOURS OF THE INSPECTION.
28. BMP'S DETAILED IN THE EROSION AND SEDIMENT CONTROL PLAN ARE ONLY AN ESTIMATE OF WHAT NEEDS TO BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION. IF BMP INSPECTIONS IDENTIFY AREAS OF THE PROJECT SITE WHERE PROPERLY INSTALLED BMP'S ARE NOT CONTROLLING FLOW OF SEDIMENT OFF-SITE, IT IS THE CONTRACTORS OBLIGATION TO IMPLEMENT COST EFFECTIVE/PRACTICAL BMP'S WHILE GRADING AND CONSTRUCTION ACTIVITIES ARE OCCURRING.
29. EROSION AND SEDIMENT CONTROL DRAWINGS ARE SUBJECT TO ADDITIONAL, NEW AND

ALTERNATIVE BMP'S WHEN REQUESTED OR APPROVED BY THE ENGINEER, CERTIFIED SWPCP INSPECTOR, CERTIFIED SWPCP DESIGNER, OR AHJ.

- 30. IT IS THE RESPONSIBILITY OF THE CERTIFIED SWPCP INSPECTOR TO IDENTIFY ALL INCIDENTS OF NON-COMPLIANCE, CORRECTIVE ACTIONS, AND MAINTENANCE AND ENSURE THAT PROJECT MANAGEMENT IS ALERTED TO ALL ISSUES.
31. SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS OF SEDIMENT REACHING 1/3 HEIGHT OF PERIMETER BMPs.
32. SEDIMENT TRACKED OFF-SITE FROM CONSTRUCTION TRAFFIC SHALL BE REMOVED FROM PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.
PERIMETER CONTROL BMPs:
33. PERIMETER CONTROL BMPs SHALL BE CONSTRUCTED BEFORE UP-SLOPE GROUND COVER IS REMOVED.
34. CLEARING, GRUBBING, AND STUMPING CAN OCCUR BEFORE SILT FENCE INSTALLATION IF GROUND COVER IS REMOVED.
35. ALL PERIMETER CONTROL BMPs SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE PERIMETER CONTROL BMP ARE DISSIPATED ALONG ITS LENGTH.
36. ENDS OF PERIMETER CONTROL BMPs SHALL BE BROUGHT UP-SLOPE SLIGHTLY SO THAT WATER PONDING WILL BE PREVENTED FROM FLOWING AROUND THE BMPs.
37. IF USED BENEATH A SLOPE, SILT FENCE SHOULD BE A MINIMUM OF 10 FEET FROM THE TOE OF THE SLOPE.
38. SILT FENCE SHALL BE TRENCHED IN. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
39. WHERE 2 SECTIONS OF PREFABRICATED SILT FENCE ARE COMBINED INTO ONE RUN, THE END POSTS SHALL BE CONNECTED TOGETHER, NOT SIMPLY OVERLAPPED.
32. SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IN RUNOFF FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
32.1. AN ADDITIONAL RUN OF SILT FENCE SHALL BE PLACED UPSTREAM
32.2. THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED
32.3. ACCUMULATED SEDIMENT SHALL BE REMOVED
32.4. OTHER PRACTICES SHALL BE IMPLEMENTED.
33. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE HALF OF THE HEIGHT OF THE SILT FENCE.
34. ALL STOCKPILES SHALL BE ENCIRCLED WITH AN APPROPRIATE BMP SUCH AS SILT FENCE, FIBER ROLL, OR SEDIMENT LOGS.
35. SILT FENCE FABRIC SHALL MEET THE FOLLOWING SPECIFICATIONS:
35.1. MINIMUM TENSILE STRENGTH = 120 LBS (ASTM D4632)
35.2. MAXIMUM ELONGATION AT 60 LBS. = 15% (ASTM D 4632)
35.3. MINIMUM PUNCTURE STRENGTH = 50 LBS. (ASTM D 4833)
35.4. MINIMUM TEAR STRENGTH = 40 LBS. (ASTM D4533)
35.5. APPARENT OPENING SIZE <= 0.84MM (ASTM D 4751)
35.6. MINIMUM PERMITTIVITY = 1X10-2SEC.-1 (ASTM D 4491)
35.7. WATER FLOW RATE = 15 GAL./MIN./SQ. FT.
35.8. UV EXPOSURE STRENGTH RETENTION = 70% (ASTM G4355)

SEDIMENT IMPOUNDMENTS, BARRIERS, & FILTERS:

- 36. HAY BALE BARRIER: ONE HAY BALE BARRIER WAS DESIGNED INTO THE EROSION AND SEDIMENT CONTROL PLAN ON THE SOUTHWESTERN SIDE OF THE NORTHEAST AREA. INSPECT THE HAY BALE BARRIER IN ACCORDANCE WITH THE REQUIREMENTS IN THE APPROVED SWPCP. REMOVE SEDIMENT DEPOSITS OR INSTALL A SECONDARY BARRIER UPSLOPE FROM THE EXISTING BARRIER WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. REPLACE OR REPAIR THE BARRIER WITHIN 24-HOURS OF OBSERVED FAILURE. FAILURE OF THE BARRIER HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BY THE BARRIER DUE TO:
36.1. OVERTOPPING, UNDERCUTTING, BYPASS
36.2. MOVED OUT OF POSITION
36.3. DETERIORATION OR DAMAGE TO THE HAY BALES
37. TEMPORARY SEDIMENT TRAPS WERE SIZED BASED ON THE REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE). SEDIMENT TRAPS WERE TYPICALLY PLACED DOWN SLOPE OF GRADED OR OTHERWISE HIGHLY DISTURBED AREAS. SEDIMENT TRAPS SHALL BE INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE APPROVED SWPCP. SEDIMENT TRAPS SHOULD BE CLEANED WHEN SEDIMENT ACCUMULATION EXCEEDS ONE HALF THE WET STORAGE CAPACITY OF THE TRAP.
38. TEMPORARY SEDIMENT BASINS WERE SIZED BASED ON THE REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE). SEDIMENT BASINS WERE TYPICALLY PLACED DOWN SLOPE OF GRADED OR OTHERWISE HIGHLY DISTURBED AREAS. SEDIMENT BASINS SHALL BE INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS IN SECTION 6. SEDIMENT BASINS SHOULD BE CLEANED WHEN SEDIMENT ACCUMULATION EXCEEDS ONE HALF THE WET STORAGE CAPACITY OF THE BASIN OR WHEN THE DEPTH OF AVAILABLE POOL IS REDUCED TO 18-INCHES, WHICHEVER IS ACHIEVED FIRST.

EROSION CONTROL:

- 39. SLOPE MATTING SHALL BE PLACED AND SECURED ON GRADED SLOPES IMMEDIATELY FOLLOWING FINAL GRADE, SEE SHEET ESC-308.
40. IF SLOPE MATTING DOES NOT ADEQUATELY CONTROL EROSION, A HAY BALE BARRIER SHALL BE PLACED AT THE TOP OF THE SLOPE WITH TEMPORARY PIPE SLOE DRAINS AND STABILIZED OUTFALLS TO CONVEY RUNOFF TO THE BOTTOM OF THE SLOPE.

TOPSOIL:

- 41. IN GRADING AREAS, TOPSOIL SHALL BE STOCKPILED NEAR THE GRADING. FOLLOWING FINAL GRADE, TOPSOIL SHALL BE SPREAD EVENLY ONVER GRADED AREA AND IMMEDIATELY SEEDED WITH A TEMPORARY SEED MIX.
42. IN AREAS THAT ARE TO REMAIN IMPERVIOUS POST-CONSTRUCTION (ROADS, EQUIPMENT PADS) TOPSOIL FROM EXCAVATIONS SHALL BE SPREAD EVENLY THROUGHOUT ARRAY AREA.

SEED MIX (PERMANENT):

- 43. SEEDING WILL BE DONE POST CONSTRUCTION AND ENCOMPASS ALL DISTURBED AREAS (SWALES, RETENTION/DETENTION STRUCTURES, GRADING AREAS), WITH THE EXCEPTION OF ROADS AND/EQUIPMENT PADS.
44. PERMANENT SEED MIX SHALL INCORPORATE POLLINATOR FRIENDLY PLANTS THAT DO NOT EXCEED 12" IN HEIGHT AT FULL GROWTH.
45. SEEDING AREA MIX WILL BE ACCORDANCE WITH THE FOLLOWING TABLE:

Figure PS-2 Selecting Seed Mix to Match Need. Table with columns: Area To Be Seeded, Mixture Number (Mowing Desired, Mowing Not Required). Rows include Borrow Areas, Drainage Ditch, Diversions, Effluent Disposal, Gullied Areas, Minespoil, Shorelines, Ski Slopes, Sod Waterways, Sunny Recreation Areas, Camping, Sand Dunes, Woodland Access, Lawns, etc.

Figure PS-3 Seed Mixtures for Permanent Seeding (con't). Table with columns: No., Seed Mixture (Variety), Lbs/Acre, No. Sq. Ft. Rows include Switchgrass, Perennial Ryegrass, Crown Vetch, etc.

Figure PS-3 Seed Mixtures for Permanent Seeding. Table with columns: No., Seed Mixture (Variety), Lbs/Acre, Lbs/1,000 Sq. Ft. Rows include Kentucky Bluegrass, Creeping Red Fescue, Perennial Ryegrass, etc.

Figure PS-3 Seed Mixtures for Permanent Seeding (con't). Table with columns: No., Seed Mixture (Variety), Lbs/Acre, Lbs/1,000 Sq. Ft. Rows include American Beachgrass, Switchgrass, Flatpea, Orchardgrass, Turf Type Tall Fescue, etc.



Table with columns: REV, DESCRIPTION, DATE. Rows include 0 60% FOR CLIENT REVIEW 05/08/2020, 1 60% FOR CLIENT REVIEW 06/11/2020, 2 90% ISSUED FOR CLIENT REVIEW 06/30/2020, 3 IFC (DRAFT FOR REVIEW) 07/02/2020, 4 SITING COUNCIL INTERROGATORIES 1 07/22/2020.

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PROJECT NAME: STONINGTON SOLAR PROJECT

PROJECT ADDRESS: ELLA WHEELER RD. NORTH STONINGTON, CT 06359 41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal] DATE: 22-JUL-20 PROJECT #: 20200309_CT DRAWN BY: MMM CHECKED BY: DRG

TITLE: EROSION & SEDIMENT CONTROL NOTES

SHEET: ESC-100



SEED MIX (TEMPORARY):

1. TEMPORARY SEEDING WILL BE DONE POST GRADING AND ENCOMPASS ALL DISTURBED AREAS (SWALES, RETENTION/DETENTION STRUCTURES, GRADING AREAS), WITH THE EXCEPTION OF ROADS AND EQUIPMENT PADS.
2. TEMPORARY SEEDING AREA MIX AND APPLICATION SHALL BE ACCORDANCE WITH 3-VEGETATIVE SOIL COVER/TEMPORARY SEEDING (TS) BMP INCLUDED ON THIS SHEET.

MULCH:

3. IF TEMPORARY SEEDING DATES CANNOT BE MET, A HAY OR STRAW MULCH SHALL BE APPLIED IN ACCORDANCE WITH 4-SHORT TERM NON-LIVING SOIL PROTECTION/TEMPORARY SOIL PROTECTION (TSP) BMP INCLUDED ON THIS SHEET.
4. HAY OR STRAW MULCH SHALL BE APPLIED TO PROVIDE 100% SOIL COVERAGE AND DISC ANCHORED.

4-Short Term Non-living Soil Protection

Temporary Soil Protection (TSP)

Definition
Application of a degradable material that will protect the soil surface on a temporary basis without the intention of promoting plant growth.

Purpose
To prevent erosion by dissipating the erosive energy of raindrops and encouraging sheet flow over the soil surface.

Applicability

- When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, stabilize the site within 7 days of the suspension of grading through the use of mulch or other materials appropriate for use as a temporary soil protector.
- For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use **Temporary Seeding, Mulch for Seed** or when slopes are less than 3:1, wood chips, bark chips or shredded bark.
- For surfaces that are to be reworked after 1 year, use **Permanent Seeding and Mulch for Seed**.

Planning Considerations

See Mulching Selection Chart found in the Group Planning Considerations.

Specifications

Materials
Temporary soil protection materials include but are not limited to mulches, tackifiers, and nettings and shall be:

- biodegradable or photo-degradable within 2 years but without substantial degradation for 5 months;
- free of contaminants that pollute the air or waters of the State when properly applied;
- free of foreign material, coarse stems and any substance toxic to plant growth or which interferes with seed germination; and
- capable of being applied evenly such that it provides 100% initial soil coverage and still adheres to the soil surface, does not slip on slopes when it rains or is watered, does not blow off site, and dissipates rain-drop splash.

Mulches within this specification include, but are not limited to:

Hay: The dried stems and leafy parts of plants cut and harvested, such as alfalfa, clovers, other forage legumes and the finer stemmed, leafy grasses. The average stem length should not be less than 4 inches. Hay that can be windblown should be anchored to hold it in place.

Straw: Cut and dried stems of herbaceous plants, such as wheat, barley, cereal rye, or broom. The average stem length should not be less than 4 inches. Straw that can be windblown should be anchored to hold it in place.

Wood Chips: Chipped wood material from logs, stumps, brush or trimmings including bark, stems and leaves having a general maximum size of 0.5 inch by 2 inches and free of excessively fine or long stringy particles as well as stones, soil and other debris. No anchoring is required. If seeding is performed where wood chips have been previously applied, prior to the seeding the wood chips should be removed or tilled into the ground and additional nitrogen applied. Nitrogen application rate is determined by soil test at time of seeding (anticipate 12 lbs. nitrogen per ton of wood chips).

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Errata Corrections 1/08 5-4-3

Bark Chips, Shredded Barks Tree bark shredded as a by product of timber processing having a general maximum size of 4 inches and free of excessively fine or long stringy particles as well as stone and other debris. Material use is the same as wood chips.

May also include corn stalks, leaves and other similar materials provided they meet the requirements of the materials section within this specification.

Note: Wood and bark by-products may generate contaminated runoff if improperly stored for extended periods. These materials should only be stored on free draining, gently sloping soils, and only for short periods of time.

If subsequent seeding is performed where cellulose dense mulches (e.g. leaves, excelsior, woodchips, barkchips) have been applied, then prior to seeding either remove the mulch or till it into the ground with the application of nitrogen.

Cellulose fiber is not recommended for use, except as a tackifier for other mulch materials.

Tackifiers within this specification include, but are not limited to:

Water soluble materials that cause mulch particles to adhere to one another, generally consisting of either a natural vegetable gum blended with gelling and hardening agents or a blend of hydrophilic polymers, resins, viscosifiers, sticking aids and gums. **Emulsified asphalt is specifically prohibited for use as tackifiers due to their potential for causing water pollution following its application.**

Nettings within this specification include but are not limited to:

Prefabricated openwork fabrics made of cellulose cords, ropes, threads, or biodegradable synthetic material that is woven, knotted or molded in such a manner that it holds mulch in place until temporary soil protection is no longer needed. Examples of netting are tobacco netting (used where flows are not concentrated) and jute netting (typically used in drainageways).

Substitute Measures
Where tackifiers or nettings are needed to anchor mulch, a **Temporary Erosion Control Blanket or Stone Slope Protection** may be substituted, providing 100% of the disturbed soil is covered.

Site Preparation
Prior to mulching, complete the required grading and install and/or repair other sediment control measures needed to control water movement within the area to be mulched.

5-4-4 Errata Corrections 1/08

Application
Spreading: Spread mulch material uniformly by hand or machine resulting in 100% coverage of the disturbed soil.

When spreading hay mulch by hand, divide the area to be mulched into approximately 1,000 square feet and place 2 to 3 bales of hay in each section to facilitate uniform distribution.

When spreading woodchips on slopes, it is particularly important not to spread the chips too thick. Excessive applications tend to slip or slump when saturated.

See **Figure TSP-1** for suggested application rates of specific mulches when used as temporary soil protection.

| Mulch | Rate |
|------------------------------|-------------------------|
| Hay/Straw | 2 - 3 Tons/acre |
| Wood Chips/ Shredded Bark | 6 cu. yds./1000 sq. ft. |

Anchoring: Apply tackifiers and/or netting either with the mulch or immediately following mulch application. Expect the need for tackifiers or netting along the shoulders of actively traveled roads, hill tops and long open slopes not protected by wind breaks.

When using netting the most critical aspect is to ensure that the netting maintains substantial contact with the mulch and the mulch, in turn, maintains continuous contact with the soil surface. Without such contact, the material is useless and erosion can be expected to occur. Install in accordance with manufacturer's recommendations.

Maintenance
Inspect temporary soil protection area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for mulch movement and rill erosion.

Where soil protection falls below 100%, reapply soil protection within 48 hours. Determine the cause of the failure. If mulch failure was the result of wind, consider applying a tackifier or netting. If mulch failure was caused by concentrated water, install additional measures to control water and sediment movement, repair erosion damage, re-apply mulch with anchoring or use Temporary Erosion Control Blankets.

Inspections should take place until work resumes.

2002 Connecticut Guidelines for Soil Erosion and Sediment Control



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
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| - | - | - |
| - | - | - |
| - | - | - |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
**ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

SEAL: DATE: **22-JUL-20**
PROJECT #: **20200309_CT**
DRAWN BY: **MMM**
CHECKED BY: **DRG**

TITLE: **EROSION & SEDIMENT CONTROL NOTES**

SHEET: **ESC-101**

3-Vegetative Soil Cover

Temporary Seeding (TS)

Definition
Establishment of temporary stand of grass and/or legumes by seeding and mulching soils that will be exposed for a period greater than 1 month but less than 12 months.

Purpose
To temporarily stabilize the soil and reduce damage from wind and/or water erosion and sedimentation until permanent stabilization is accomplished.

Applicability

- Within the first 7 days of suspending work on a grading operation that exposes erodible soils where such suspension is expected to last for 1 to 12 months. Such areas include soil stockpiles, borrow pits, road banks and other disturbed or unstable areas.
- Not for use on areas that are to be left dormant for more than 1 year. Use permanent vegetative measures in those situations.

Specifications

Seed Selection
Select grass species appropriate for the season and site conditions from **Figure TS-2**.

Timing Considerations
Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year. Seeding outside the optimum seeding dates given in **Figure TS-2** may result in either inadequate germination or low plant survival rates, reducing erosion control effectiveness.

Site Preparation
Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways in accordance with the approved plan.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with the **Land Grading** measure.

Seedbed Preparation
Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth

over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water (see **Surface Roughening** measure). Apply ground limestone and fertilizer according to soil test recommendations (such as those offered by the University of Connecticut Soil Testing Laboratory or other reliable source). Soil sample mailers are available from the local Cooperative Extension System office. Appendix E contains a listing of the Cooperative Extension System offices.

If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in **Figure TS-1**.

| Soil Texture | Tons / Acre of Lime | Lbs / 1000 ft ² of Lime |
|---------------------------------------|---------------------|------------------------------------|
| Clay, clay loam and high organic soil | 3 | 135 |
| Sandy loam, loam, silt loam | 2 | 90 |
| Loamy sand, sand | 1 | 45 |

Seeding
Apply seed uniformly by hand, cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate of the selected seed identified in **Figure TS-2**. Increase

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Figure TS-2 Temporary Seeding Rates and Dates

| Species* | Seeding Rates (pounds/1000 sq. ft.) | Optimum Seed Depth ² (inches) | Optimum Seeding Dates ¹ | | | | | | | | | | | | Plant Characteristics | | |
|---|-------------------------------------|--|------------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----------------------|--|--|
| | | | 3/1 | 4/1 | 5/1 | 6/1 | 7/1 | 8/1 | 9/1 | 10/1 | 11/1 | 12/1 | 1/1 | 2/1 | | | |
| Annual ryegrass Lolium multiflorum | 40 | 1.0 | 0.5 | | | | | | | | | | | | | | May be added in mixes. Will mow out of most stands. |
| Perennial ryegrass Lolium perenne | 40 | 1.0 | 0.5 | | | | | | | | | | | | | | Use for winter cover. Tolerates cold and low moisture. |
| Winter Rye Secale cereale | 120 | 3.0 | 1.0 | | | | | | | | | | | | | | Quick germination and heavy spring growth. Dies back in June with late regrowth. |
| Oats Avena sativa | 86 | 2.0 | 1.0 | | | | | | | | | | | | | | In northern CT, will winter kill with the first killing frost and may throughout the state in severe winters. |
| Winter Wheat Triticum aestivum | 120 | 3.0 | 1.0 | | | | | | | | | | | | | | Quick germination with moderate growth. Dies back in June with no regrowth. |
| Millet Echinochloa crusgalli | 20 | 0.5 | 1.0 | | | | | | | | | | | | | | Warm season small grain. Dies with frost in September. |
| Sudangrass Sorghum sudanense | 30 | 0.7 | 1.0 | | | | | | | | | | | | | | Tolerates warm temperatures and droughty conditions. |
| Blackwheat Eragrostis caudata | 15 | 0.4 | 1.0 | | | | | | | | | | | | | | Hardy plant that will reseed itself and is good as a green manure crop. |
| Weeping lovegrass Eragrostis curvula | 5 | 0.2 | 0.25 | | | | | | | | | | | | | | Warm-season perennial. May bunch. Tolerates hot, dry slopes, acid infertile soils. Excellent nurse crop. Usually winter kills. |
| DOT All Purpose Mix ³ | 150 | 3.4 | 0.5 | | | | | | | | | | | | | | Suitable for all conditions. |

¹ May be planted throughout summer if soil moisture is adequate or can be irrigated. Fall seeding may be extended 15 days in the coastal towns.
² Seed at twice the indicated depth for sandy soils.
³ See Permanent Seeding **Figure PS-3** for seeding mixture requirements.
⁴ Listed species may be used in combinations to obtain a broader time spectrum. If used in combinations, reduce each species planting rate by 20% of that listed.

Source: USDA-NRCS

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5-3-4

seeding rates by 10% when hydroseeding.

Mulching
Temporary seedings made during optimum seeding dates shall be mulched according to the **Mulch for Seed** measure. Note when seeding outside of the optimum seeding dates, increase the application of mulch to provide 95%-100% coverage.

Maintenance
Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Bird feeding may be a problem if mulch was applied too thinly to protect seed. Re-seed and re-mulch. If movement was the result of wind, then repair erosion damage (if any), reapply seed and mulch and apply mulch anchoring. If failure was caused by concentrated runoff, install additional measures to control water and sediment movement, repair erosion damage, re-seed and re-apply mulch with anchoring or use **Temporary Erosion Control Blanket** measure.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative surface cover).

5-3-3

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

5-3-3



WETLAND AND VERNAL POOL PROTECTION PLAN

As a result of the proposed development's location in the vicinity of wetlands and vernal pool habitat, the following Best Management Practices ("BMPs") are recommended to avoid unintentional impact to wetland habitats or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. This plan includes elements that will protect herpetofauna should construction activities occur during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) as well as wetlands regardless of the time of year. Complete details of the recommended BMPs are provided below, which will be incorporated into the construction drawings to ensure the Contractor is fully aware of the project's environmentally sensitive setting.

A wetland scientist from All Points Technology Corp. ("APT") experienced in compliance monitoring of construction activities will serve as the Environmental Monitor for this project to ensure that the following BMPs are implemented properly. The proposed wetland and vernal pool protection program consists of several components including: isolation of the development perimeter; periodic inspection and maintenance of erosion controls and isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. Erosion and Sedimentation Controls

- a. Plastic netting with large mesh openings (> 1/4") used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting with a mesh size <1/4" such as that typically used in compost filter socks to avoid/minimize wildlife entanglement.
- b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna.
- c. If a staging area for equipment, vehicles or construction materials is required for this project, such area(s) shall be located outside of any wetland resource upland review area and surrounded by silt fence to isolate the area from possible migrating herpetofauna.
- d. All erosion control measures shall be removed within 30 days of completion of work and permanent stabilization of site soils so that herpetofauna movements between uplands and wetlands are not restricted.

2. Contractor Education:

- a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with the Environmental Monitor. This orientation and educational session will consist of information such as, but not limited to: representative photographs of typical herpetofauna that may be encountered, rare that could be encountered (if possible), typical species behavior, and proper procedures to protect such species if they are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and proper handling of herpetofauna.
- b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the daily "sweeps" for herpetofauna within the work zone each morning, during any and all transportation of vehicles along the access drive, and for any ground disturbance work. This individual will receive more intense training from the Environmental Monitor on the identification and protection of herpetofauna in order to perform sweeps. Any herpetofauna discovered will be reported to the Environmental Monitor, photographed if possible, and relocated outside the work zone in the general direction the animal was oriented.
- c. The Environmental Monitor will also post caution signs throughout the project site and maintain them for the duration of construction to provide notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.
- d. The Contractor will be provided with the Environmental Monitor's cell phone and email contact information to immediately report any encounters with herpetofauna.

3. Petroleum Materials Storage and Spill Prevention

- a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetland resources.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.
 - i. Petroleum and Hazardous Materials Storage and Refueling
 - 1. Refueling of vehicles or machinery shall take place on an impervious pad with secondary containment designed to contain fuels.
 - 2. Any refueling drums/tanks or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.
 - ii. Initial Spill Response Procedures
 - 1. Stop operations and shut off equipment.
 - 2. Remove any sources of spark or flame.
 - 3. Contain the source of the spill.

- 4. Determine the approximate volume of the spill.
 - 5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
 - 6. Ensure that fellow workers are notified of the spill.
- iii. Spill Clean Up & Containment
- 1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
 - 2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
 - 3. Isolate and eliminate the spill source.
 - 4. Contact the appropriate local, state and/or federal agencies, as necessary.
 - 5. Contact a disposal company to properly dispose of contaminated materials.
- iv. Reporting
- 1. Complete an incident report.
 - 2. Submit a completed incident report to the Connecticut Siting Council.

4. Protective Measures

- a. A thorough cover search of the construction area will be performed by the Environmental Monitor for herpetofauna prior to and following installation of erosion control measures/silt fencing barriers to remove any species from the work zone prior to the initiation of construction activities. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by the Environmental Monitor throughout the duration of construction.
- b. The Contractor's Project Monitor will inspect the work area each morning and escort initial vehicle access into the site each morning along the access drive to visually inspect for any herpetofauna. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented.
- c. Any herpetofauna requiring relocation out of the work zone will be captured with the use of a net or clean plastic bag that has been moistened with clean water for careful handling and placement out of the work zone in the general direction it was observed heading.
- d. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24 hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

5. Herbicide and Pesticide Restrictions

- a. The use of herbicides and pesticides at the proposed solar facility shall be avoided when possible. In the event herbicides and/or pesticides are required at the proposed facility, their use will be used in accordance with Integrated Pest Management ("IPM") principles with particular attention to minimize applications within 100 feet of wetland or watercourse resources. No applications of herbicides or pesticides are allowed within actual wetland or watercourse resources.

6. Reporting

- a. Daily inspection reports (brief narrative and applicable photos) will be prepared by the Environmental Monitor documenting each inspection and submitted to Pawcatuck Solar Center for compliance verification. Any non-compliance observations of erosion control measures or evidence of erosion or sediment release will be immediately reported to the Contractor and Pawcatuck Solar Center's Construction Manager and included in the reports.
- b. Any incidents of sediment release into the wetland resource areas shall will be reported within 24 hours to the Town of Branford Inland Wetlands Director.
- c. Any observations of rare species will be reported to the Connecticut Department of Energy & Environmental Protection Natural Diversity Data Base.
- d. Following completion of the project, a summary report will be prepared by the Environmental Monitor documenting compliance with the Wetland and Vernal Pool Protection Plan and submitted to Pawcatuck Solar Center.



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
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| 3 | IFC (DRAFT FOR REVIEW) | 07/02/2020 |
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STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: **EROSION & SEDIMENT CONTROL NOTES**

SHEET: **ESC-102**



LEGEND

| | |
|----|--|
| 6 | PROPOSED SITE ACCESS ROAD |
| 7 | WETLAND W/BUFFER |
| 8 | SITE FENCE LINE |
| 9 | SITE LIMIT OF DISTURBANCE |
| 10 | SITE BOUNDARY |
| 11 | RIVER OR CREEK |
| 12 | 100 YEAR FLOOD ZONE |
| 13 | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| 14 | TREE CLEARING (GRUBBING) |
| 15 | TREE CLEARING (NO GRUBBING) |
| 16 | TREE CLEARING (SELECTIVE) |
| 17 | SILT FENCE |
| 18 | CONSTRUCTION ENTRANCE/EXIT |
| 19 | SLOPE MATTING |
| 20 | CONCRETE WASHOUT |
| 21 | SEDIMENT BARRIER (HAY BALE) |
| 22 | TEMPORARY SEDIMENT TRAP |
| 23 | TEMPORARY SEDIMENT BASIN |
| 24 | TEMPORARY LAYDOWN YARD |
| 75 | (E) MAJOR CONTOUR |
| 76 | (E) MINOR CONTOUR |
| 75 | (N) MAJOR CONTOUR |
| 76 | (N) MINOR CONTOUR |

EROSION AND SEDIMENT CONTROL GENERAL NOTES

- ARRAY NOT SHOWN FOR CLARITY.
- IN INSTANCES OF DISCREPANCY BETWEEN THE ESC DRAWINGS, SWPCP, AND CONSTRUCTION GENERAL PERMIT (CGP), THE CGP SHALL TAKE PRECEDENCE.
- BMPs DEPICTED ON THESE DRAWINGS REPRESENT THE MINIMUM REQUIRED. IF BMPs ARE INEFFECTIVE AT CONTROLLING SEDIMENT FLOW OFFSITE, ADDITIONAL BMPs SHALL BE IMPLEMENTED TO STAY IN COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT.
- IF ADDITIONAL CONTROLS ARE NEEDED, A PERMIT VIOLATION OCCURS, AND/OR THE SWPCP AND ESC DRAWINGS NEED TO BE UPDATED, CT DEEP AND THE CIVIL ENGINEER OF RECORD SHALL BE NOTIFIED.
- FLAG THE LIMITS OF CONSTRUCTION, ROADWAY BASE-LINE, RIGHT-OF-WAY AND TREE PROTECTION ZONES.
- HOLD PRE-CONSTRUCTION MEETING.
- CALL 1-800-922-4455 BEFORE YOU DIG.
- HOLD TREE CUTTING MEETING.
- INSTALL THE CONSTRUCTION ENTRANCE.
- INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS AND TREE PROTECTION DEVICES IN ACCORDANCE WITH THE ESC PLAN.
- CUT TREES WITHIN THE DEFINED CLEARING LIMITS AND REMOVE CUT WOOD, CHIP BRUSH AND SLASH, STOCKPILE CHIPS FOR FUTURE USE OR REMOVE OFF SITE.
- GRADING AREAS SHALL BE SEEDED WITH A TEMPORARY SEEDING MIX IMMEDIATELY FOLLOWING GRADING AND REPLACEMENT OF TOPSOIL. TEMPORARY SEEDING MAY BE PERFORMED VIA NO-TILL DRILL, HYDROSEEDING, OR HAND SPREADING, SEE SHEET ESC-101.
- IF TEMPORARY SEEDING CANNOT BE PERFORMED WITHIN THE REQUIRED SEEDING DATES, HAY OR STRAW MULCH SHALL BE PLACED OVER ALL DISTURBED AREAS AND DISC ANCHORED, SEE SHEET ESC-308.
- ALL DISTURBED AREAS, EXCEPT ROADS AND EQUIPMENT PADS, SHALL BE SEEDED WITH A PERMANENT SEED MIX. PERMANENT SEEDING SHALL BE PERFORMED VIA NO-TILL DRILL. IN AREAS WHERE A NO-TILL DRILL CANNOT BE USED, HYDROSEEDING OR HAND SPREADING MAY BE USED.
- IF PONDING OCCURS BEHIND SILT FENCE, HAY BALE BARRIERS OR SEDIMENT TRAPS MAY BE SUBSTITUTED.
- IF HAY BALE BARRIERS OR SEDIMENT TRAPS ARE INEFFECTIVE AT CONTROLLING SEDIMENT FLOW OFFSITE, A TEMPORARY SEDIMENT BASIN SHALL BE INSTALLED.
- IF SLOPE MATTING IS INEFFECTIVE AT CONTROLLING SLOPE EROSION, A HAY BALE BARRIER SHALL BE INSTALLED AT THE TOP OF THE SLOPE AND TEMPORARY PIPE SLOPE DRAINS WITH ARMORED OUTFALLS SHALL BE UTILIZED TO TRANSFER WATER FROM THE TOP OF THE SLOPE TO THE BOTTOM.

| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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STONINGTON SOLAR PROJECT

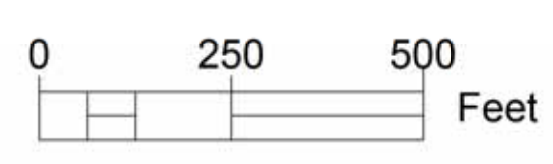
PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

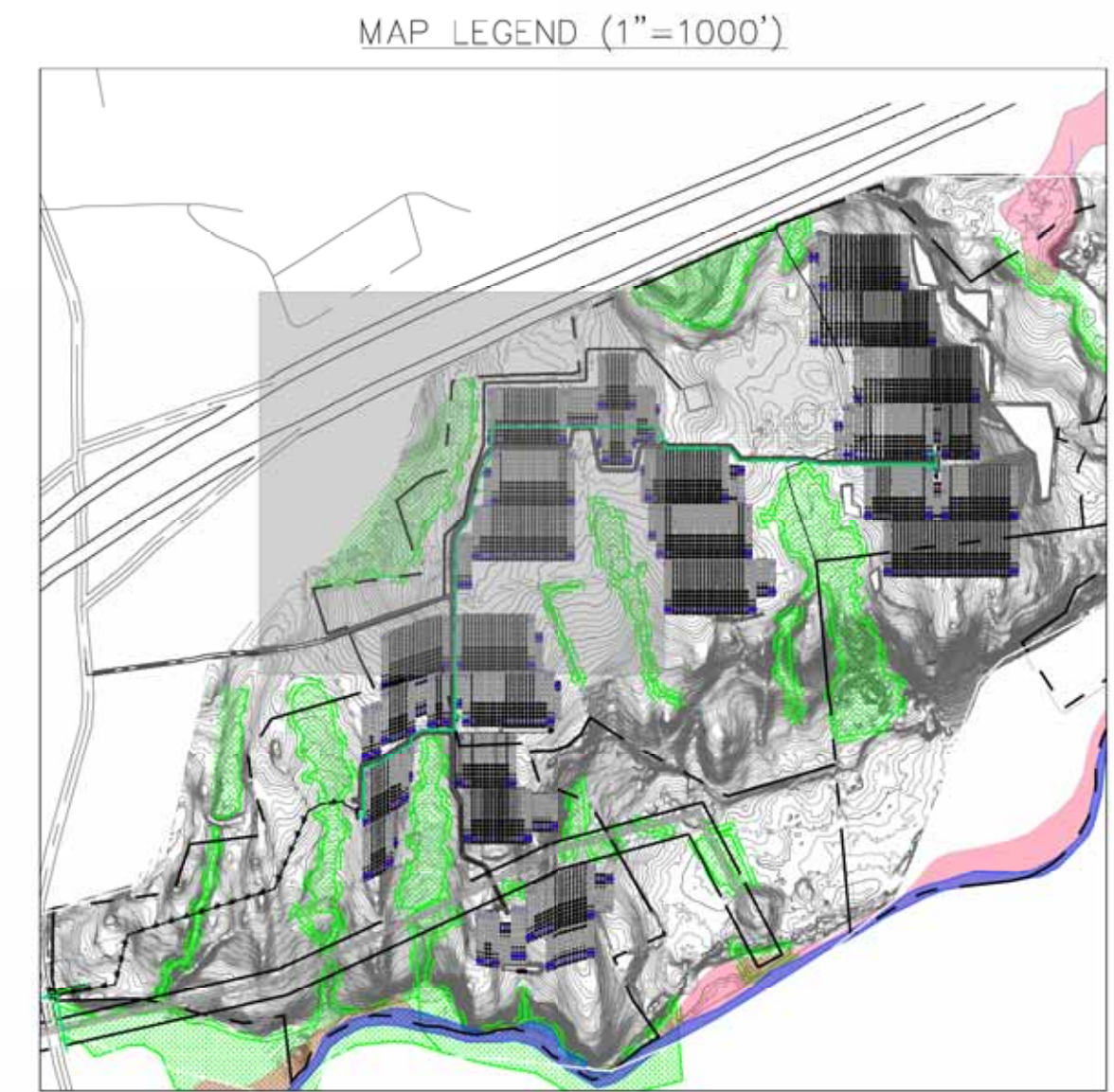
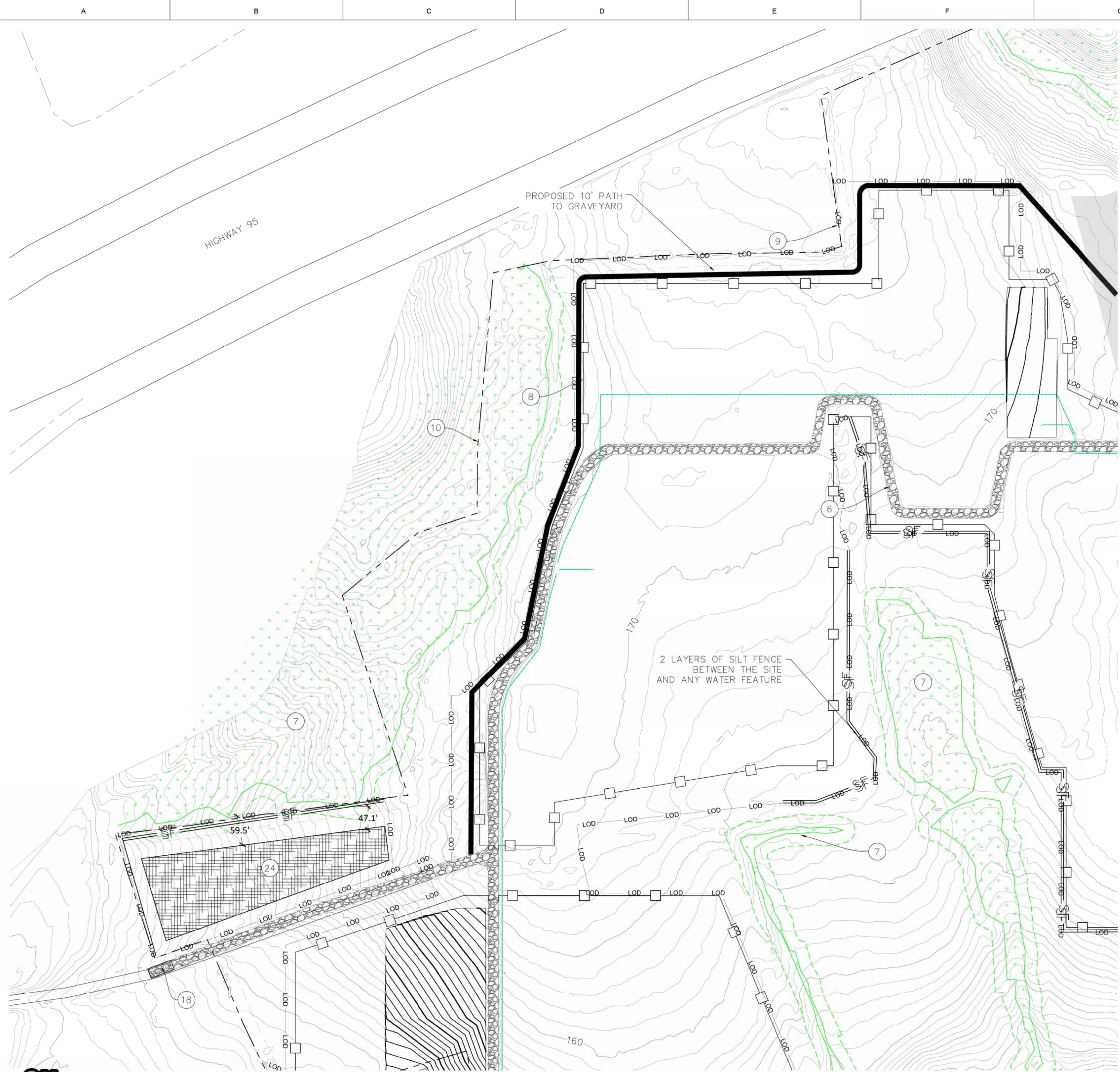
SEAL: DATE: 22-JUL-20
 PROJECT #: 20200309_CT
 DRAWN BY: MMM
 CHECKED BY: DRG

TITLE: EROSION & SEDIMENT CONTROL SITE OVERVIEW
 SHEET: ESC-200



1 EROSION & SEDIMENT CONTROL SITE PLAN
 ESC-200 Scale: 1" = 250'





LEGEND

| | |
|--------|---|
| 6 | PROPOSED SITE ACCESS ROAD |
| 7 | WETLAND W/BUFFER |
| 8 | SITE FENCE LINE |
| 9 | SITE LIMIT OF DISTURBANCE |
| 10 | SITE BOUNDARY |
| 11 | RIVER OR CREEK |
| 12 | 100 YEAR FLOOD ZONE |
| 13 | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| 14 | TREE CLEARING (GRUBBING) |
| 15 | TREE CLEARING (NO GRUBBING) |
| 16 | TREE CLEARING (SELECTIVE) |
| 17 | SILT FENCE |
| 18 | CONSTRUCTION ENTRANCE/EXIT |
| 19 | SLOPE MATTING |
| 20 | CONCRETE WASH-OUT |
| 21 | SEDIMENT BARRIER (HAY BALE) |
| 22 | TEMPORARY SEDIMENT TRAP |
| 23 | TEMPORARY SEDIMENT BASIN |
| 24 | TEMPORARY LAYDOWN YARD |
| — 75 — | (E) MAJOR CONTOUR |
| — 76 — | (E) MINOR CONTOUR |
| — 75 — | (N) MAJOR CONTOUR |
| — 76 — | (N) MINOR CONTOUR |



| REV | DESCRIPTION | DATE |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

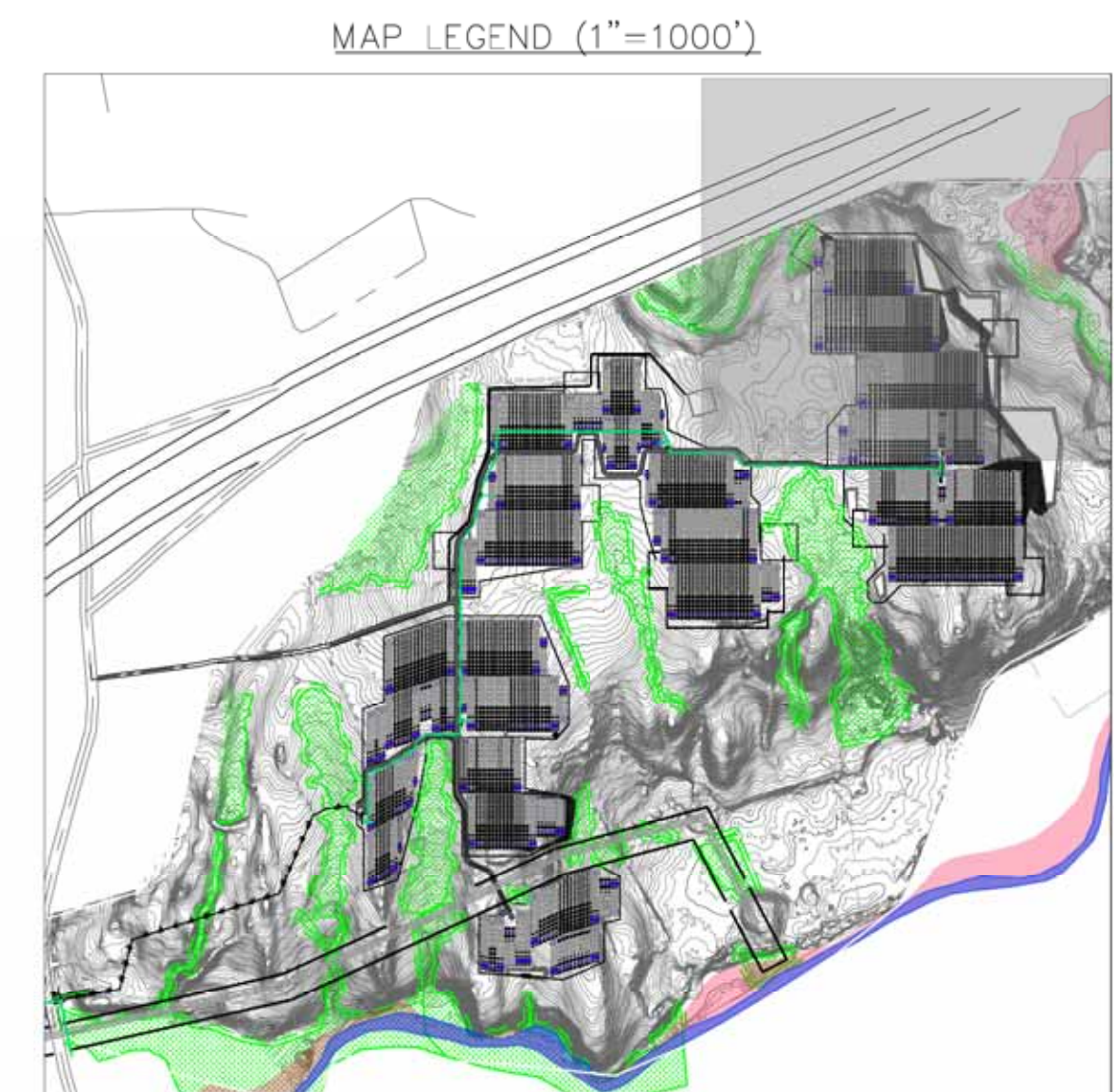
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| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: EROSION & SEDIMENT CONTROL SITE PLAN

SHEET: ESC-201

1 EROSION & SEDIMENT CONTROL SITE PLAN
 ESC-201 Scale: 1" = 100'





LEGEND

| | | |
|----|-----------|--|
| 6 | [Pattern] | PROPOSED SITE ACCESS ROAD |
| 7 | [Pattern] | WETLAND W/BUFFER |
| 8 | [Symbol] | SITE FENCE LINE |
| 9 | [Symbol] | SITE LIMIT OF DISTURBANCE |
| 10 | [Symbol] | SITE BOUNDARY |
| 11 | [Color] | RIVER OR CREEK |
| 12 | [Color] | 100 YEAR FLOOD ZONE |
| 13 | [Pattern] | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| 14 | [Pattern] | TREE CLEARING (GRUBBING) |
| 15 | [Pattern] | TREE CLEARING (NO GRUBBING) |
| 16 | [Pattern] | TREE CLEARING (SELECTIVE) |
| 17 | [Symbol] | SILT FENCE |
| 18 | [Symbol] | CONSTRUCTION ENTRANCE/EXIT |
| 19 | [Pattern] | SLOPE MATTING |
| 20 | [Pattern] | CONCRETE WASHOUT |
| 21 | [Symbol] | SEDIMENT BARRIER (HAY BALE) |
| 22 | [Symbol] | TEMPORARY SEDIMENT TRAP |
| 23 | [Symbol] | TEMPORARY SEDIMENT BASIN |
| 24 | [Symbol] | TEMPORARY LAYDOWN YARD |
| | [Line] | 75 (E) MAJOR CONTOUR |
| | [Line] | 76 (E) MINOR CONTOUR |
| | [Line] | 75 (N) MAJOR CONTOUR |
| | [Line] | 76 (N) MINOR CONTOUR |



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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal for Darin Galloway, No. 34152, State of Connecticut]

DATE: 22-JUL-20

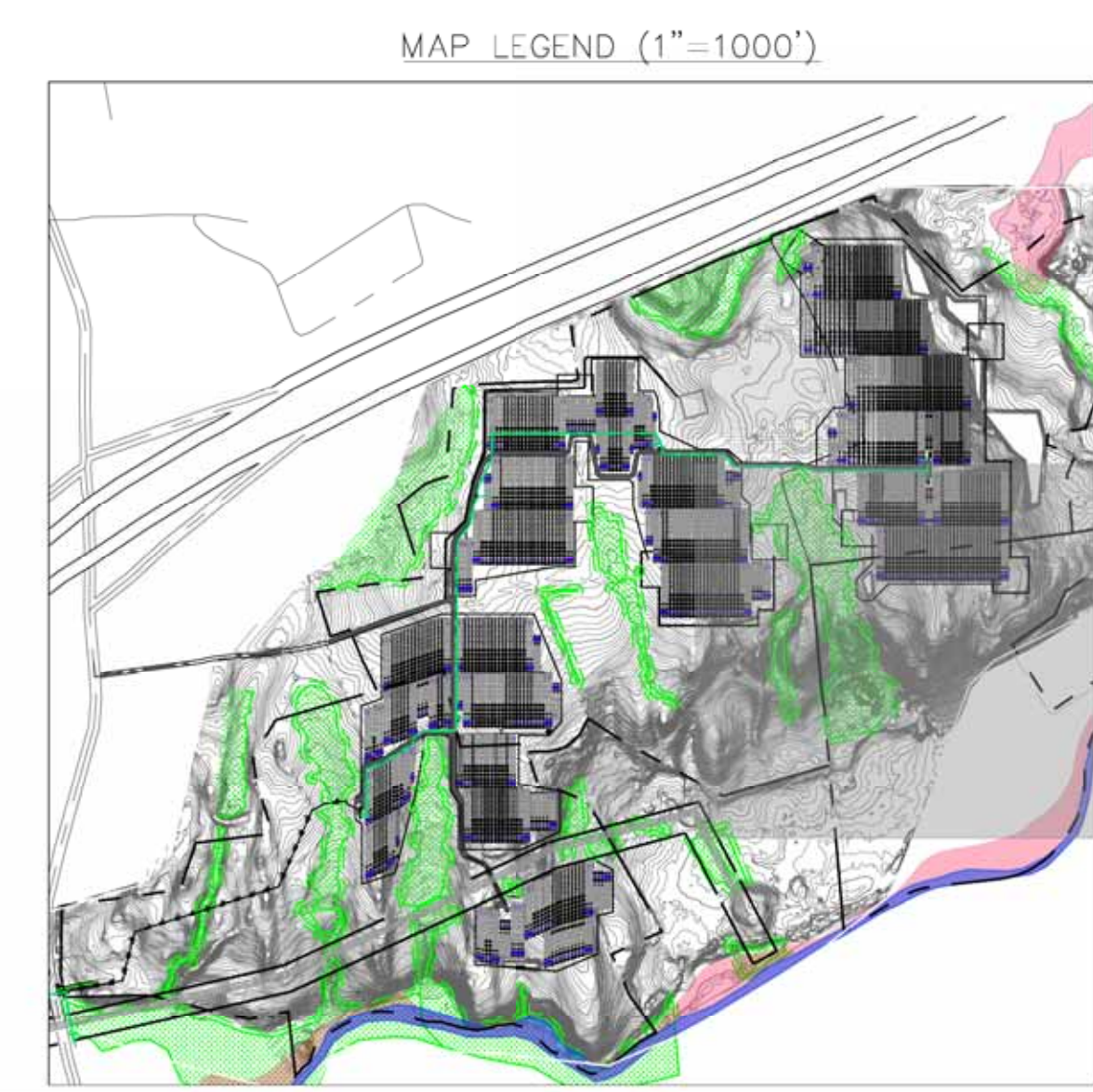
PROJECT #: 20200309_CT

DRAWN BY: MMM

CHECKED BY: DRG

TITLE: EROSION & SEDIMENT CONTROL SITE PLAN

SHEET: ESC-202



LEGEND

| | |
|------|--|
| 6 | PROPOSED SITE ACCESS ROAD |
| 7 | WETLAND W/BUFFER |
| 8 | SITE FENCE LINE |
| 9 | SITE LIMIT OF DISTURBANCE |
| 10 | SITE BOUNDARY |
| 11 | RIVER OR CREEK |
| 12 | 100 YEAR FLOOD ZONE |
| 13 | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| 14 | TREE CLEARING (GRUBBING) |
| 15 | TREE CLEARING (NO GRUBBING) |
| 16 | TREE CLEARING (SELECTIVE) |
| 17 | SILT FENCE |
| 18 | CONSTRUCTION ENTRANCE/EXIT |
| 19 | SLOPE MATTING |
| 20 | CONCRETE WASHOUT |
| 21 | SEDIMENT BARRIER (HAY BALE) |
| 22 | TEMPORARY SEDIMENT TRAP |
| 23 | TEMPORARY SEDIMENT BASIN |
| 24 | TEMPORARY LAYDOWN YARD |
| → | CHANNELED FLOW |
| —75— | (E) MAJOR CONTOUR |
| —76— | (E) MINOR CONTOUR |
| —75— | (N) MAJOR CONTOUR |
| —76— | (N) MINOR CONTOUR |



| REV | DESCRIPTION | DATE |
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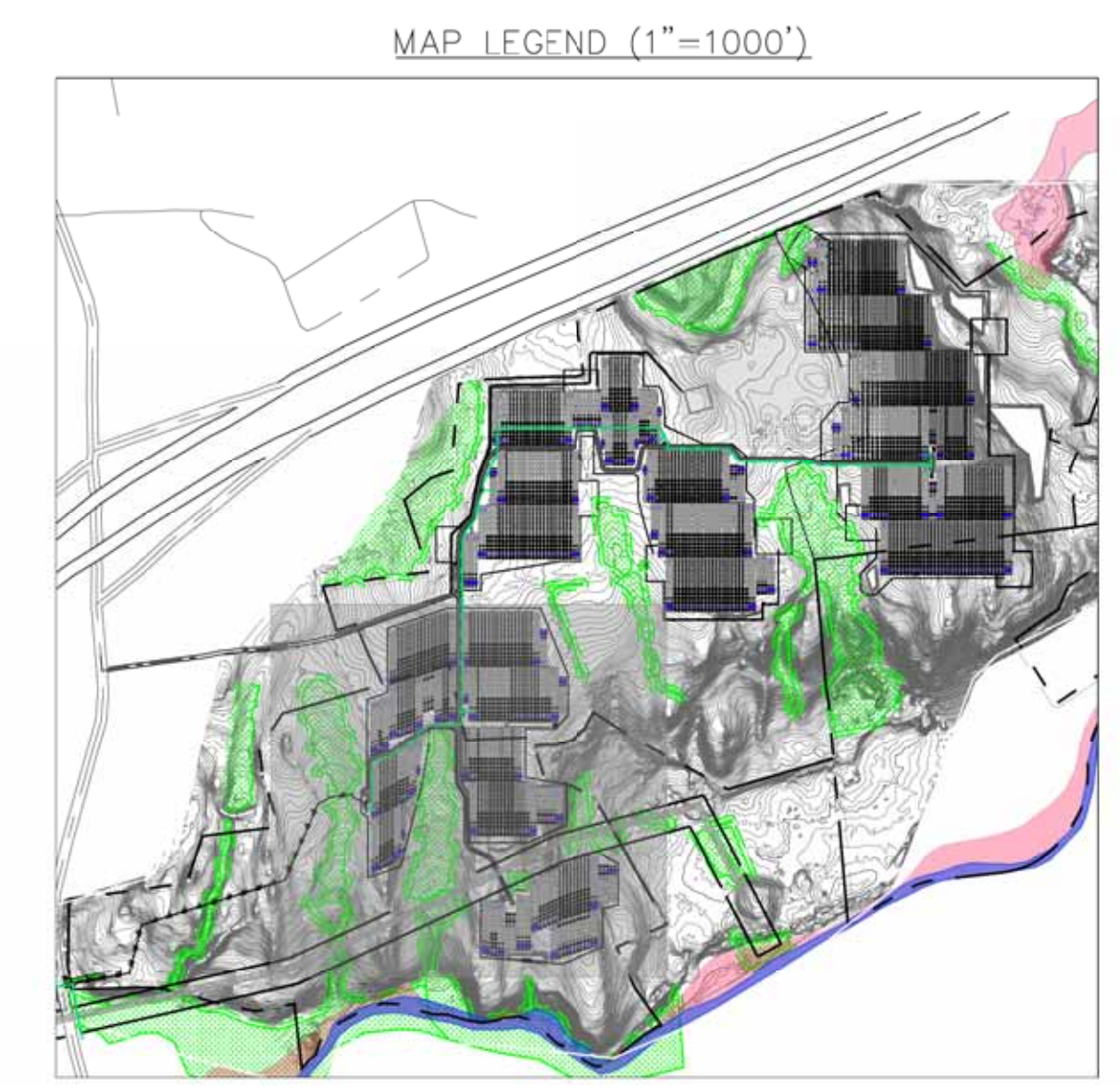
PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: **EROSION & SEDIMENT CONTROL SITE PLAN**

SHEET: **ESC-203**



LEGEND

| | |
|----|--|
| 6 | PROPOSED SITE ACCESS ROAD |
| 7 | WETLAND W/BUFFER |
| 8 | SITE FENCE LINE |
| 9 | SITE LIMIT OF DISTURBANCE |
| 10 | SITE BOUNDARY |
| 11 | RIVER OR CREEK |
| 12 | 100 YEAR FLOOD ZONE |
| 13 | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| 14 | TREE CLEARING (GRUBBING) |
| 15 | TREE CLEARING (NO GRUBBING) |
| 16 | TREE CLEARING (SELECTIVE) |
| 17 | SILT FENCE |
| 18 | CONSTRUCTION ENTRANCE/EXIT |
| 19 | SLOPE MATTING |
| 20 | CONCRETE WASHOUT |
| 21 | SEDIMENT BARRIER (HAY BALE) |
| 22 | TEMPORARY SEDIMENT TRAP |
| 23 | TEMPORARY SEDIMENT BASIN |
| 24 | TEMPORARY LAYDOWN YARD |
| 75 | (E) MAJOR CONTOUR |
| 76 | (E) MINOR CONTOUR |
| 75 | (N) MAJOR CONTOUR |
| 76 | (N) MINOR CONTOUR |



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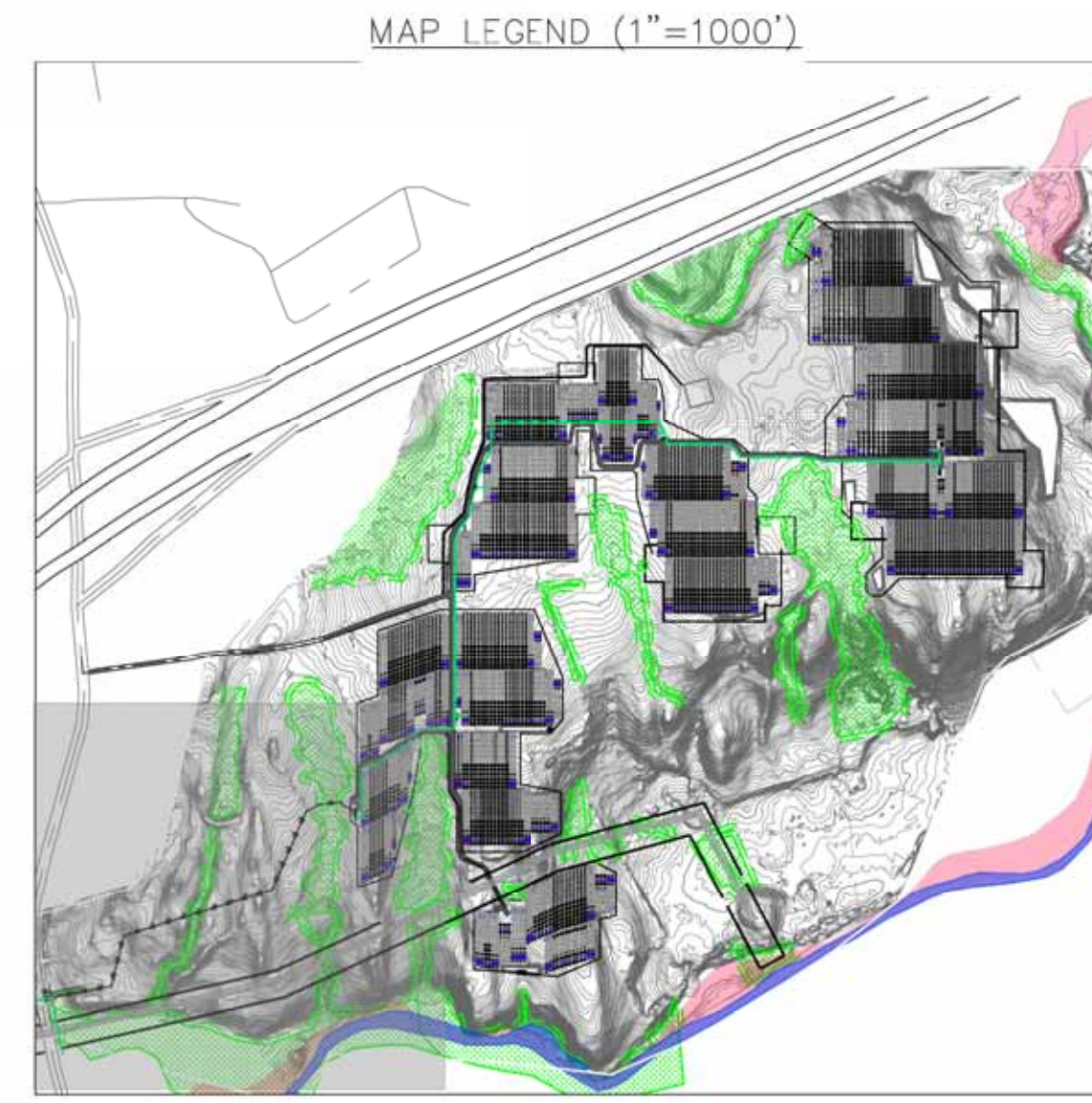
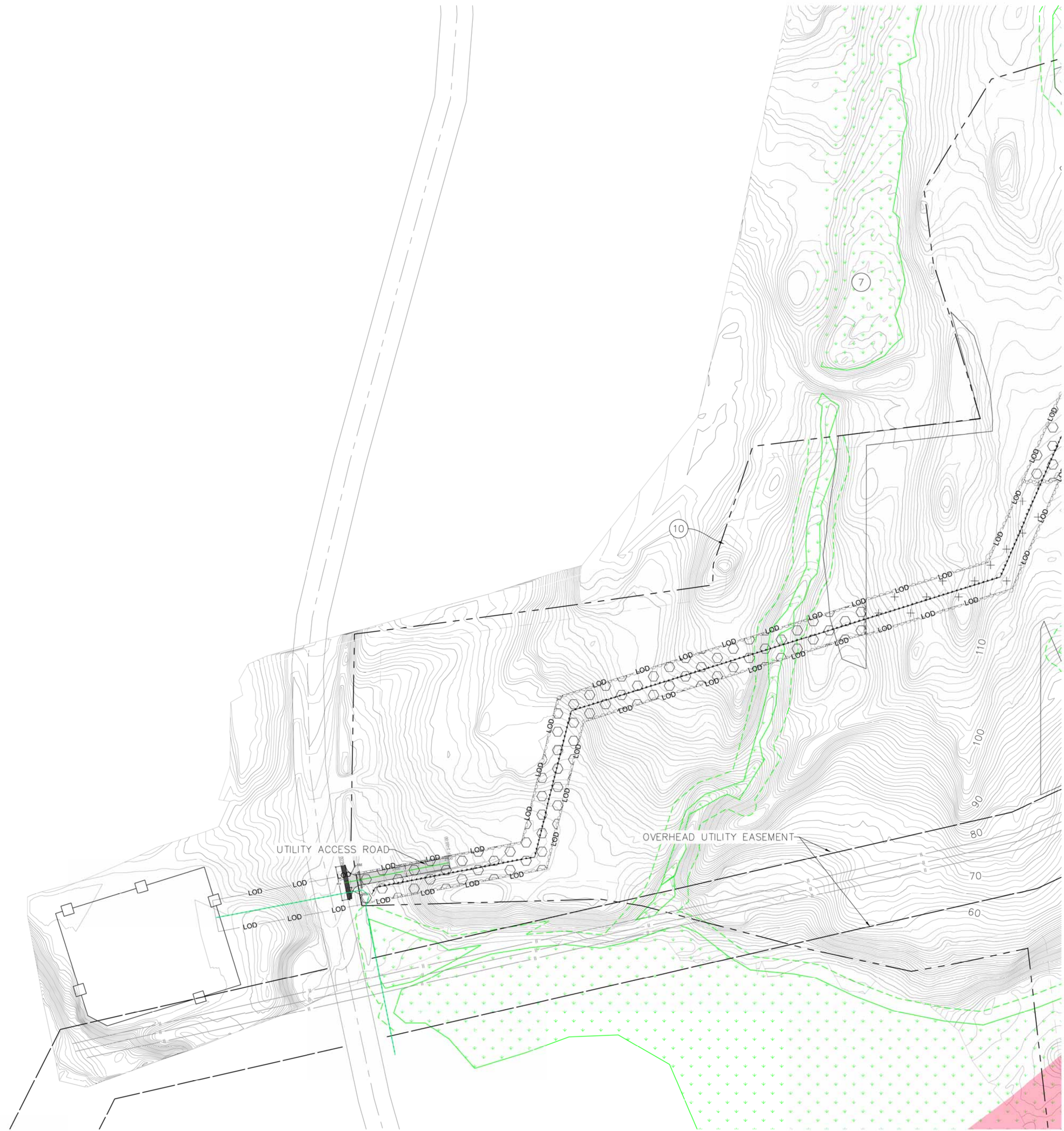
PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
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 41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: EROSION & SEDIMENT CONTROL SITE PLAN

SHEET: ESC-204



LEGEND

| | |
|------|---|
| ⑥ | PROPOSED SITE ACCESS ROAD |
| ⑦ | WETLAND W/BUFFER |
| ⑧ | SITE FENCE LINE |
| ⑨ | SITE LIMIT OF DISTURBANCE |
| ⑩ | SITE BOUNDARY |
| ⑪ | RIVER OR CREEK |
| ⑫ | 100 YEAR FLOOD ZONE |
| ⑬ | SITE ENTRANCE ROAD (SEE ESC 300/ DETAIL 1 & ESC 301) |
| ⑭ | TREE CLEARING (GRUBBING) |
| ⑮ | TREE CLEARING (NO GRUBBING) |
| ⑯ | TREE CLEARING (SELECTIVE) |
| ⑰ | SILT FENCE |
| ⑱ | CONSTRUCTION ENTRANCE/EXIT |
| ⑲ | SLOPE MATTING |
| ⑳ | CONCRETE WASH-OUT |
| ㉑ | SEDIMENT BARRIER (HAY BALE) |
| ㉒ | TEMPORARY SEDIMENT TRAP |
| ㉓ | TEMPORARY SEDIMENT BASIN |
| ㉔ | TEMPORARY LAYDOWN YARD |
| —75— | (E) MAJOR CONTOUR |
| —76— | (E) MINOR CONTOUR |
| —75— | (N) MAJOR CONTOUR |
| —76— | (N) MINOR CONTOUR |



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PROJECT ADDRESS:
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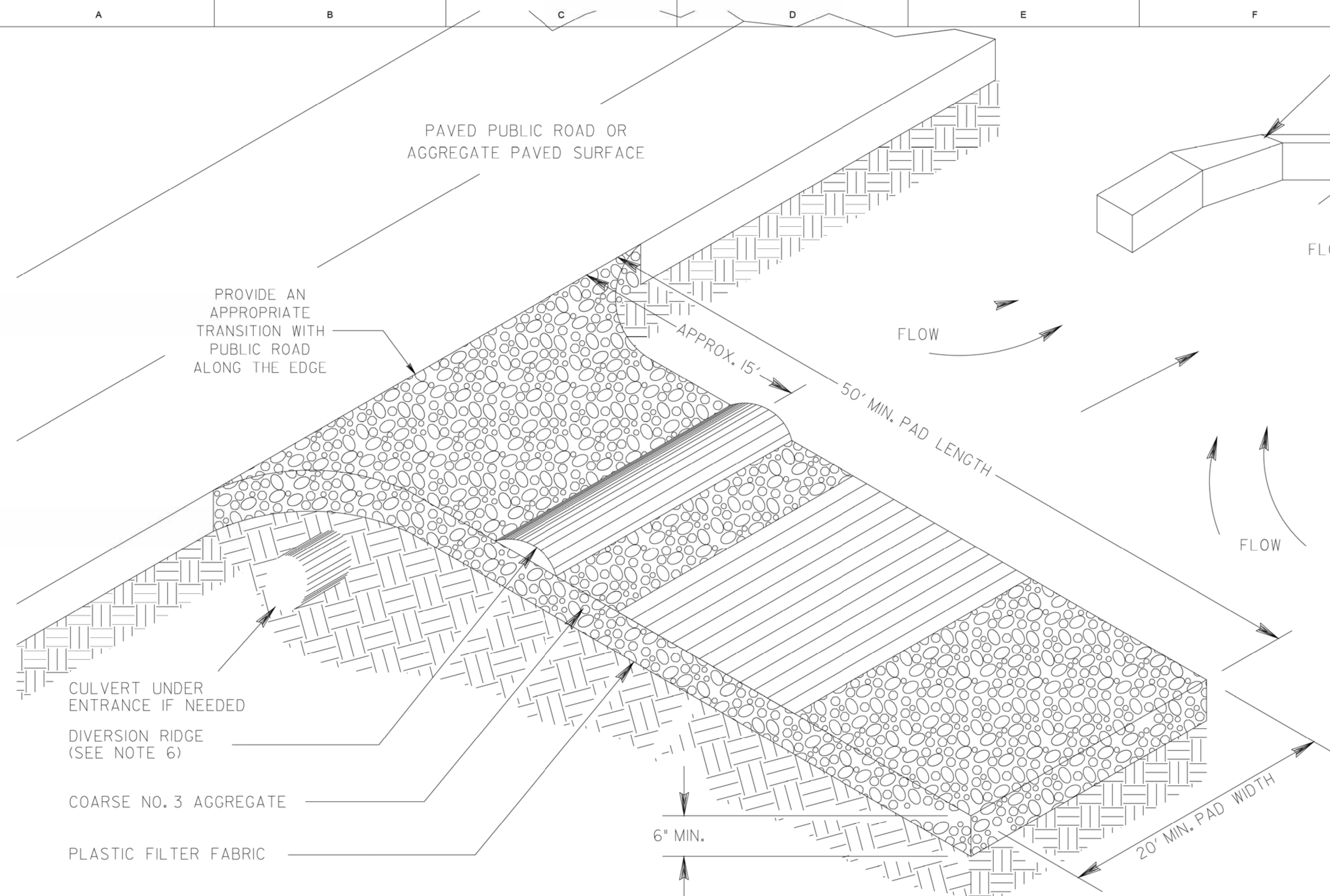
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: EROSION & SEDIMENT CONTROL SITE PLAN

SHEET: ESC-205

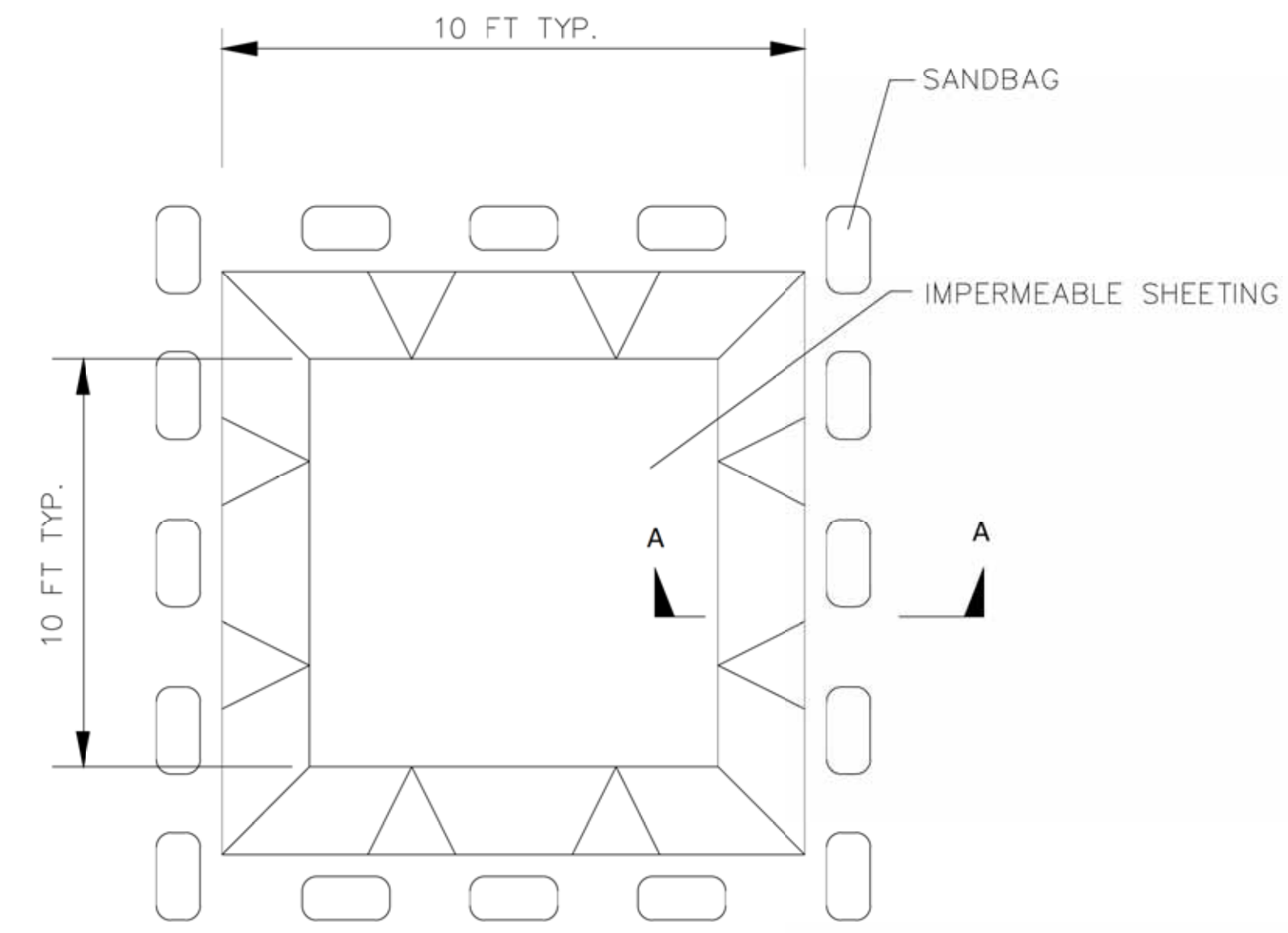
1 EROSION & SEDIMENT CONTROL SITE PLAN
 ESC-205 Scale: 1" = 100' 0 100 200 Feet



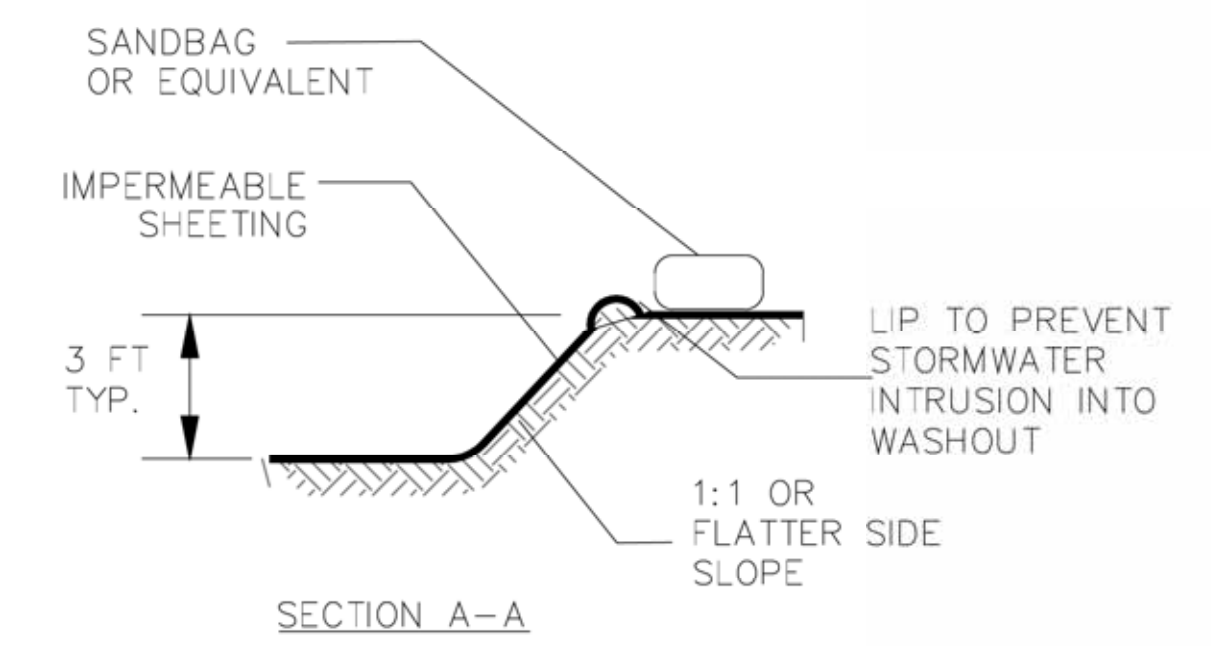


1 CONSTRUCTION ENTRANCE, TYP.
ESC-300 Scale: NTS

- GENERAL NOTES:**
1. AVOID LOCATING CONSTRUCTION EXITS ON STEEP SLOPES OR AT SHARP CURVES ON PUBLIC ROADS. CONSTRUCTION EXITS ARE NOT REQUIRED FOR AGGREGATE SURFACED PUBLIC ROADS.
 2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA AND GRADE FOR POSITIVE DRAINAGE.
 3. AGGREGATE SIZE SHALL BE COARSER THAN NO. 3 AGGREGATE WITH 0.0% PASSING THE 1.06" U.S. STANDARD SIEVE.
 4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6" AND PLACED ON APPROVED PLASTIC FILTER FABRIC.
 5. GRAVEL PAD WIDTH SHALL BE EQUAL TO FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS.
 6. PROVIDE A TRAVERSABLE DIVERSION RIDGE CONSTRUCTED OF AGGREGATE 6" TO 8" HIGH WHEN GRADE TOWARD THE PAVED AREA IS GREATER THAN 2%.
 7. INSTALL CULVERT UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
 8. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD DOES NOT SUFFICIENTLY REMOVE THE MUD PRIOR TO ENTERING PUBLIC ROADS, THE CONTRACTOR SHALL ADD A CONSTRUCTION EXIT TIRE WASH ASSEMBLY TO AN EXISTING CONSTRUCTION EXIT. THE CONSTRUCTION EXIT TIRE WASH ASSEMBLY INCLUDES: TIRE WASH AREA, WATER SOURCE, AND SEDIMENT TRAP OR OTHER ACCEPTABLE SEDIMENT STORAGE DEVICE.
 9. TIRE WASHING SHALL BE PERFORMED ON AN AREA STABILIZED WITH AGGREGATE THAT DRAINS INTO A SEDIMENT TRAP OR OTHER ACCEPTABLE SEDIMENT STORAGE DEVICE. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE CONSTRUCTION EXIT TO THE SEDIMENT CONTROL DEVICE. ACCEPTABLE SEDIMENT STORAGE DEVICE EXAMPLES INCLUDE TEMPORARY SEDIMENT TRAPS, HAY BALES OR STONE FILTER RING WITH THE SEDIMENT STORAGE SIZED FOR 67 CUBIC YARDS PER ACRE OF DRAINAGE. TIRE WASHING SHALL BE DONE MANUALLY OR BY EQUIPMENT SUITABLE FOR TRUCK TRAFFIC THAT REMOVES MUD AND DIRT.
 10. AGGREGATE SHALL BE KEPT LOOSE OR SCARIFIED WHEN AGGREGATE BECOMES CONSOLIDATED.
 11. CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR, AND OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL MUD AND DEBRIS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO DRAINS MUST BE REMOVED IMMEDIATELY.



PLAN



SECTION A-A

2 CONCRETE WASHOUT, TYP.
ESC-300 Scale: NTS



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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
**ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

SEAL: DATE: **22-JUL-20**
PROJECT #: **20200309_CT**
DRAWN BY: **MMM**
CHECKED BY: **DRG**

TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

SHEET: **ESC-300**



12-Tire Tracked Soils

Construction Entrance (CE)

Definition

A stone stabilized pad sometimes associated with a mud rack, automotive spray, or other measures located at points of vehicular ingress and egress on a construction site.

Purpose

To reduce the tracking of sediment off site onto paved surfaces.

Applicability

At points of construction vehicle ingress and egress where sediment may be tracked onto adjoining paved surfaces by vehicles.

Planning Considerations

The construction entrance is intended to cause sediment to drop off of vehicle tires and prevent it from being tracked onto adjoining paved areas. Its design and maintenance requirements are dependent upon how intensely the entrance is used and the nature of the sediments that can be tracked. Consider the texture of the sediments to be retained by the construction entrance. The minimum construction entrance is 50 feet, but where the soils subject to tracking contain less than 80% sand, then the minimum length of the construction entrance is 100 feet (see textural triangle in Appendix H). For sites containing clay or silty soils consider developing a construction access road with a gravel base. (See Chapter 4, Special Treatments, Construction Access Roads). The length of the construction entrance may be reduced by the establishment of an access road with a stable surface that is not subject to soil tracking.

If the construction entrance drains to a paved surface and its grade exceeds 2%, then plan on installing a water bar within the construction entrance to divert water away from the paved surface. For access roads that slope down to the construction entrance, consider installing a water bar and associated sediment barrier to protect the construction entrance from unnecessary siltation during storm events.

Placing a geotextile beneath the stone pad of the construction entrance can reduce the pumping of subsoil into the stone by construction traffic and reduce maintenance costs.

Select the site of the construction entrance to avoid poorly drained soils where possible. Where lateral flows of water must be maintained through the construction entrance, consider having an engineer design subsurface drainage or other drainage facilities to eliminate the obstruction to flow.

Consider requiring the installation of construction access fencing to restrict construction traffic to the construction entrance.

When the construction entrance is installed to the minimum standards and is properly maintained, but is still unable to prevent the majority of sediments from being tracked off site, the entrance must either be extended or a washing rack installed. If a washing rack or similar device is to be used to wash sediment from tires, make provisions to intercept the wash water and trap the sediment before it is carried off-site. Determine the sizing requirements for the sediment trapping facility so that it will hold the maximum volume of water that would be used over a 2-hour period. (See **Pumping Settling Basin** measure for formula on pumping rate and storage requirements).

The use of a construction entrance may not eliminate the need for periodic street sweeping, but if properly maintained it should significantly reduce the need.

Specifications

Materials

Stone: Use angular stone sized according to the standards set by ASTM C-33, size No. 2 or 3, or DOT Standard Specifications section M.01.01, size #3. See **Figure SP-1** on page 5-4-14 for stone sizing requirements.

Geotextiles: Fibers used in the geotextile shall consist of synthetic polymers composed of at least 85% by weight polypropylenes, polyesters, polyamides, polyethylene, polyolefins or polyvinylidene-chlorides. The fibers shall be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The geotextile used shall be specifically intended for "road stabilization" applications and shall be consistent with the manufacturer's recommendations for the intended use.

Location

Locate the entrance to provide maximum utilization by construction vehicles. Avoid poorly drained soils, where possible.

Construction Entrance Dimensions (see **Figure CE-2**)
Stone Thickness: not less than 6 inches.

Width: A 12-foot minimum with points of ingress or egress flared sufficiently to accommodate the turning radius of the construction vehicles used.

Length: A 50-foot minimum except where the tracked sediments contain less than 80% sand, a 100-foot minimum is required. If the traveled length is less than the minimum, then the construction entrance shall be the traveled length. On a site specific basis increase lengths as needed to prevent the tracking of sediment onto paved surfaces.

Construction

Clear the area of the entrance of all vegetation, roots, and other objectionable material. At poorly drained locations install subsurface drainage insuring the outlet to the drains are free flowing.

If using a geotextile in place of free draining material, unroll the geotextile in a direction parallel to the roadway centerline in a loose manner permitting it to conform to the surface irregularities when the stone is placed. Unless otherwise specified by the manufacturer, the minimum overlap of geotextile panels joined without sewing according to the manufacturer's recommendations. The geotextile may be temporarily secured with pins recommended or provided by the manufacturer but they shall be removed prior to placement of the stone.

Place the stone to the specified dimensions. Keep

additional stone available or stockpile for future use. If the grade of the construction entrance drains to the paved surface and it exceeds 2%, construct a water bar within the construction entrance at least 15 feet from its entrance on the paved surface diverting runoff water to a settling or filtering area.

Construct any drainage and settling facilities needed for washing operations. If wash racks are used, install according to the manufacturer's specifications.

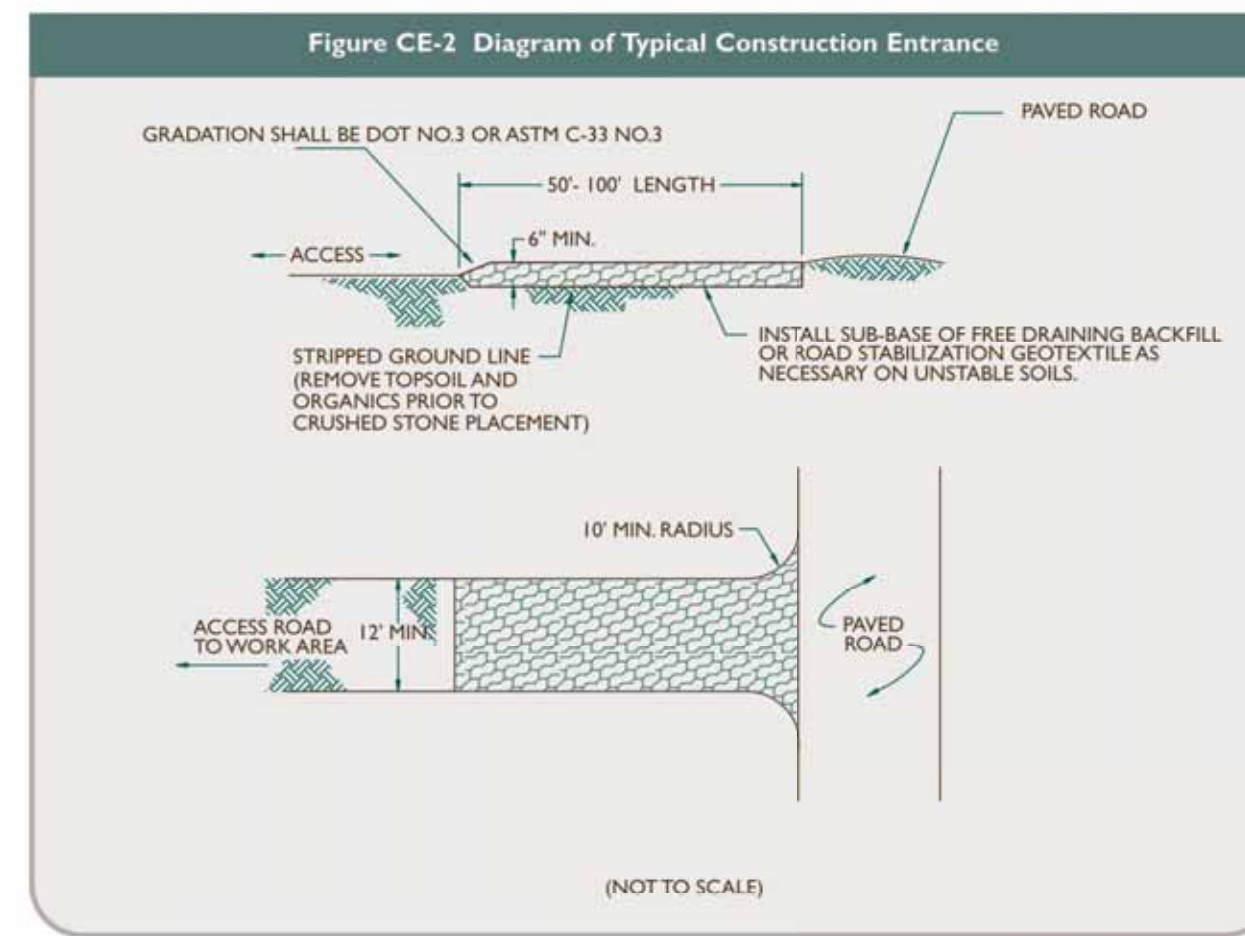
Washing

If most of the sediment is not removed by travel over the stone, wash tires before vehicles enter a public road. Divert wash water away from the entrance to a settling area to remove sediment. Size settling area to hold the volume of water used during any 2-hour period. Using a wash rack may make washing more convenient and effective.

Maintenance

Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces. Provide periodic top dressing with additional stone or additional length as conditions demand. Repair any measures used to trap sediment as needed. Immediately remove all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to a construction site shall be left clean at the end of each day.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then either (1) increase the length of the construction entrance, (2) modify the construction access road surface, or (3) install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.



Source: USDA-NRCS

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

Errata Corrections 1/08

5-12-2

5-12-3

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

Errata Corrections 1/08

5-12-4

4-Short Term Non-living Soil Protection

Temporary Erosion Control Blanket (ECB)

Definition

A manufactured blanket composed of biodegradable / photodegradable natural or polymer fibers and/or filaments that have been mechanically, structurally or chemically bound together to form a continuous matrix.

Purpose

To provide temporary surface protection to newly seeded and/or disturbed soils to absorb raindrop impact and to reduce sheet and rill erosion and to enhance the establishment of vegetation.

Applicability

- On disturbed soils where slopes are 2:1 or flatter.
- Where wind and traffic generated air flow may dislodge standard, unarmored mulches.
- May be used as a substitute for **Temporary Soil Protection**.
- May be used as a substitute for **Mulch for Seed**.

Planning Considerations

When considering the use of ECB keep in mind the blanket's capability to conform to ground surface irregularities. If the blanket is not capable of developing a continuous contact with the soil then it must be applied to a fine graded surface. Some blankets will soften and when wetted conform to the ground. Also, when the ground is frozen, proper anchoring can be difficult, if not impossible.

Care must be taken to choose the type of blanket which is most appropriate for the specific need of the project. With the abundance of erosion control blankets available, it is impossible to cover all of the advantages, disadvantages and specifications of all manufactured blankets. There is no substitute for a thorough understanding of the manufacturer's instructions and recommendations in conjunction with a site visit by the erosion and sedimentation plan designer prior to and during installation to verify a product's appropriateness.

The success of temporary erosion control blankets is dependent upon strict adherence to the manufacturer's installation recommendations. As such, a final inspection should be planned to ensure that the lap joints are secure, all edges are properly anchored and all staking/stapling patterns follow the manufacturer's recommendations.

Specifications

Materials

Temporary erosion control blankets shall be composed of fibers and/or filaments that:

- are biodegradable or photodegradable within two years but without substantial degradation over the period of intended usage (five months maximum);
- are mechanically, structurally or chemically bound together to form a continuous matrix of even thickness and distribution that resist raindrop splash and when used with seedings allows vegetation to penetrate the blanket;
- are of sufficient structural strength to withstand stretching or movement by wind or water when installed in accordance with the manufacturer's recommendations;
- are free of any substance toxic to plant growth and unprotected human skin or which interferes with seed germination;
- contain no contaminants that pollute the air or waters of the State when properly applied, and

- provide either 80%-95% soil coverage when used as a substitute for **Mulch for Seed** or 100% initial soil coverage when used as a substitute for **Temporary Soil Protection** measure.

Materials shall be selected as appropriate for the specific site conditions in accordance with manufacturer's recommendations. Use of any particular temporary erosion control blanket should be supported by manufacturer's test data that confirms the blanket meets these material specifications and will provide the short term erosion control capabilities necessary for the specific project.

Site Preparation and Installation

(see **Figure ECB-1**)

Prepare the surface, remove protruding objects and install temporary erosion control blankets in accordance with the manufacturer's recommendations. Ensure that the orientation and anchoring of the blanket is appropriate for the site.

The blanket can be laid over areas where sprigged grass seedlings have been inserted into the soil. Where landscape plantings are planned, lay the blanket first and then plant through the blanket in accordance with Landscape Planting measure.

Inspect the installation to insure that all lap joints are secure, all edges are properly anchored and all staking or stapling patterns follow manufacturer's recommendations.

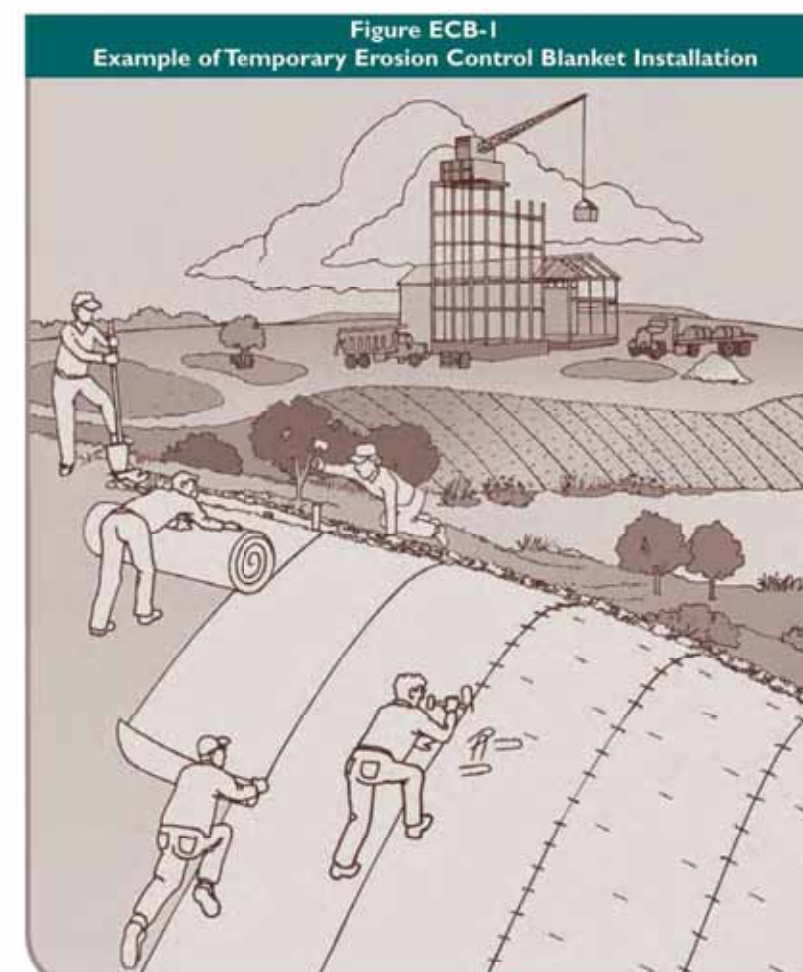
Maintenance

Inspect temporary erosion control blankets at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. Blanket failure has occurred when (1) soils and/or seed have washed away from beneath the blanket and the soil surface can be expected to erode at an accelerated rate, and/or (2) the blanket has become dislodged from the soil surface or is torn.

If washouts or breakouts occur, re-install the blanket after regrading and re-seeding, ensuring that blanket installation still meets design specifications. When repetitive failures occur at the same location, review conditions and limitations for use and determine if diversions, stone check dams or other measures are needed to reduce failure rate.

Repair any dislodged or failed blankets immediately.

When used as a substitute for **Mulch for Seed**, continue to inspect as required by the seeding measure. When used as a substitute for **Temporary Soil Protection**, continue to inspect until it is replaced by other erosion control measures or until work resumes.



811

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

5-4-11

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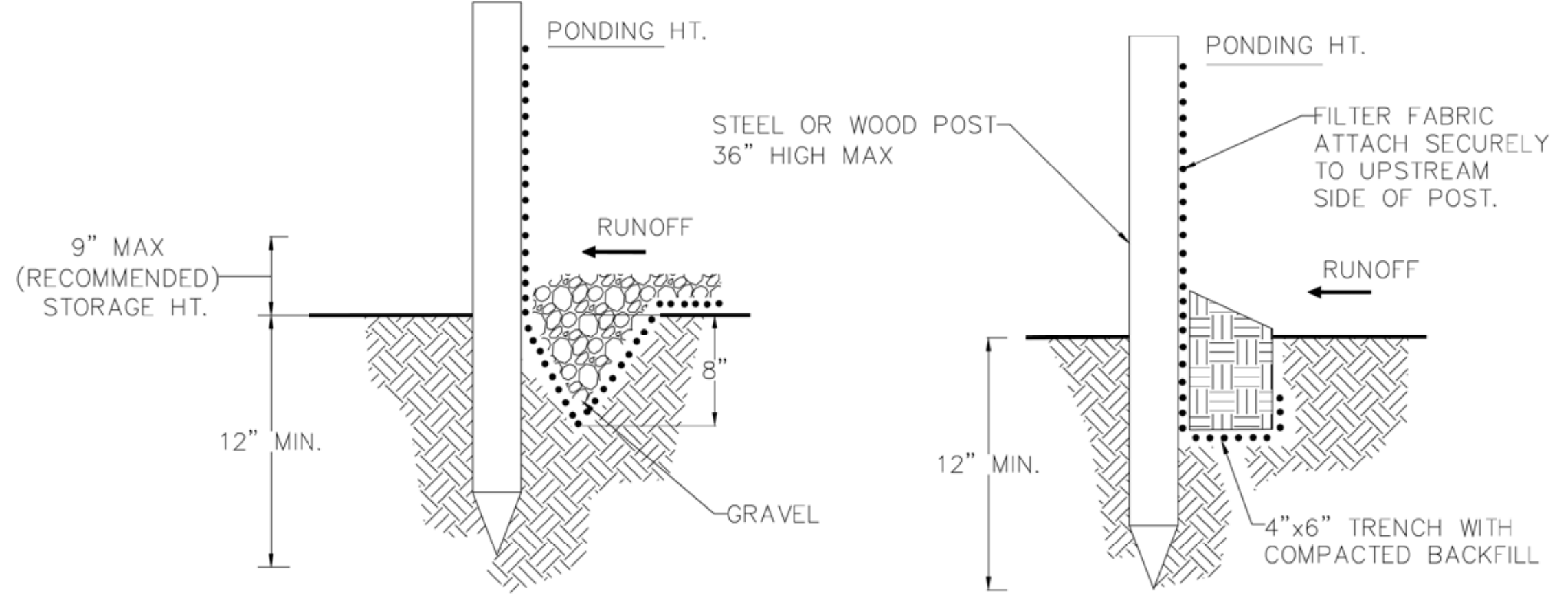
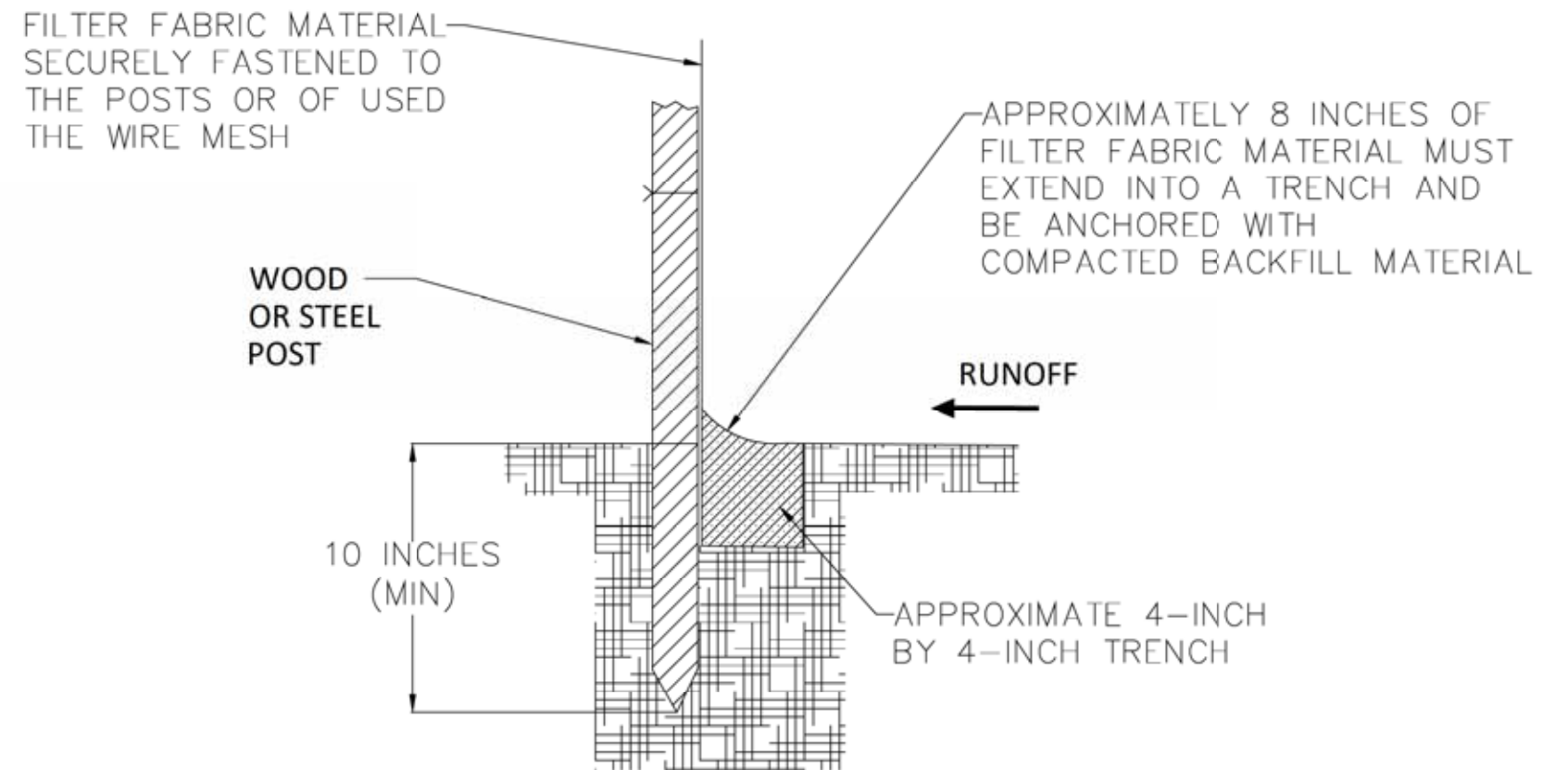
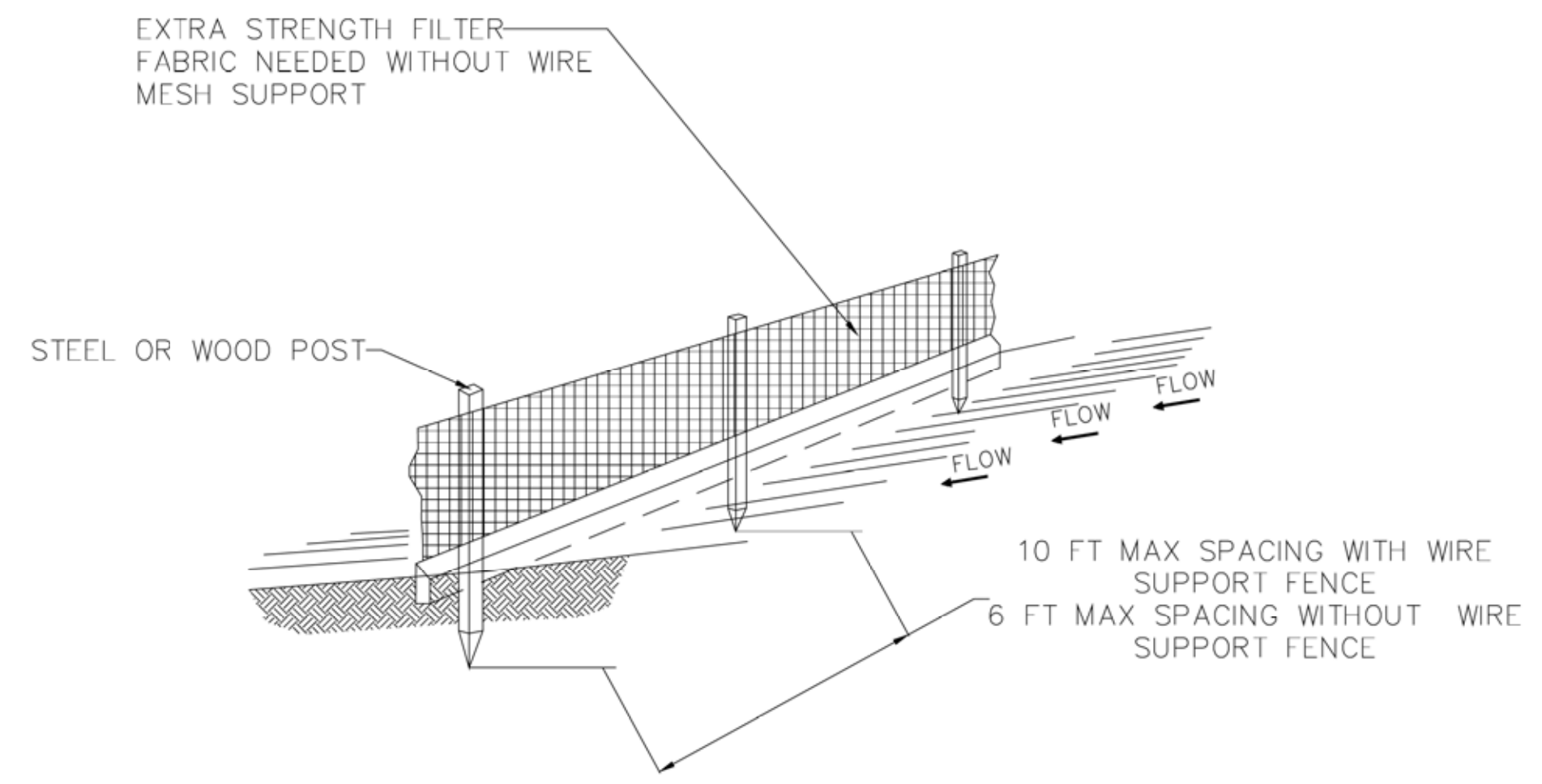
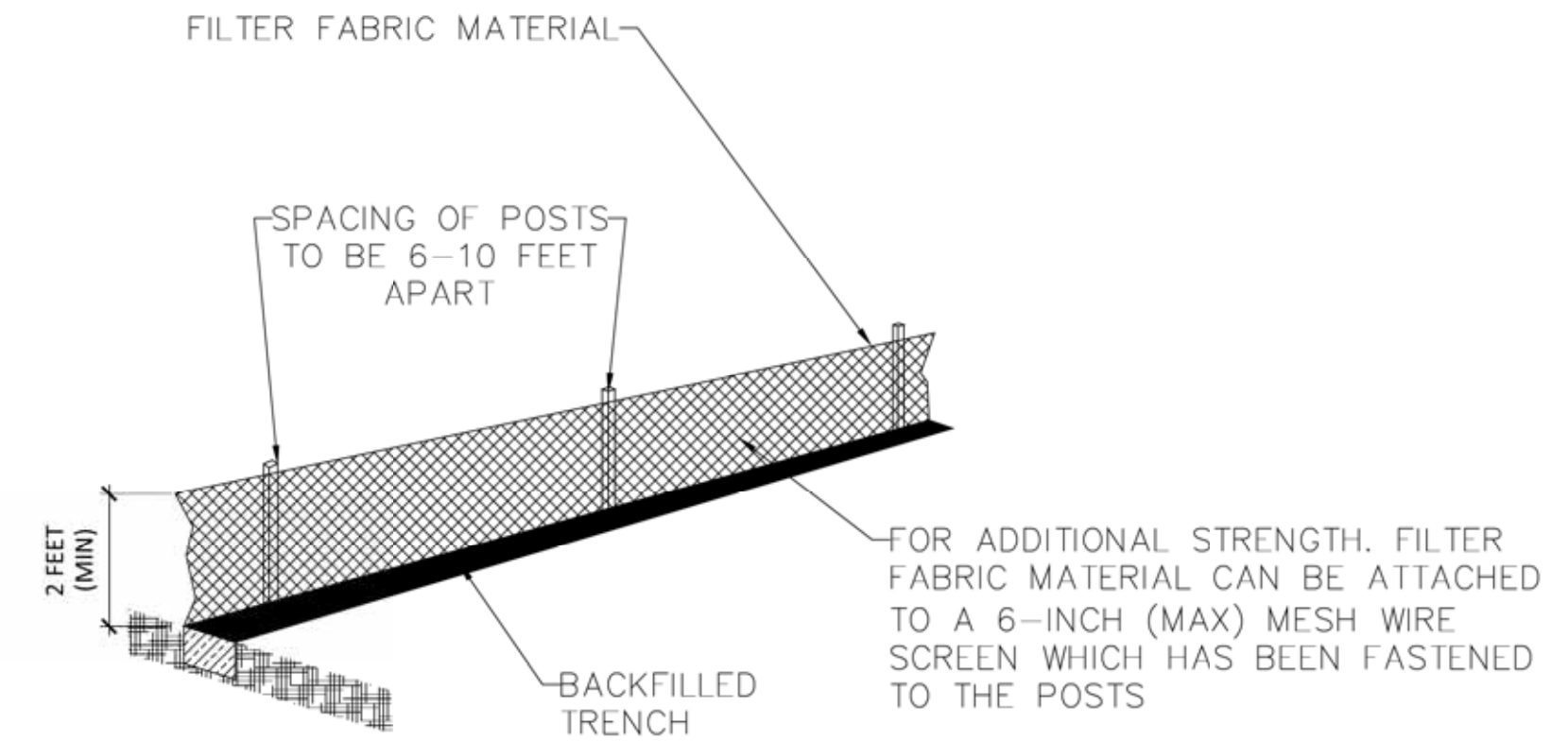
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| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

SHEET: **ESC-301**

PLOT DATE: Thursday, July 23, 2020



1 SILT FENCE, TYP.
ESC-302 Scale: NTS

2 SILT FENCE ALTERNATE, TYP.
ESC-302 Scale: NTS



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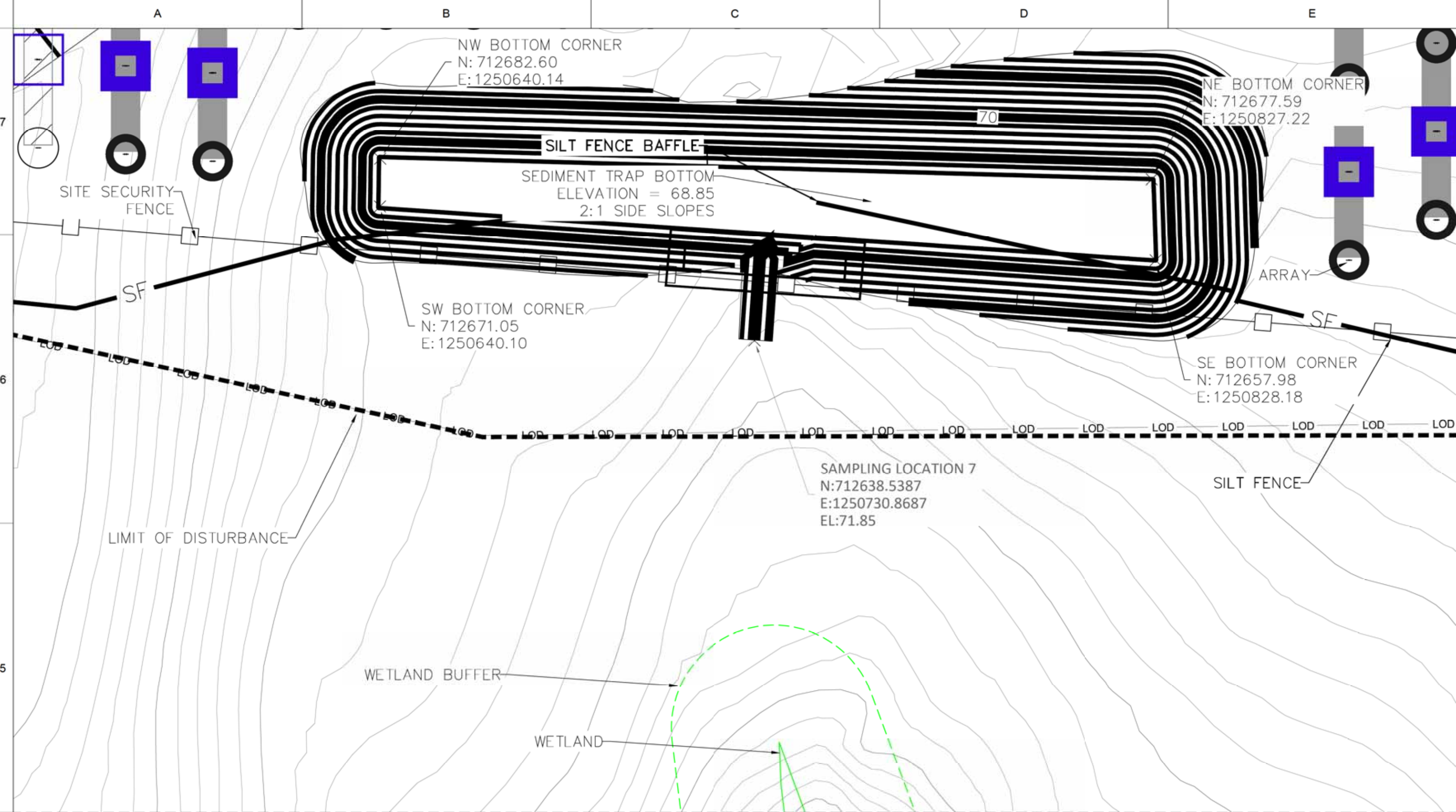
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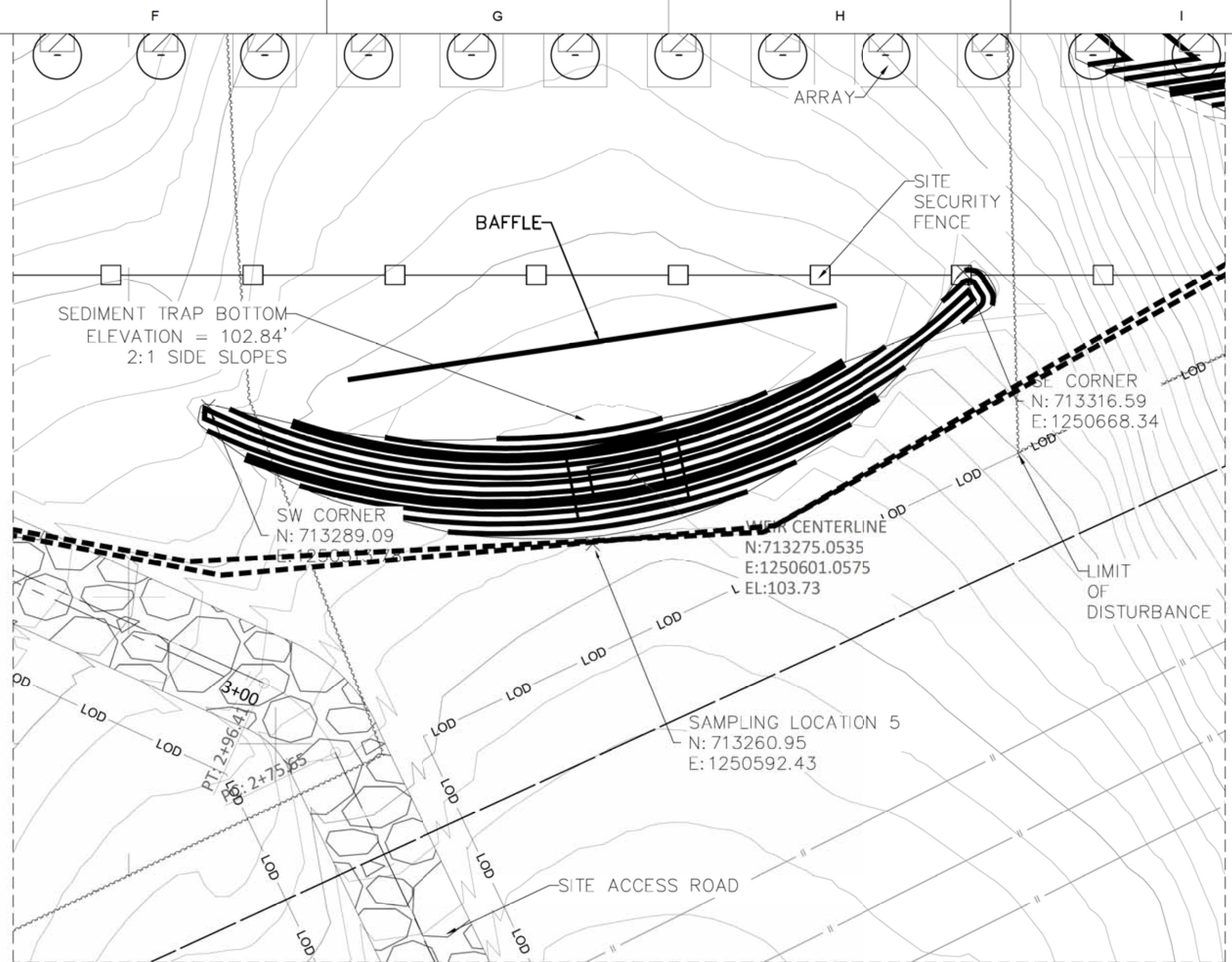
TITLE: EROSION & SEDIMENT CONTROL DETAILS

SHEET: ESC-302

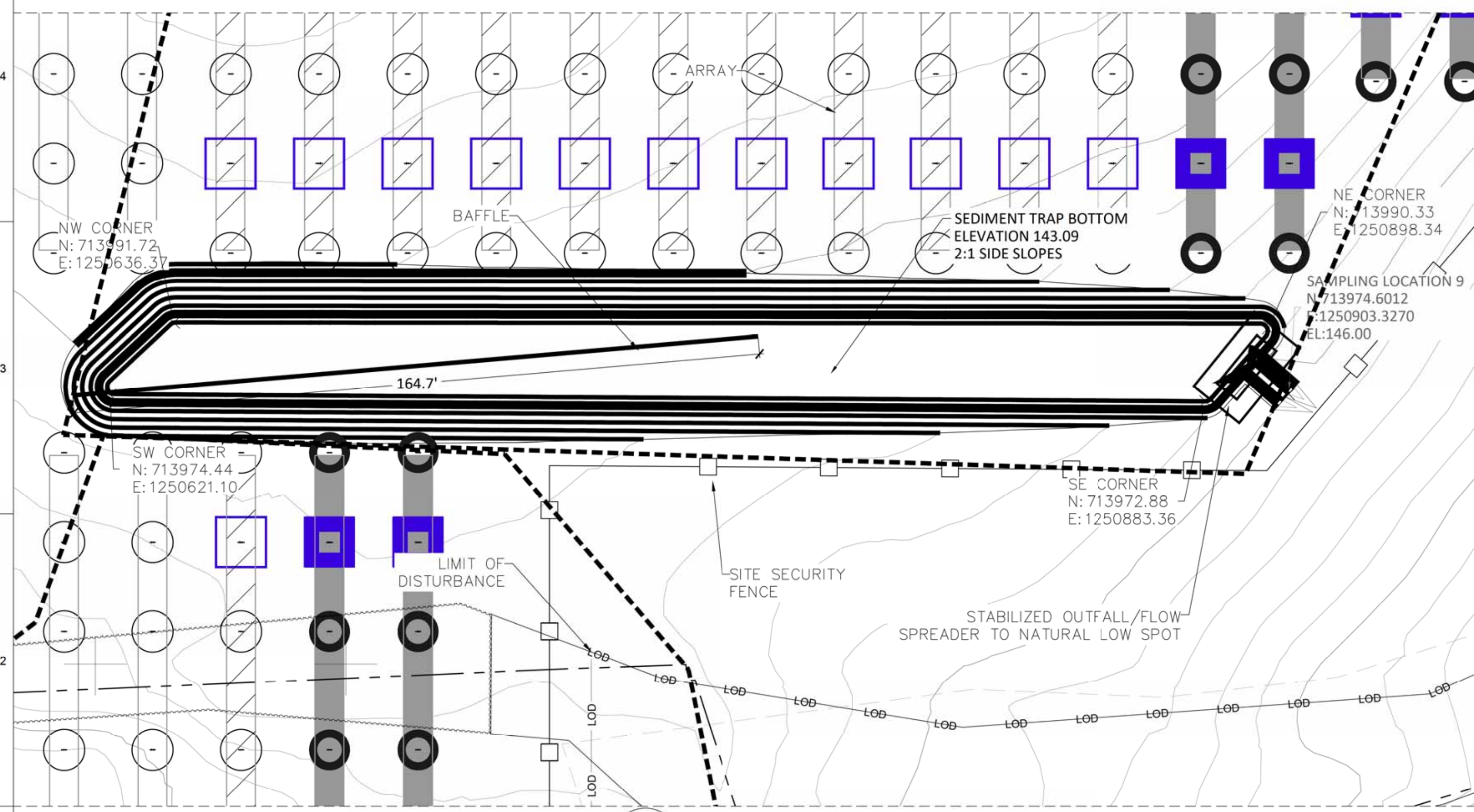




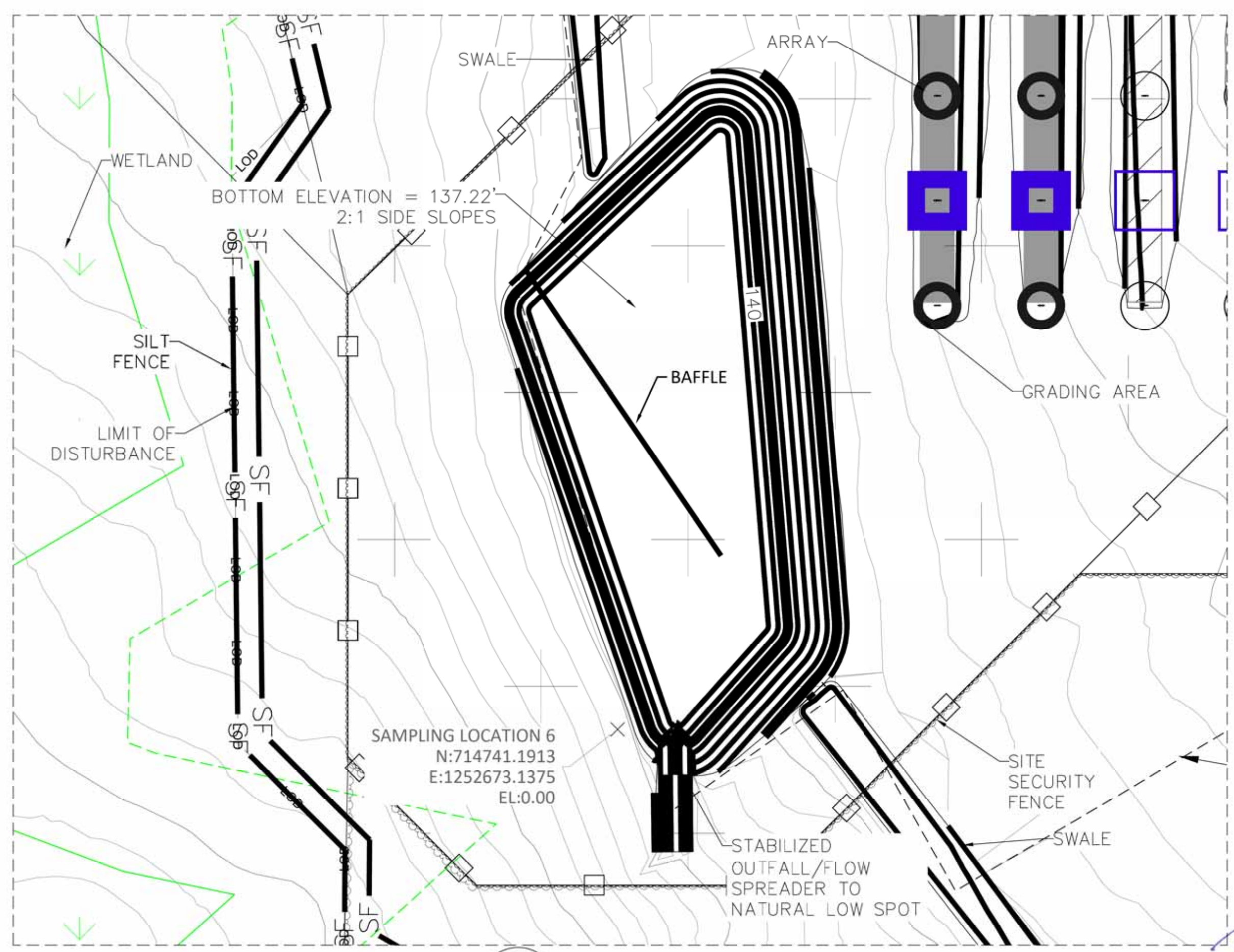
1 SEDIMENT TRAP 1
ESC-303 Scale: 1"=20'



2 SEDIMENT TRAP 2
ESC-303 Scale: 1"=20'



3 SEDIMENT TRAP 3
ESC-303 Scale: 1"=20'



4 SEDIMENT TRAP 4
ESC-303 Scale: 1"=20'



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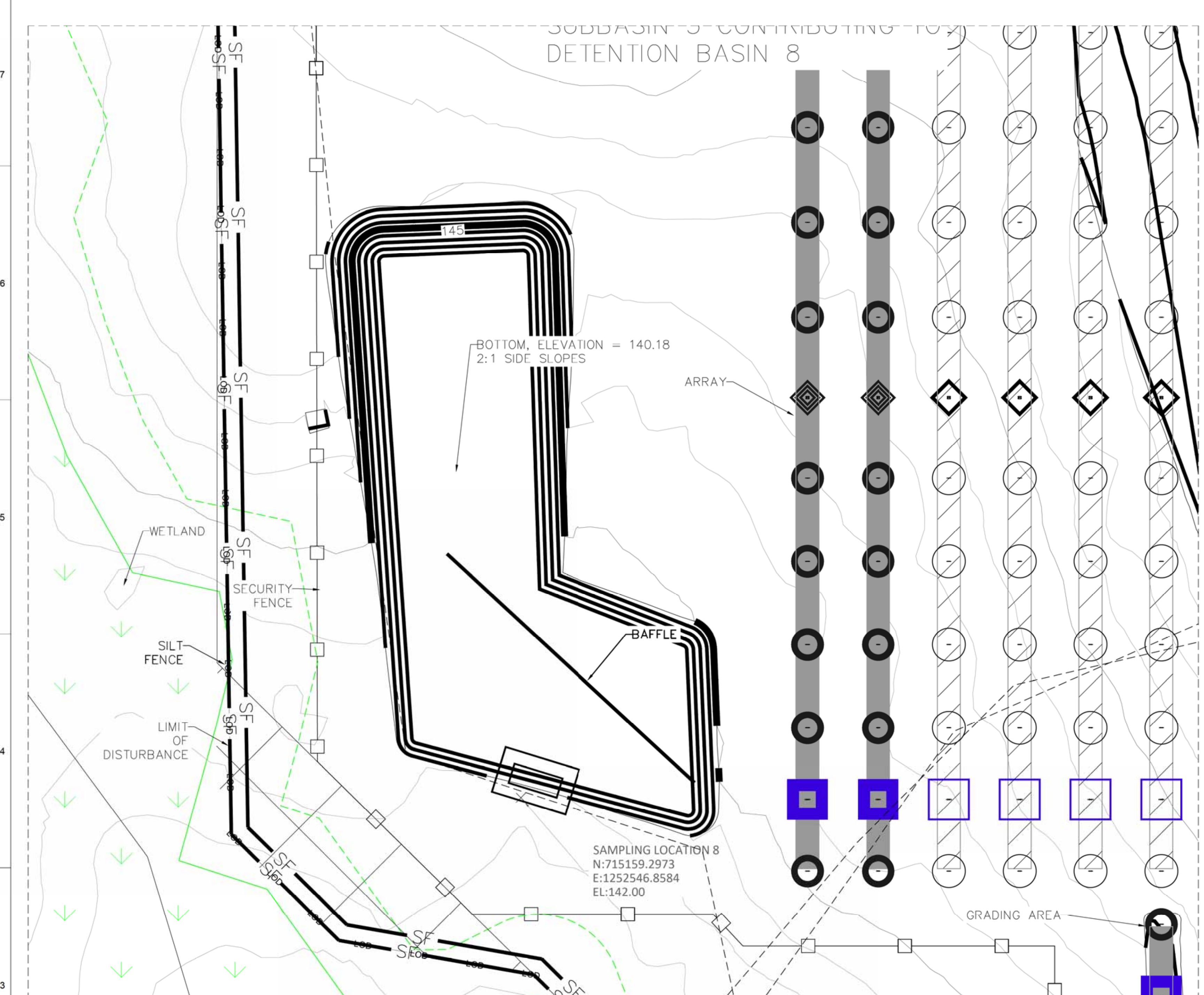
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TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

SHEET: **ESC-303**





1 SEDIMENT TRAP 5
ESC-304 Scale: 1"=20'



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SHEET: ESC-304



II - Sediment Impoundments, Barriers and Filters

Temporary Sediment Trap (TST)

Definition

A temporary ponding area with a stone outlet formed by excavation and/or constructing an earthen embankment.

Purpose

To detain sediment-laden runoff from small disturbed areas long enough to allow a majority of the sediment to settle out.

Applicability

- Below disturbed areas where the contributing drainage area is 5 acres or less. For drainage areas greater than 5 acres use **Temporary Sediment Basin** measure.
- Where the intended use is 2 years or less. For uses greater than 2 years use **Temporary Sediment Basin** measure.
- When diverting sediment-laden water with temporary diversions that meet the above limitations for use.

Planning Considerations

Sequence the construction of temporary sediment traps, along with other perimeter erosion and sediment controls so that they are constructed and made functional before land disturbance in the contributing drainage area takes place.

The temporary sediment trap has two storage requirements: one for wet storage and one for dry storage. Commonly, the wet storage is created by excavation within a drainage way and the dry storage created by the construction of a pervious stone dike across the drainage way. Sometimes the trap is formed, at least in part, by the construction of an embankment. Such an embankment constitutes a dam and is therefore limited to a height of no greater than 5 feet and requires care in its construction.

E&S plans should identify the size of the contributing drainage area, wet and dry storage requirements as well as the volume of sediment accumulation that will trigger trap cleaning. Sediment is required to be removed from the trap when the sediment accumulation exceeds half of the wet storage volume and the dry storage volume. The volume of wet storage shall be measured from the low point of the excavated area to the base of the stone outlet structure (see **Figure TST-2**). The volume of the dry storage shall be measured from the base of the stone outlet to the top of the stone outlet (overflow mechanism).

Variations in temporary sediment trap design may be considered, but plan reviewers should ensure the minimum storage requirements and structural requirements noted below are maintained.

Specifications

Location

Locate temporary sediment traps so that they can be installed prior to conducting any grading activities in the contributing watershed. Do not locate traps in close proximity to existing or proposed building foundations if there is any concern regarding seepage of water from the temporary sediment trap into the foundations or foundation excavation area. Locate traps to obtain maximum storage benefit from the terrain, for ease of clean out and disposal of the trapped sediment.

Trap Capacity

The temporary sediment trap shall have an initial storage volume of 134 cubic yards per acre of drainage area, half of which shall be in the form of wet storage to provide a stable settling medium. The remaining storage volume shall be in the form of a drawdown (dry storage) which will provide extended settling time during less frequent, larger storm events. **Figure TST-1** contains the formulas for calculating the wet storage volume and the dry storage volume. The volume of wet storage shall be measured from the low point of the excavated area to the base of the stone outlet structure (see **Figure TST-2**). The volume of the dry storage shall be measured from the base of the stone outlet to the top of the stone outlet (overflow mechanism).

Try to provide a storage area which has a minimum 2:1 length to width ratio (measured from point of maximum runoff introduction to outlet).

Figure TST-1 Formula for Figuring Temporary Sediment Trap Storage Requirements

Wet storage volume may be approximated as follows:

$$V_w = 0.85 \times A_w \times D_w$$

where,

- V_w = the wet storage volume in cubic feet
- A_w = the surface area of the flooded area at the base of the stone outlet in square feet
- D_w = the maximum depth in feet, measured from the low point in the trap to the base of the stone outlet.

Dry storage volume may be approximated as follows:

$$V_d = \frac{(A_w + A_t)}{2} \times D_d$$

where,

- V_d = the dry storage volume
- A_w = the surface area of the flooded area at the base of the stone outlet in square feet.
- A_t = the surface area of the flooded area at the top of the stone outlet (over flow mechanism), in square feet.
- D_d = the depth in feet, measured from the base of the stone outlet to the top of the stone outlet

Note: Conversion between cubic feet and cubic yards is: cubic feet x 0.037 = cubic yards.

Slope Limitations

All cut and fill slopes shall be 2:1 or flatter except for the excavated wet storage area where slopes shall not exceed 1.5:1. The maximum depth of excavation within the wet storage area should not exceed 3 feet to facilitate clean-out and for site safety considerations.

Inlet / Outlet Configuration

The outlet shall be located at the most distant hydraulic point from the inlet. In cases where a long narrow site runs perpendicular to the direction of flow, baffles consisting of stone dikes or other structurally sufficient barriers should be added along the long axis of the trap to increase travel distance through the trap (see **Figure TST-3**).

Outlet

Plan the outlet in such a manner that the minimum wet storage and dry storage volumes are created (see Trap Capacity section above) and 1 foot of free board between the top of the outlet and the crest of the embankment is established. The outlet consists of a pervious stone dike with a core of modified riprap and faced on the upstream side with DOT #3 stone. Temporary sediment traps must outlet onto stabilized (preferably undisturbed) ground, into a watercourse, stabilized channel, or into a storm drain system. **Figure TST-4** shows an example of an outlet for a temporary sediment trap.

Embankment

The maximum height of a temporary sediment trap embankment is limited to 5 feet as measured vertically

from the crest of the embankment to the down slope base of the embankment or toe of the stone dike, whichever is lower. Minimum top widths (W) and outlet heights (H) for various embankment heights (H) are shown in **Figure TST-2**. Side slopes of the embankment shall be 2:1 or flatter.

Materials

Modified Riprap: shall meet the requirements of DOT Standard Specifications Section M.12.02.

DOT #3 Stone: shall meet the requirements of DOT Standard Specifications Section M.01.01 for #3 Aggregate.

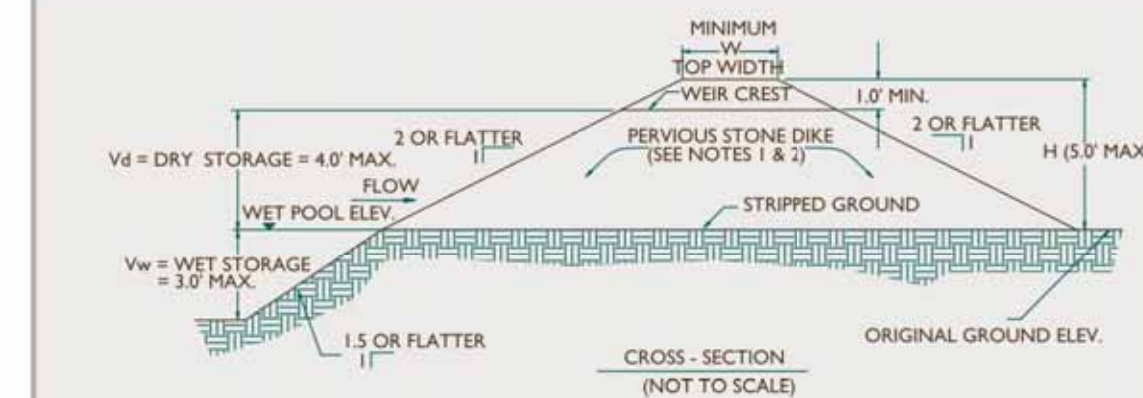
Construction

Clear, grub and strip any vegetation and root mat from any proposed embankment and outlet area. Remove stones and rocks whose diameter is greater than 3 inches and other debris. Excavate wet storage and construct the embankment and/or outlet as needed to attain the necessary storage requirements. Use only fill material for the embankment that is free from excessive organics, debris, large rocks (over 6 inches) or other unsuitable materials. Compact the embankment in 9-inch layers by traversing with equipment while it is being constructed.

Stabilize the earthen embankment using any of the following measures: **Temporary Seeding**, **Permanent Seeding**, or **Stone Slope Protection** immediately after installation.

Carry out construction operations in such a manner that erosion and water pollution are minimized.

Figure TST-2 Minimum Top Width (w) Required for Temporary Sediment Trap Embankments According to Height of Embankment (feet)



| TOP WIDTH VS. HEIGHT | |
|----------------------|--------|
| H (ft) | W (ft) |
| 1.5 | 2.0 |
| 2.0 | 2.0 |
| 2.5 | 2.5 |
| 3.0 | 2.5 |
| 3.5 | 3.0 |
| 4.0 | 3.0 |
| 4.5 | 4.0 |
| 5.0 | 4.5 |

Source: USDA-NRCS

Maintenance

Inspect the temporary sediment trap at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. Check the outlet to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be maintained at least 1 foot below the crest of the embankment. Also check for sediment accumulation and filtration performance.

When sediments have accumulated to one half the minimum required volume of the wet storage, dewater the trap as needed, remove sediments and restore the

trap to its original dimensions. Dispose of the sediment removed from the basin in a suitable area and in such a manner that it will not erode and cause sedimentation problems.

The temporary sediment trap may be removed after the contributing drainage area is stabilized. If it is to be removed, then the plans should show how the site of the temporary sediment trap is to be graded and stabilized after removal.

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

5-11-25

5-11-26 Errata Corrections 1/08

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

5-11-27

Figure TST-3 Example plan Views of Baffles in Temporary Sediment Traps

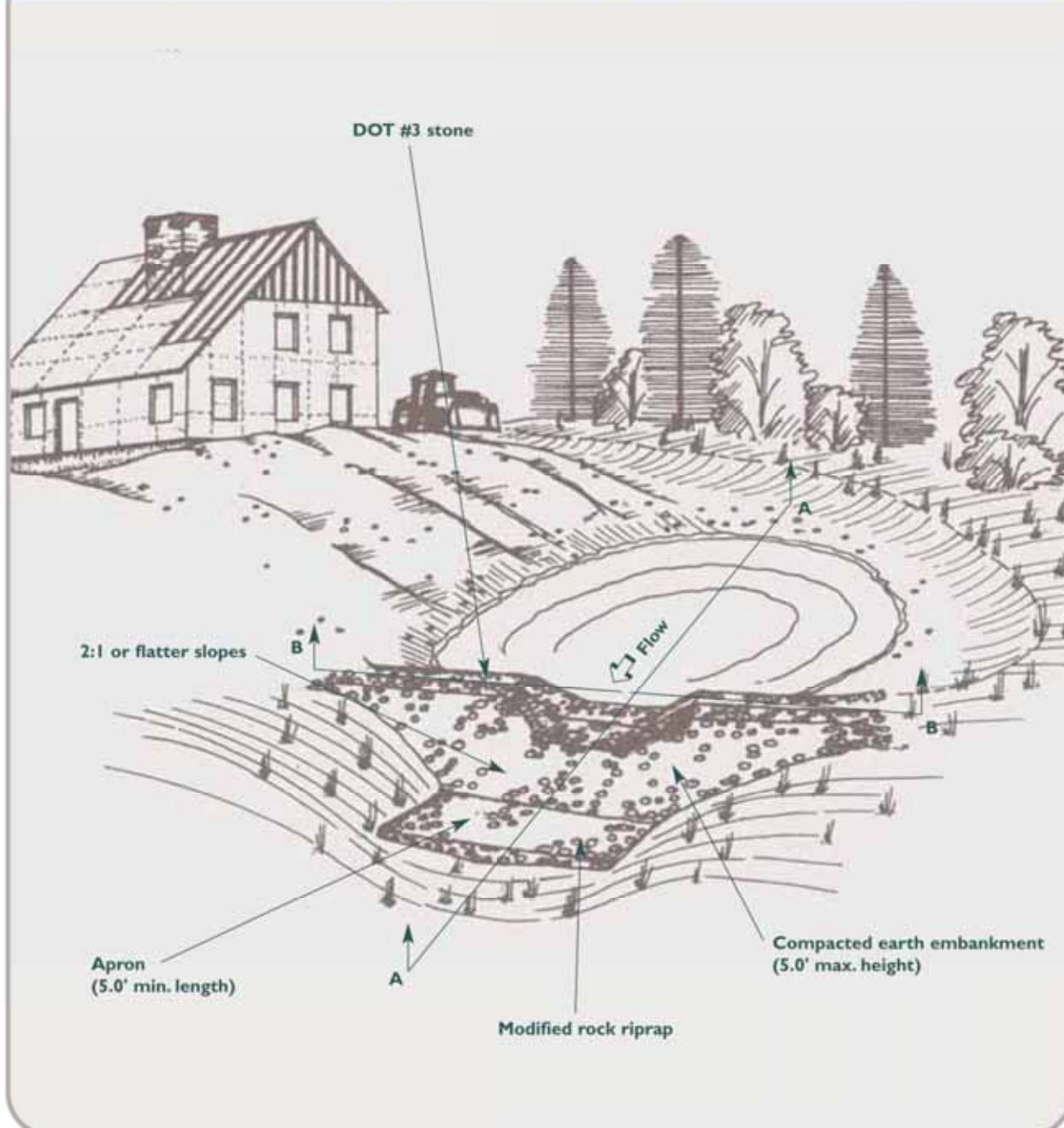
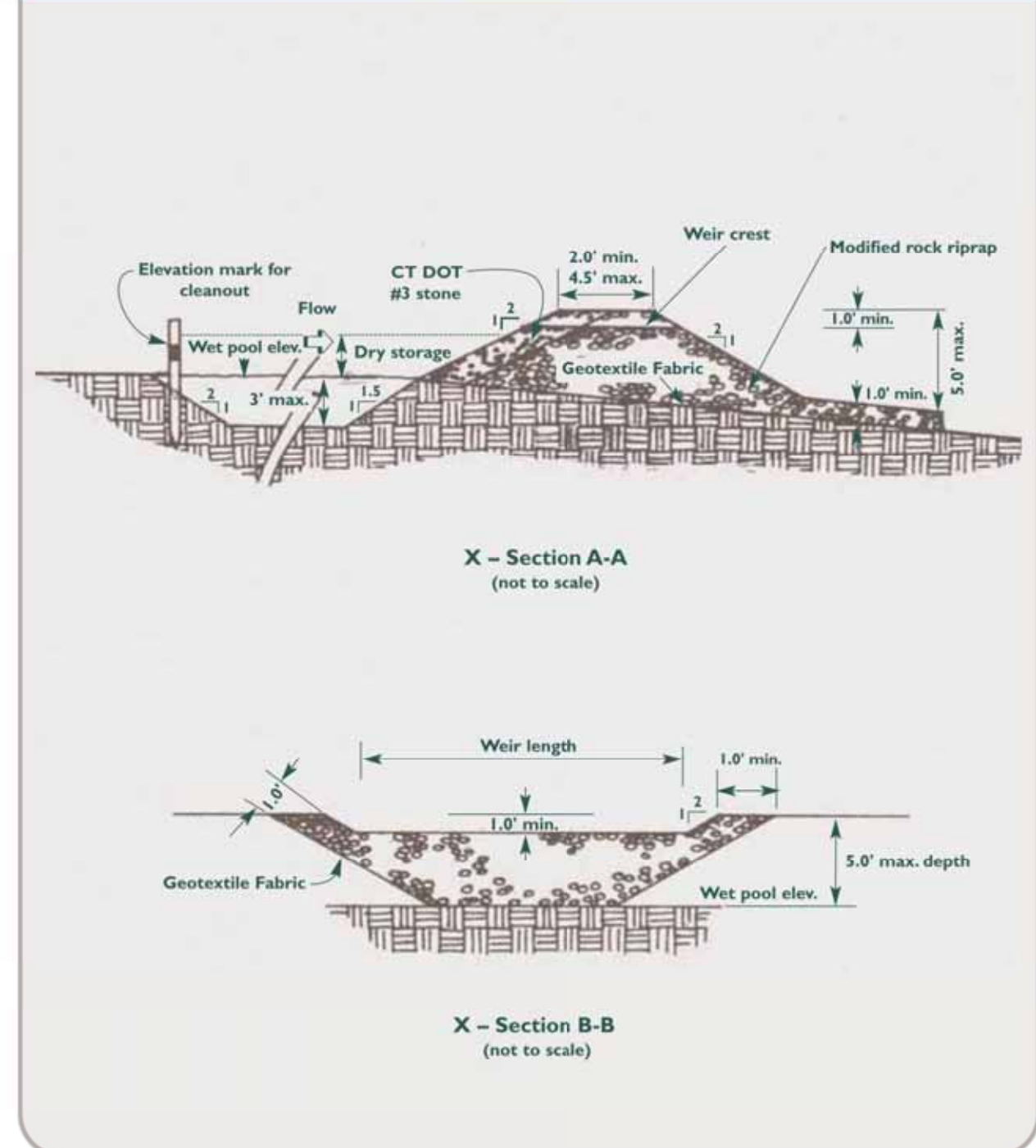


Figure TST-4 Views of a Temporary Sediment Trap Outlet



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TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

SHEET: **ESC-305**

11- Sediment Impoundments, Barriers and Filters

Geotextile Silt Fence (GSF)

Definition

A temporary sediment barrier consisting of a geotextile fabric pulled taut and attached to supporting posts and entrenched.

Purpose

- To intercept and retain sediment from disturbed areas.
- To decrease the velocity of sheet flows and low volume concentrated flows.

Applicability

- Below small disturbed areas where the contributing drainage area (disturbed and undisturbed) is less than 1 acre in size.
- At storm water drainage inlets and catch basins where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, water-courses and other sensitive areas.
- Not for use in areas where rock, frozen ground or other hard surface prevents proper installation of the barrier (see Special Case Combinations in **Stone Check Dam** measure).
- Prohibited from use in drainageways whose flow is supported by ground water discharge.

Planning Considerations

See Planning Considerations for Sediment Impoundments, Barriers and Filters Functional Group. When used at a culvert outlet, plan to install the geotextile silt fence before the start of construction and complete the installation of the required outlet protection before the culvert is made functional. It is preferable to control sediment at the inlets rather than at the outlet. Use at outlets should be limited to situations where inlet controls are not possible or to act as a backup to inlet controls.

Specifications

Materials

Geotextile fabric: shall be a pervious sheet of polypropylene, nylon, polyester, ethylene or similar filaments and shall be certified by the manufacturer or supplier as conforming to the requirements shown in **Figure GSF-1**. The geotextile shall be non-rotting, acid and alkali resistant and have sufficient strength and permeability for the purpose intended, including handling and backfilling operations. Filaments in the geotextile shall be resistant to absorption. The filament network must be dimensionally stable and resistant to delamination. The geotextile shall be free of any chemical treatment or coating that will reduce its permeability. The geotextile shall also be free of any flaws or defects which will alter its physical properties. Torn or punctured geotextiles shall not be used.

Supporting posts shall be at least 42 inches long made of either 1.5 inch square hardwood stakes or steel posts with projections for fastening the geotextile possessing a minimum strength of 0.5 pound per linear foot.

Placement on the Landscape

Contributing drainage area 1 acre or less. Maximum slope length is as shown in **Figure GSF-2**.

For toe of slope (Figure GSF-3): Locate 5-10 feet down gradient from the toe of slope, generally on the contour with maintenance and sediment removal requirements in mind. When the contour can not be followed install the fence such that perpendicular wings are created to break the velocity of water flowing along the fence. See **Figure GSF-2** for spacing requirements.

Swales (see Figure GSF-4): Locate "U" shape across swale such that the bottom of both ends of the fence are higher than the top of the lowest section of the fence.

Catch Basins in Swales on Slopes: Locate 2 "U" shapes across swale as above; one immediately up slope from the catch basin and the other immediately down slope from the catch basin.

Catch Basins in Depressions: Encircle catch basin.

Culvert Inlets: Locate in a "U" shape approximately 6 feet from the culvert in the direction of the incoming flow.

Figure GSF-1 Geotextile Silt Fencing Minimum Requirements

| Physical Property | Test Method | Minimum Requirement |
|-----------------------------------|-------------|--|
| filtering efficiency | ASTM 5141 | 75% (min) |
| grab tensile strength (lbs.) | ASTM D4632 | 100 lbs |
| elongation @ failure | ASTM D4632 | 15 % |
| Mullen burst strength | ASTM D3786 | 250 psi |
| puncture strength | ASTM 4835 | 50 lbs |
| apparent opening size | ASTM D4751 | no greater than 0.90 mm and no less than 0.60 mm |
| flow rate | ASTM D4491 | 0.2 gal/ft ² /min |
| permeability | ASTM D4491 | 0.05 sec. -1 (min) |
| ultraviolet radiation stability % | ASTM-D4355 | 70% after 500 hours of exposure (min) |

Culvert Outlets: Locate across the swale at least 6 feet from the culvert outlet.

Figure GSF-2 Geotextile Silt Fence Slope/Length Limitations

| Slope Steepness ¹ | Slope Length and Wing Spacing |
|------------------------------|-------------------------------|
| 5:1 or flatter | 100 feet |
| 3:1 to 5:1 | 75 feet |
| 2:1 to 3:1 | 50 feet |

¹ Where the gradient changes through the drainage area the steepest slope section shall be used.

Installation (see Figure GSF-3)

Trench excavation: Excavate a trench a minimum of 6 inches deep and 6 inches wide on the up slope side of the fence location. For slope and swale installations, extend the ends of the trench sufficiently up slope such that bottom end of the fence will be higher than the top of the lowest portion of the fence.

When the fence is not to be installed on the contour, excavate wing trenches spaced at the intervals given in **Figure GSF-2**.

When trench excavation is obstructed by an occasional stone or tree root, provide a smooth transition between the trench bottom and the obstruction.

Support Posts: Drive support posts on the down slope side of the trench to a depth of at least 12 inches into original ground.

Never install support posts more than 10 feet apart. Install support posts closer than 10 feet apart when concentrated flows are anticipated or when steep contributing slopes and soil conditions are expected to generate larger volumes of sediment. For catch basins in hollows, drive posts at each corner of

the catch basin. Whenever the geotextile filter fabric that is used exceeds the minimum material specifications contained in this measure, the spacing of the stakes shall be per manufacturer's recommendations.

Geotextile Filter Fabric: Staple or secure the geotextile to the support posts per manufacturer's instruction such that at least 6 inches of geotextile lies within the trench, the height of the fence does not exceed 30 inches² and the geotextile is taut between the posts. When the trench is obstructed by stones, tree roots, etc. allow the geotextile to lay over the obstruction such that the bottom of the geotextile points up slope.

In the absence of manufacturer's instructions, space wire staples on wooden stakes at a maximum of 4 inches apart and alternate their position from parallel to the axis of the stake to perpendicular.

Do not staple the geotextile to living trees.

Provide reinforcement for the fence when it can be exposed to high winds.

When joints in the geotextile fabric are necessary, splice together only at a support posts, and securely seal (see manufacturer's recommendations).

Backfill & Compaction: Backfill the trench with tamped soil or aggregate over the geotextile (see **Figure GSF-3**). When the trench is obstructed by a stone, tree root, etc. make sure the bottom of the geotextile lies horizontal on the ground with the resulting flap on the up slope side of the geotextile and bury the flap 6 inches of tamped soil, or aggregate.

Maintenance

Inspect the silt fence at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs. When used for dewatering operations, inspect frequently before, during and after pumping operations.

² higher barriers may impound volumes of water sufficient to push over the support posts

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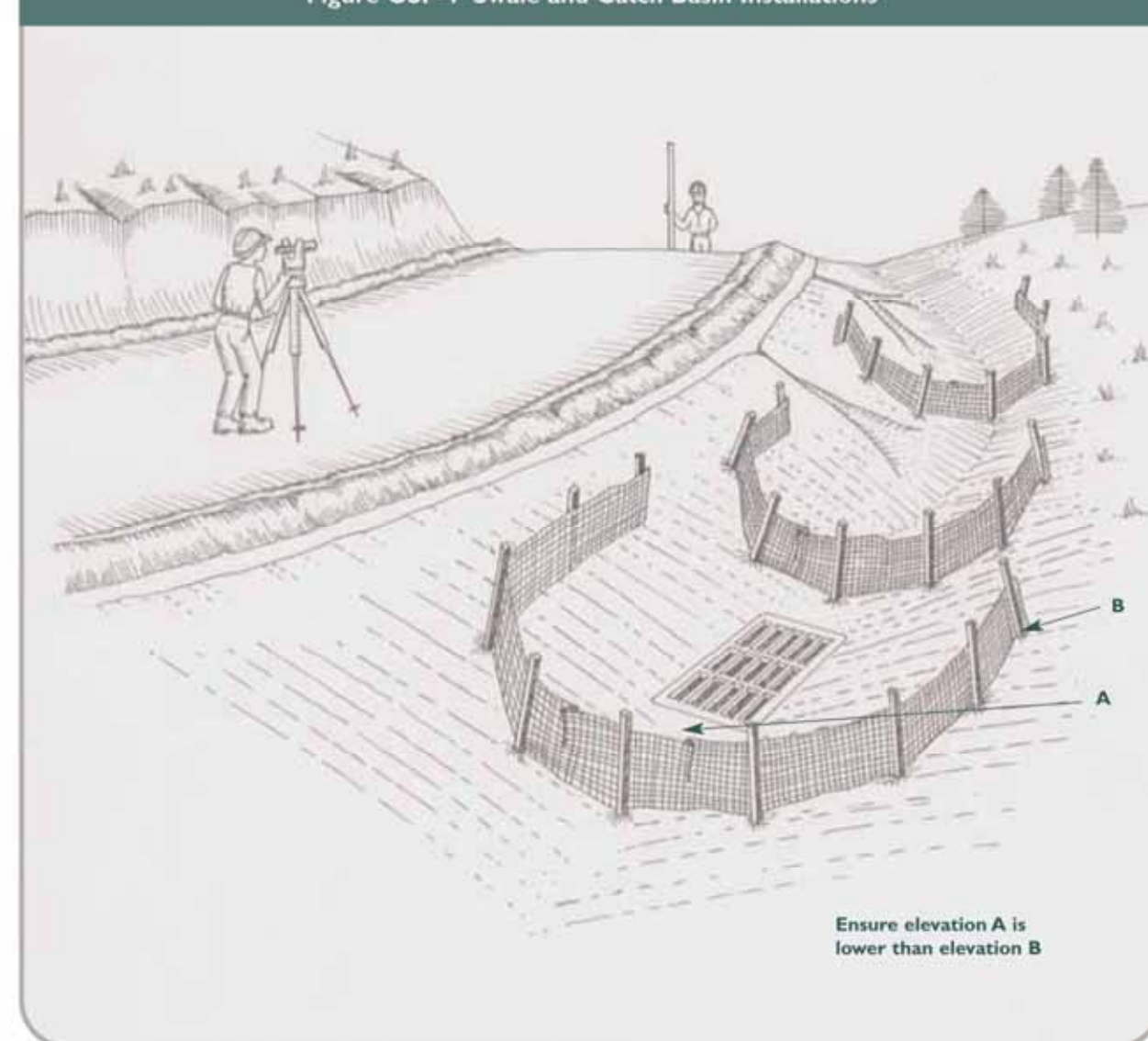
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Figure GSF-5 Silt Fence Trouble Shooting Guide

| Problem | Cause | Fix |
|---|---|--|
| fence fallen over or stakes broken from pressure of water | too large drainage area | Change to stone check dams or add additional controls up slope to reduce velocities and sediment loading (see measure matrix, Chapter 4 for other measures available). |
| | flows too concentrated | Repair or replace fence, increase staking frequency, angle stake up slope, consider installing hay bale barrier on the down slope side of fence in area of concentration or adding guy wire for support. |
| | stake not driven deep enough geotextile not properly attached to stakes | Repair or replace fence, increase stake depth. Recheck manufacturer's instructions on attachment and re-attach. |
| undercutting, toe failure | poor trenching or inadequate compaction, not enough geotextile buried | Install new fence properly or retrench, fill & compact rills at fence failure, drive stakes deeper as necessary to bury enough geotextile, fill & compact trench and down slope rills to provide support. For repeated failures consider installing hay bale barrier on the down slope side at the failure site after repair work is done. |
| | fence not on the contour, runoff eroding up slope side of barrier | Retrench, fill & compact rills at fence failure, and install perpendicular wings to break flow line such that bottom end of wing is higher than top of fence at wing joint OR install stone barriers on up slope side of fence to reduce runoff velocities. For repeated failures consider installing hay bale barrier on the down slope side at the failure site after repair work is done. |
| | poor transition from trench to obstruction at grade | Fill failed area to make smooth transition from trench to obstruction and re-bury flap of geotextile with 6 inches of tamped soil or aggregate. For repeated failures consider installing hay bale barrier on the down slope side at the failure site after repair work is done. |
| water running around ends | not extending end of fencing far enough up slope | Extend fence far enough up slope so that bottom of fence end is higher than top of lowest portion of fence, overlap joints at least 6 inches. |

Figure GSF-4 Swale and Catch Basin Installations



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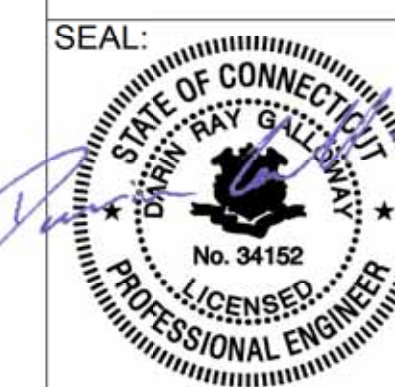
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STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
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41° 25' 9.71"N, 71° 50' 4.83"W**



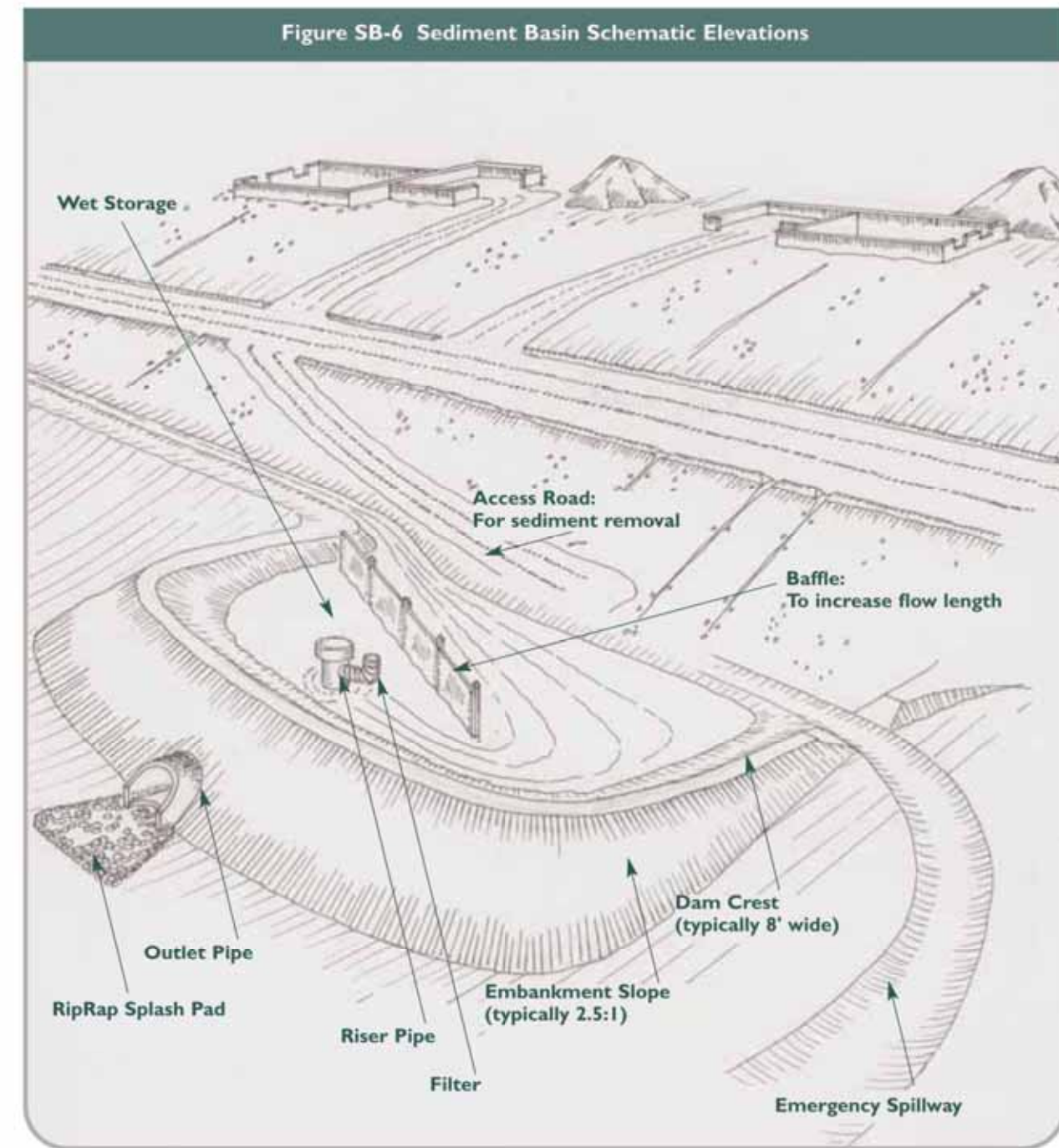
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CHECKED BY: DRG

TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

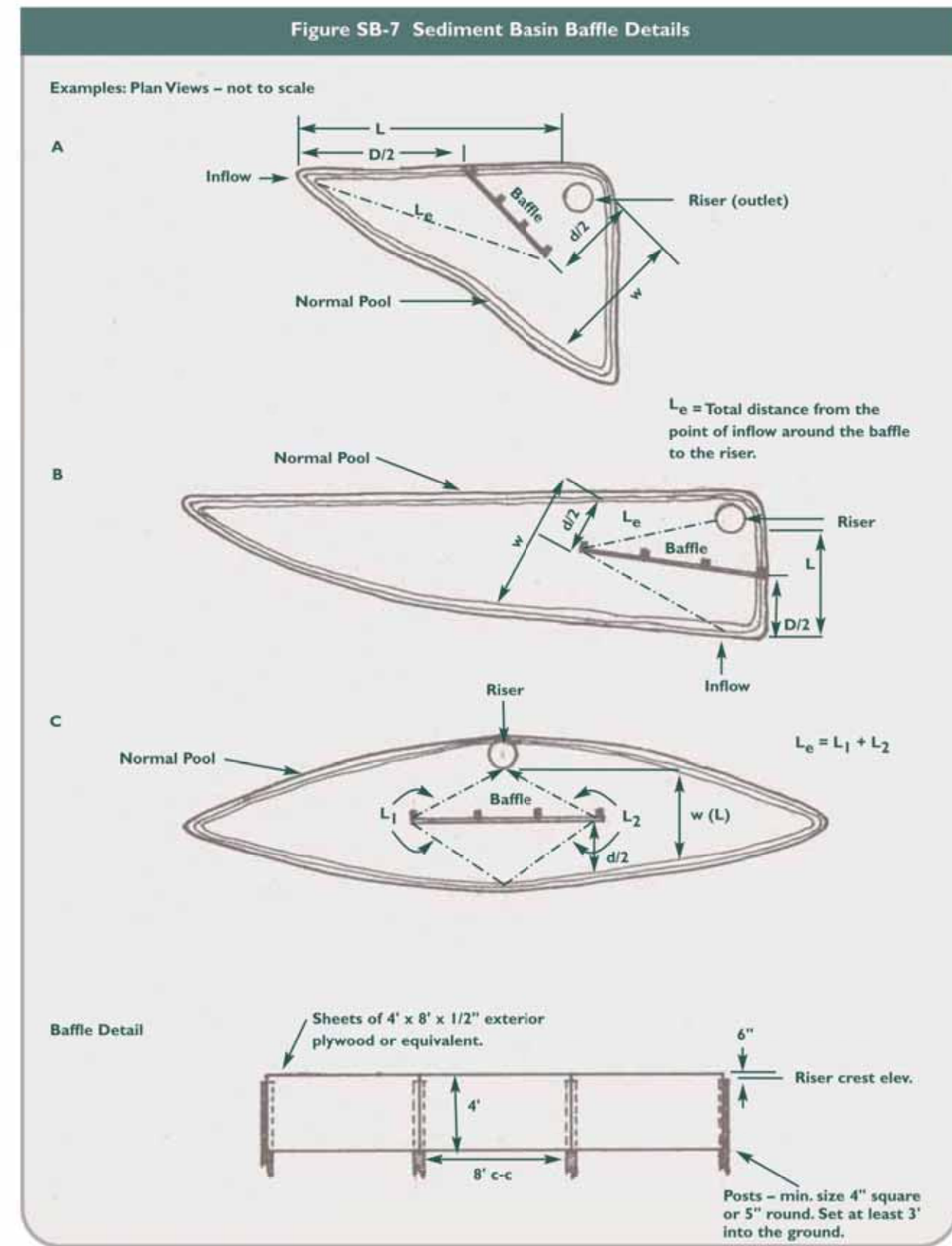
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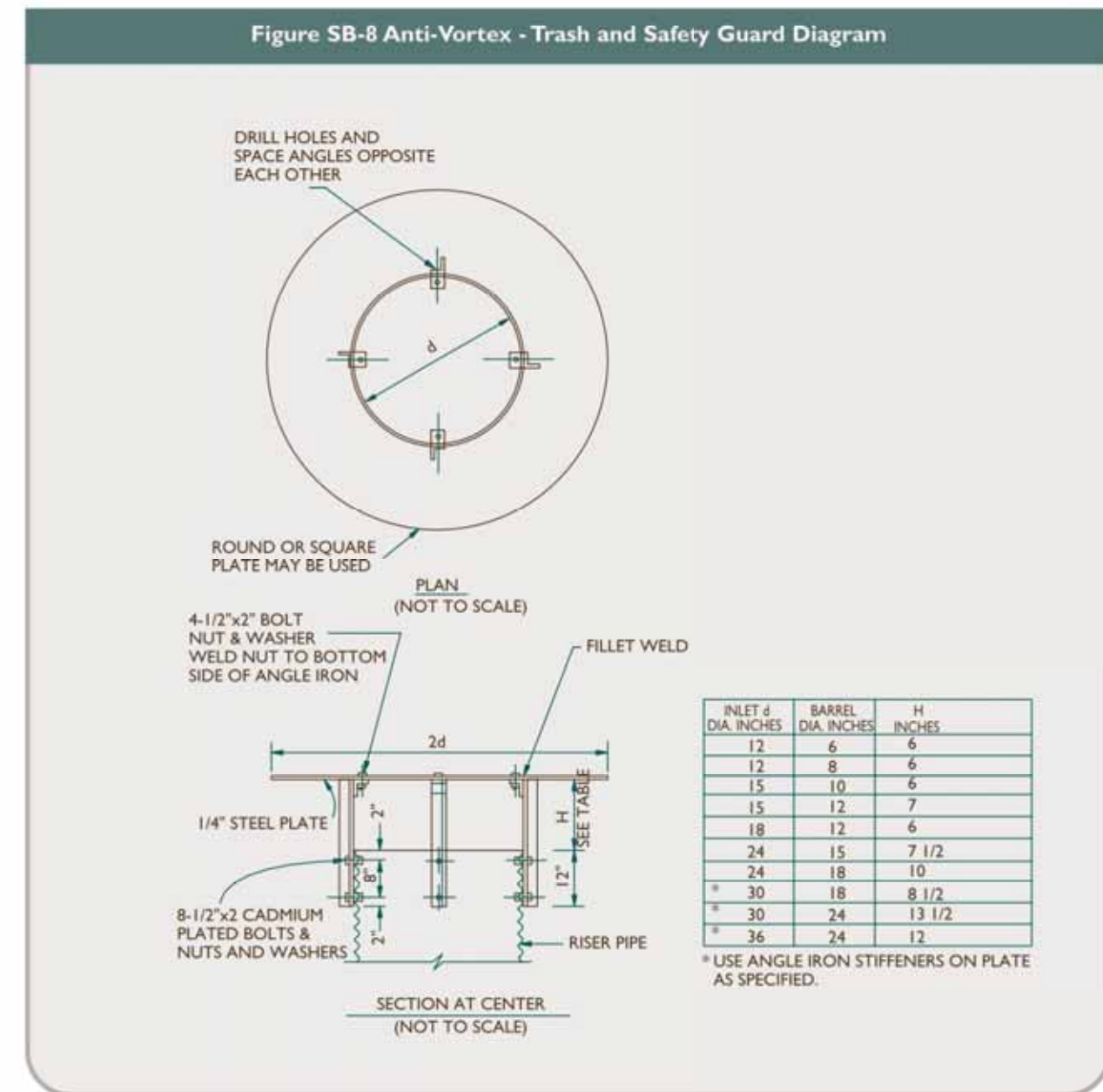
Know what's below. Call before you dig.



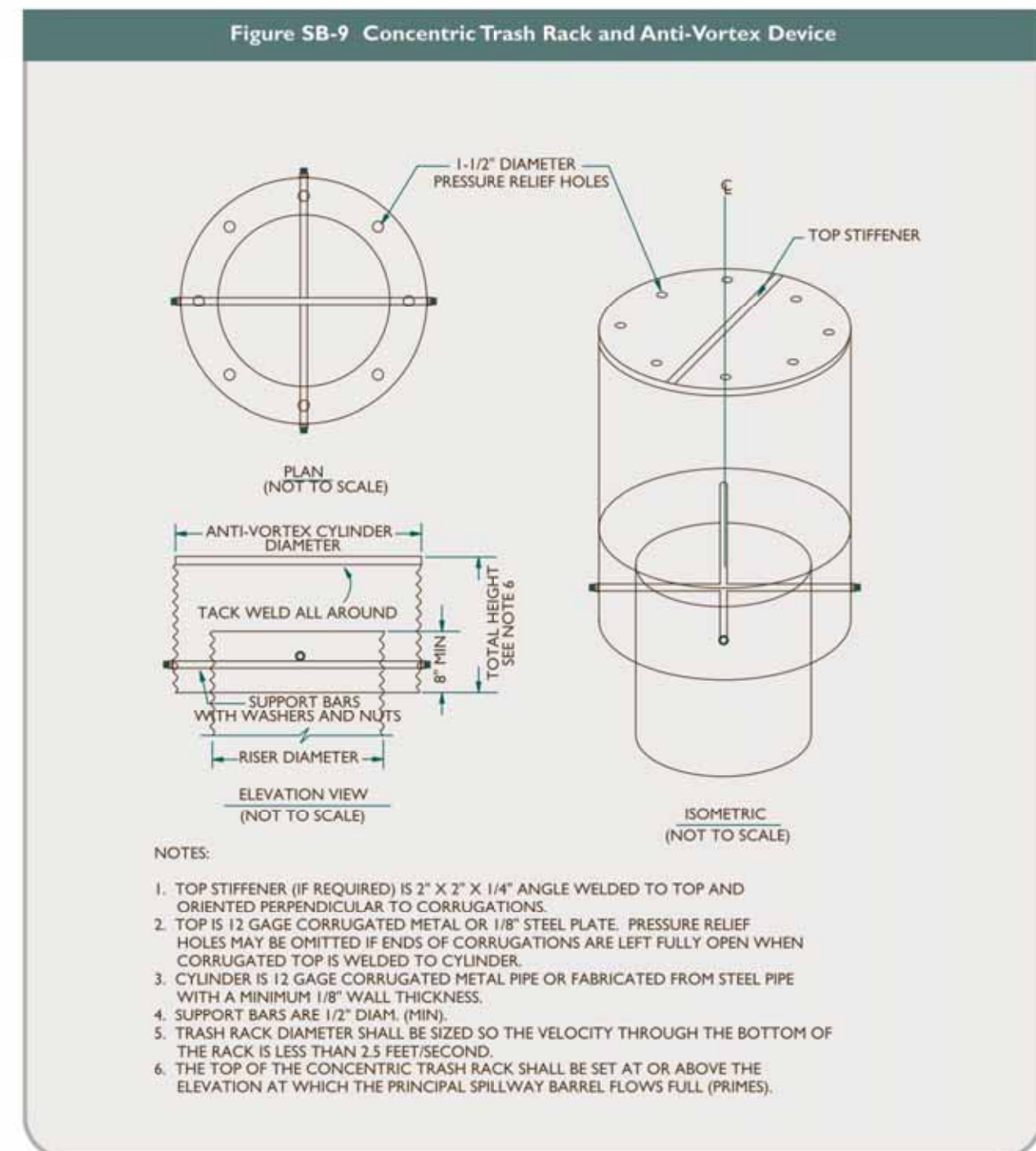
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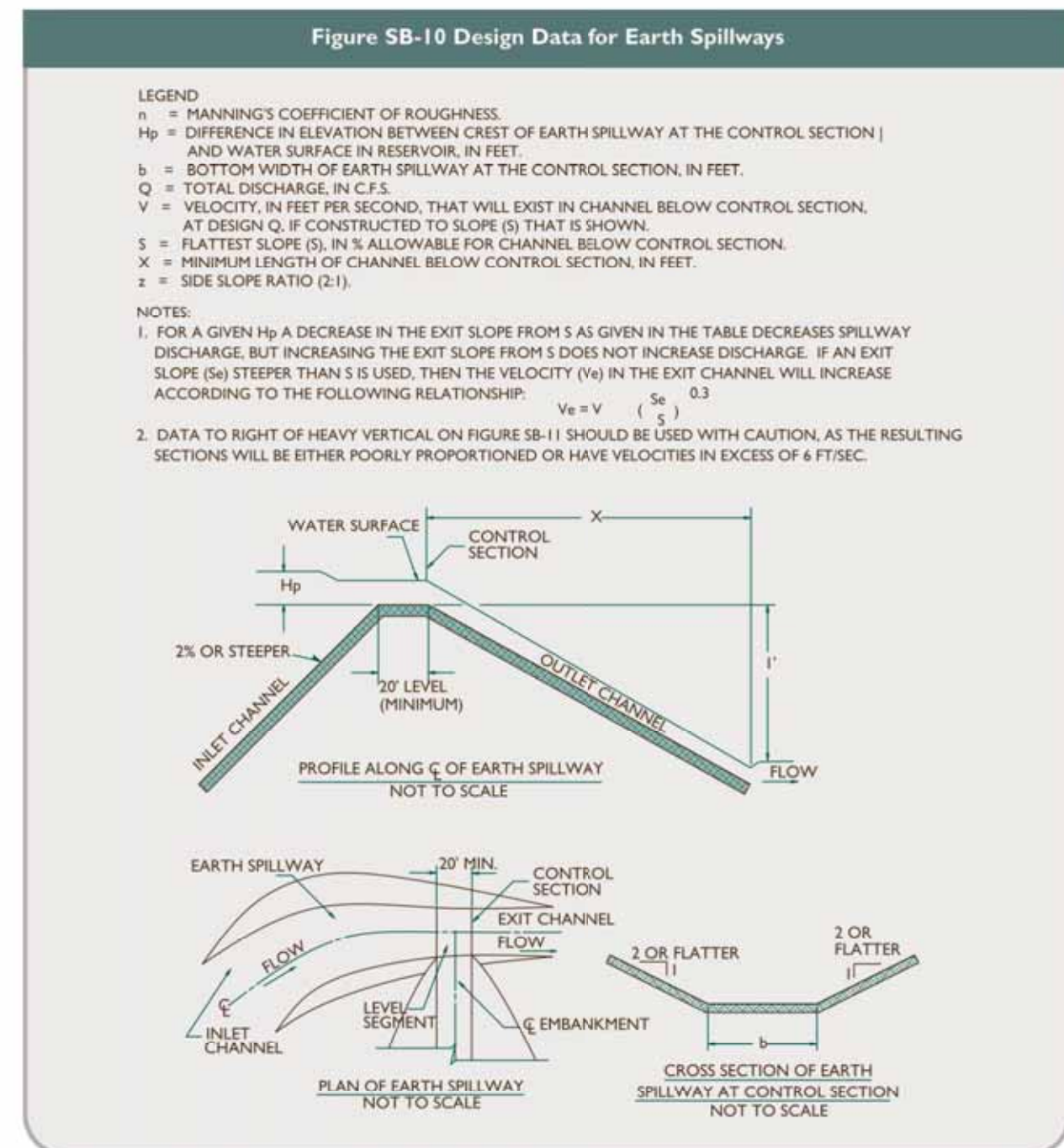
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II- Sediment Impoundments, Barriers and Filters

Hay Bale Barrier (HB)

Definition

A temporary sediment barrier consisting of a row of entrenched and anchored bales of hay or straw.

Purpose

- To intercept and detain small amounts of sediment from small disturbed areas.
- To decrease the velocity of sheet flows.
- To redirect small volumes of water away from erodible soils.
- To settle and assist in filtering waters discharged from pumping operations (see **Pumping Settling Basin** measure, Type I and Type II).

Applicability

- Below small disturbed areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size.
- Above disturbed slopes to direct surface water away from erodible areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size.
- Where protection and effectiveness is required for less than 3 months.
- Where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas.
- Not for use in drainageways, except in special cases where it is applied with other measures (see **Geotextile Silt Fence** and **Stone Check Dams** Special Cases).
- Not intended for use in streams.

Planning Considerations

See Planning Considerations for Sediment Impoundments, Barriers and Filters Function Group.

Specifications

Materials

Hay Bales shall be made of hay or straw with 40 pounds minimum weight and 120 pounds maximum weight held together by twine or wire.

Stakes for Anchoring Hay Bales: shall be a minimum of 36 inches long and made of either hardwood with dimensions of at least 1.5 inches square or steel posts with a minimum weight of 0.5 pound per linear foot.

Placement on the Landscape

Contributing drainage area is no greater than 1 acre. Maximum slope length is as shown in **Figure HB-1**.

Toe of Slope: Locate 5-10 feet down gradient from the toe of slope (see **Figure HB-2**), generally on the contour. When the contour can not be followed, stagger the bale installation and install perpendicular wings spaced as shown in **Figure HB-1** to break the velocity of water flowing behind the bales. The barrier should be located with

sufficient distance from the toe of the slope to allow access by equipment for removal of accumulated sediments

Swales: Not recommended. See **Geotextile Silt Fence** or **Stone Check Dam** measures.

Catch Basins in Swales on Slopes: Not recommended. See **Geotextile Silt Fence** or **Stone Check Dam** measures.

Catch Basins in Depressions or Low Spots (yard drains): Encircle catchbasin (see **Figure HB-3**).

Culvert Inlets: Not recommended. See **Geotextile Silt Fence** measure.

Culvert Outlets: Not recommended. Use **Temporary Sediment Trap** and/or **Stone Check Dam** measures.

Pumping Settling Basin: See **Pumping Settling Basin** measure.

Installation (see **Figure HB-2**)

Trench excavation: Excavate a trench as wide as the bales and at least 4 inches deep. Each end of the trench should be winged upslope so that the bottom of the last bale is higher than the top of the lowest hay bale in the barrier.

Figure HB-1 Hay Bale Design Slope/Length Limitations

| Slope Steepness ¹ | Slope Length and Wing Spacing |
|------------------------------|-------------------------------|
| 5:1 or shallower | 100 feet |
| 3:1 to 5:1 | 75 feet |
| 2:1 to 3:1 | 50 feet |

¹Where the gradient changes through the drainage area the steepest slope section shall be used.

Hay Bale Placement: Place bales in a single row in the trench, lengthwise, with ends of adjacent bales tightly abutting one another and the bindings oriented around the sides rather than along the tops and bottoms of the bales (to avoid premature rotting of the bindings).

Staking Hay Bales: Anchor each bale with at least 2 stakes, driving the first stake in each bale toward the previously laid bale to force the bales together. Stakes must be driven a minimum of 18 inches into the ground. Fill any gaps between the bales with hay or straw to prevent water from escaping between the bales.

Backfill & Tamp: Backfill the bales with the excavated trench material to a minimum depth of 4 inches on the uphill side of the bales. Tamp by hand or machine and compact the soil. Loose hay or straw scattered over the disturbed area immediately uphill from the hay bale barrier tends to increase barrier efficiency.

Substitute Measures

Geotextile Silt Fence may be used as a substitute. When frozen or other similar ground conditions prevent the proper trenching or anchoring of hay bales, a sediment barrier consisting of a stone check dam with a hay bale core may be substituted for the hay bale barrier. See **Stone Check Dam** measure, "Special Case Combinations for Added Filtration & Frozen Ground Conditions" for details.

Maintenance

Inspect the hay bale barrier at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs. For dewatering operations, inspect frequently before, during, and after pumping operations.

Remove the sediment deposits or install a secondary barrier upslope from the existing barrier when sediment deposits reach approximately one half the height of the barrier (see **Figure HB-4**).

Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:

- the barrier has been overtopped, undercut or bypassed by runoff water.
- the barrier has been moved out of position, or
- the hay bales have deteriorated or been damaged.

When repetitive failures occur at the same location, review conditions and limitations for use and determine if additional controls (e.g. temporary stabilization of contributing area, diversions, stone barriers) are needed to reduce failure rate or replace hay bale barrier. See **Figure HB-5** for trouble shooting failures.

Maintain the hay bale barrier until the contributing area is stabilized.

After the upslope areas have been permanently stabilized, pull the stakes out of the hay bales. Unless otherwise required, no removal or regrading of accumulated sediment is necessary. The hay bales may then be left in place or broken up for ground cover.

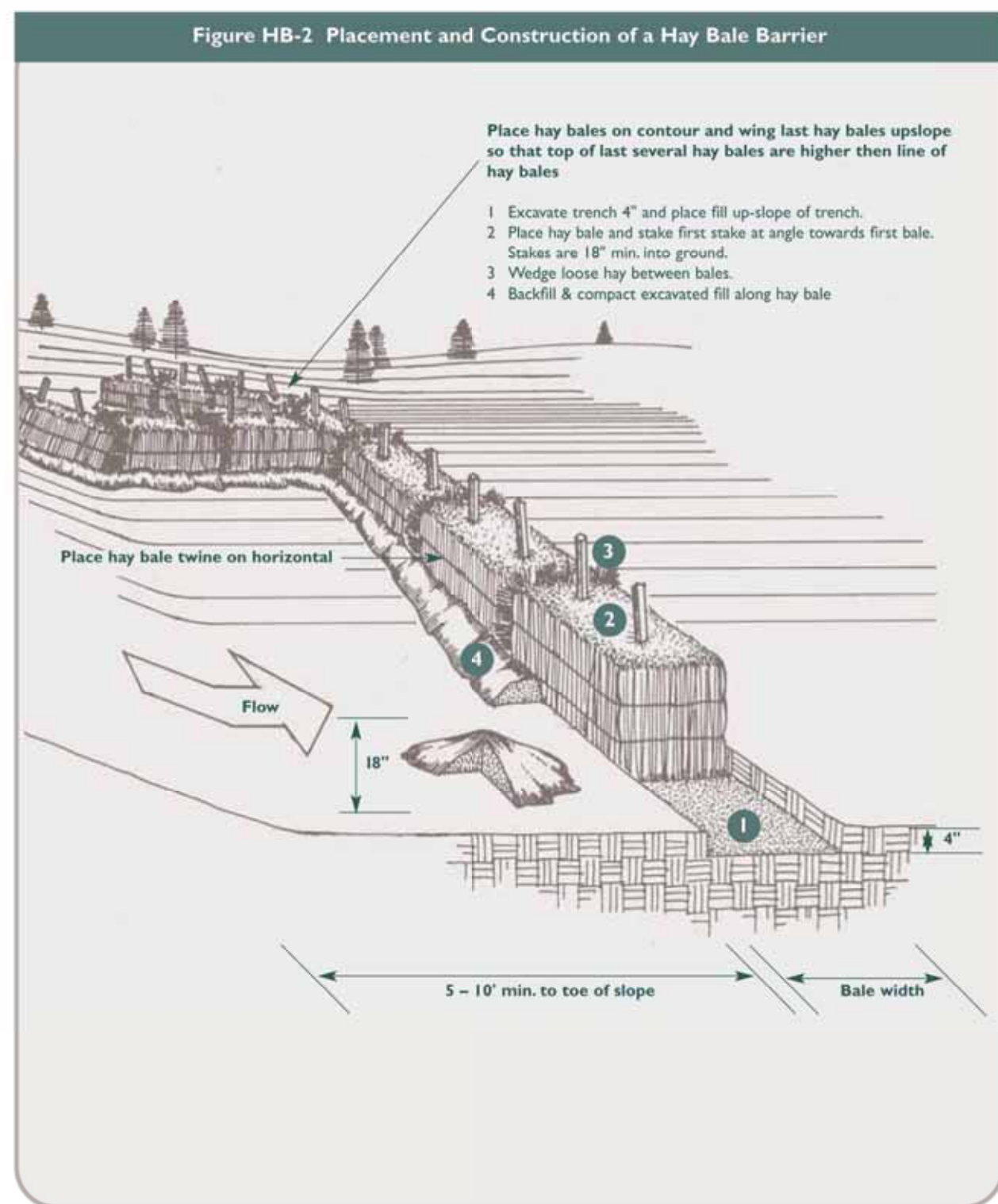
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Hay Bale Barrier (HB)

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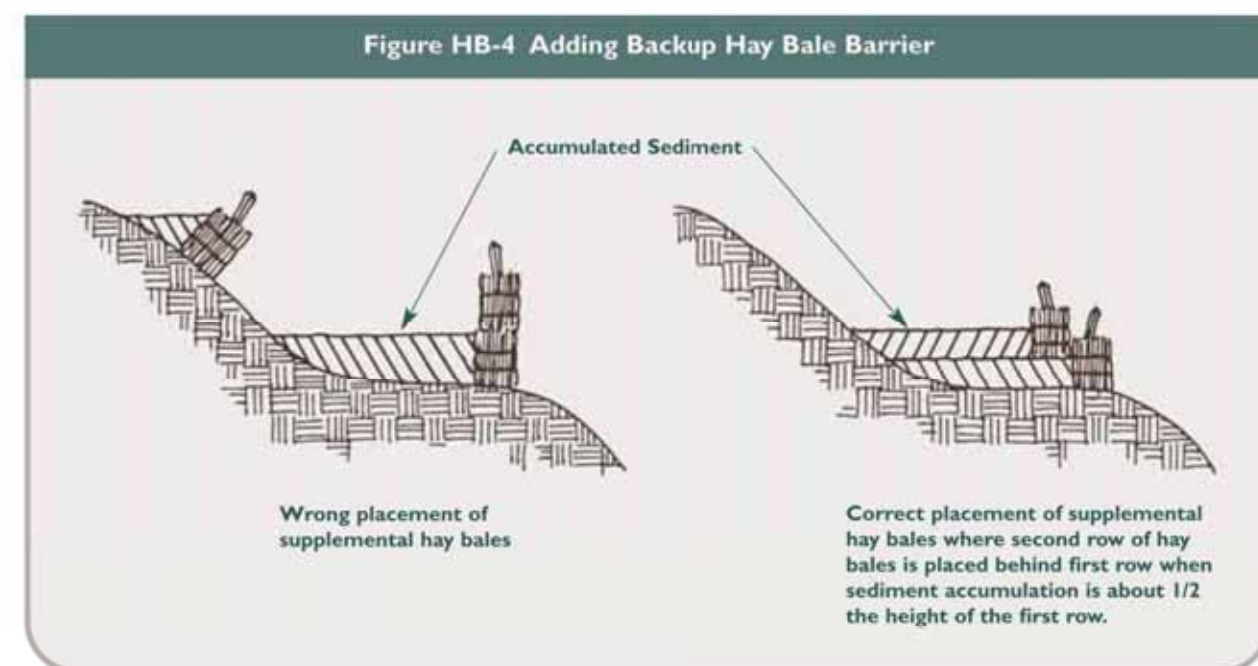


Figure HB-5 Hay Bale Barrier Trouble Shooting Guide

| Problem | Cause | Fix |
|--------------|----------------------|--|
| undercutting | inadequate trenching | reset bales properly or for small failure backfill downslope rills, fill & compact under failing bale, fill joints with hay, backfill up slope side of bale with 4\"/> |

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Hay Bale Barrier (HB)

Hay Bale Barrier (HB)

4-Short Term Non-living Soil Protection

Temporary Erosion Control Blanket (ECB)

Definition

A manufactured blanket composed of biodegradable / photodegradable natural or polymer fibers and/or filaments that have been mechanically, structurally or chemically bound together to form a continuous matrix.

Purpose

To provide temporary surface protection to newly seeded and/or disturbed soils to absorb raindrop impact and to reduce sheet and rill erosion and to enhance the establishment of vegetation.

Applicability

- On disturbed soils where slopes are 2:1 or flatter.
- Where wind and traffic generated air flow may dilodge standard, unmowed mulches.
- May be used as a substitute for **Temporary Soil Protection**.
- May be used as a substitute for **Mulch for Seed**.

Planning Considerations

When considering the use of ECB keep in mind the blanket's capability to conform to ground surface irregularities. If the blanket is not capable of developing a continuous contact with the soil then it must be applied to a fine graded surface. Some blankets will soften and when wetted conform to the ground. Also, when the ground is frozen, proper anchoring can be difficult, if not impossible.

Care must be taken to choose the type of blanket which is most appropriate for the specific need of the project. With the abundance of erosion control blankets available, it is impossible to cover all of the advantages, disadvantages and specifications of all manufactured blankets. There is no substitute for a thorough understanding of the manufacturer's instructions and recommendations in conjunction with a site visit by the erosion and sedimentation plan designer prior to and during installation to verify a product's appropriateness.

The success of temporary erosion control blankets is dependent upon strict adherence to the manufacturer's installation recommendations. As such, a final inspection should be planned to ensure that the lap joints are secure, all edges are properly anchored and all staking/stapling patterns follow the manufacturer's recommendations.

Specifications

Materials

Temporary erosion control blankets shall be composed of fibers and/or filaments that:

- are biodegradable or photodegradable within two years but without substantial degradation over the period of intended usage (five months maximum).
- are mechanically, structurally or chemically bound together to form a continuous matrix of even thickness and distribution that resist raindrop splash and when used with seedlings allows vegetation to penetrate the blanket.
- are of sufficient structural strength to withstand stretching or movement by wind or water when installed in accordance with the manufacturer's recommendations.
- are free of any substance toxic to plant growth and unprotected human skin or which interferes with seed germination.
- contain no contaminants that pollute the air or waters of the State when properly applied, and

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- provide either 80%-95% soil coverage when used as a substitute for **Mulch for Seed** or 100% initial soil coverage when used as a substitute for **Temporary Soil Protection** measure.

Materials shall be selected as appropriate for the specific site conditions in accordance with manufacturer's recommendations. Use of any particular temporary erosion control blanket should be supported by manufacturer's test data that confirms the blanket meets these material specifications and will provide the short term erosion control capabilities necessary for the specific project.

Site Preparation and Installation

Prepare the surface, remove protruding objects and install temporary erosion control blankets in accordance with the manufacturer's recommendations. Ensure that the orientation and anchoring of the blanket is appropriate for the site.

The blanket can be laid over areas where sprigged grass seedlings have been inserted into the soil. Where landscape plantings are planned, lay the blanket first and then plant through the blanket in accordance with Landscape Planting measure.

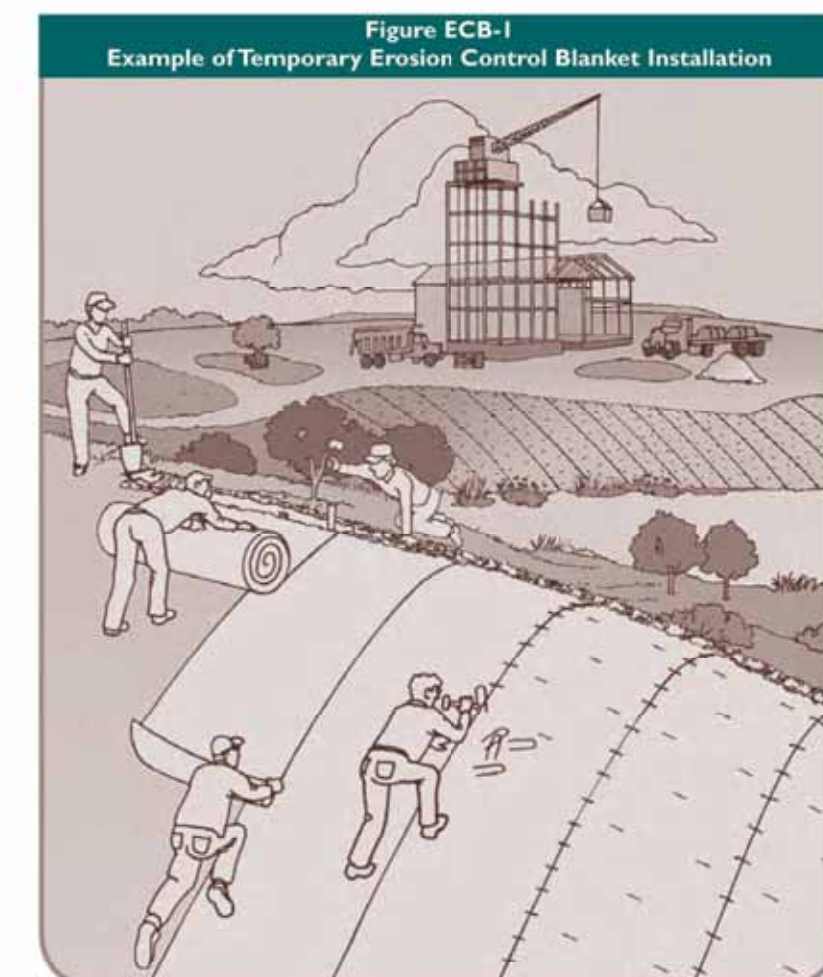
Inspect the installation to insure that all lap joints are secure, all edges are properly anchored and all staking or stapling patterns follow manufacturer's recommendations.

Maintenance

Inspect temporary erosion control blankets at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. Blanket failure has occurred when (1) soils and/or seed have washed away from beneath the blanket and the soil surface can be expected to erode at an accelerated rate, and/or (2) the blanket has become dislodged from the soil surface or is torn.

If washouts or breakouts occur, re-install the blanket after regrading and re-seeding, ensuring that blanket installation still meets design specifications. When repetitive failures occur at the same location, review conditions and limitations for use and determine if diversions, stone check dams or other measures are needed to reduce failure rate.

Repair any dislodged or failed blankets immediately. When used as a substitute for **Mulch for Seed**, continue to inspect as required by the seeding measure. When used as a substitute for **Temporary Soil Protection**, continue to inspect until it is replaced by other erosion control measures or until work resumes.



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Temporary Erosion Control Blanket (ECB)



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NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

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PROJECT #: **20200309_CT**
DRAWN BY: **MMM**
CHECKED BY: **DRG**

TITLE: **EROSION & SEDIMENT CONTROL DETAILS**

SHEET: **ESC-308**



- GENERAL STRUCTURAL NOTES:
- THE WORDS "THE ENGINEER" AND "GEOR" AS USED IN THESE NOTES REFER TO THE CIVIL ENGINEER OF RECORD AND SIERRA OVERHEAD ANALYTICS, INC.
 - GENERAL CONTRACTORS SHALL BE FAMILIAR WITH ALL EXISTING SITE CONDITIONS AND DESIGN DOCUMENTS PROVIDED BY THE VARIOUS DESIGN PROFESSIONALS INVOLVED WITH THIS PROJECT.
 - GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND SPATIAL RELATIONSHIPS SHOWN ON THESE DRAWINGS. ANY DISCREPANCIES, CONFLICTS, OR OMISSIONS FOUND SHALL BE REPORTED TO THE ENGINEER AND OTHER DESIGN PROFESSIONALS AS APPROPRIATE FOR RESOLUTION PRIOR TO PROCEEDING WITH ANY WORK ON THE PROJECT.
 - ALL WORK SHALL COMPLY WITH THE CONNECTICUT STATE BUILDING CODE AND THE INTERNATIONAL BUILDING CODE, 2018 EDITION AND ALL FEDERAL, STATE, AND LOCAL CODES.
 - ANY TESTING OR INSPECTIONS REQUIRED BY BUILDING OFFICIALS, PROJECT DRAWINGS, OR SPECIFICATIONS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY.
 - SITE VISITS AND OBSERVATIONS CONDUCTED BY THE ENGINEER SHALL NEITHER BE CONSTRUED AS INSPECTIONS NOR APPROVAL OF CONSTRUCTION.
 - GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH O.S.H.A. STANDARDS.
 - GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR BRACING AND SHORING ALL EXCAVATIONS, DEWATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUNDWATER, OR SEEPAGE, TEMPORARY AND EXISTING STRUCTURES, AND PARTIALLY COMPLETED PORTIONS OF THE WORK TO ASSURE THE SAFETY OF ANY PERSONS COMING IN CONTACT WITH THE WORK.
 - ALL CT BUILDING CODES AND ASTM INTERNATIONAL (ASTM) SPECIFICATIONS NOTED ON THE DRAWINGS SHALL BE AMENDED TO DATE.
 - UNLESS AS CALLED OUT AS "EXISTING" OR "NOT-IN-CONTRACT", EVERYTHING SHOWN ON THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED AS PART OF THE WORK OF THE PROJECT.
 - GENERAL CONTRACTOR SHALL REVIEW ALL SUBMITTALS, INCLUDING SHOP DRAWINGS, AND VERIFY CORRECTNESS PRIOR TO SUBMISSION TO THE ENGINEER.

- STRUCTURAL STEEL NOTES:
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
 - ALL STRUCTURAL WIDE FLANGE BEAMS, GIRDERS, AND COLUMNS SHALL CONFORM TO ASTM A992 (Fy = 50 KSI).
 - STEEL PIPE COLUMNS SHALL CONFORM TO ASTM A501 (Fy = 36 KSI) OR ASTM A53, TYPE E OR S, GRADE B (Fy = 35 KSI).
 - STRUCTURAL STEEL TUBE SHALL CONFORM TO ASTM A501, GRADE B (Fy = 46 KSI).
 - BOLTS SHALL CONFORM TO ASTM A325, UNLESS OTHERWISE NOTED.
 - DIAMETER OF BOLT HOLES IN STEEL SHALL BE 1/16" LARGER THAN THE BOLT SIZE, UNLESS OTHERWISE NOTED.
 - ALL WELDS SHALL BE IN CONFORMANCE WITH THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY. ALL STRUCTURAL WELDING SHALL USE THE SHIELDED METAL ARC WELDING PROCESS WITH E70XXX ELECTRODES. USE LOW HYDROGEN ELECTRODES FOR BOLTS AND REINFORCING BARS.
 - SHOP WELDING SHALL BE PERFORMED IN APPROVED FABRICATORS SHOP PER IBC SECTION 1704.1.
 - ANCHOR BOTS AND THREADED RODS SHALL CONFORM TO EITHER ASTM A307 OR A36 UNLESS OTHERWISE NOTED.
 - FABRICATION AND ERECTION SHALL COMPLY WITH AISC SPECIFICATIONS, AS REVISED TO DATE.
 - SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION.
 - CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND COORDINATE ANY CONFLICTS BEFORE PROCEEDING.
 - TORQUE TUBES, IF USED, SHALL BE PLACED WITH MILL CAMBER UPWARD.

- FOUNDATION NOTES:
- FOUNDATION DESIGN IS BASED ON SOIL BEARING PRESSURE OF 2,500 PSF FOR "DEAD" PLUS "LONG TERM LIVE" LOADS. SEE GEOTECHNICAL REPORT.
 - FOOTING SHALL BEAR ON APPROPRIATE SOIL AS DESCRIBER IN THE GEOTECH REPORT.
 - ALL EXCAVATION AND FILL BENEATH FOUNDATIONS SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER OF RECORD (GEOR) OR THEIR AUTHORIZED REPRESENTATIVE.
 - SHOULD ANY SUBSURFACE CONDITION NOT BE IN ACCORDANCE WITH THE GEOTECH REPORT, THE GEOR SHALL BE NOTIFIED IMMEDIATELY FOR RESOLUTION PRIOR TO CONTINUING WORK.

- DESIGN CRITERIA NOTES:
29. DESIGN CODES:
- NORTH STONINGTON ORDINANCE
 - CONNECTICUT STATE BUILDING CODE
 - CONNECTICUT GENERAL STATUTES
 - INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION.
 - ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
 - AMERICAN CONCRETE INSTITUTE (ACI) 318-14

RISK CATEGORY: I
SEISMIC DESIGN CATEGORY: B
SITE CLASS: C - PER GEOTECH
Ss: 0.16
S1: 0.052
Sds: 0.12
Sd1: 0.11

GROUND SNOW LOAD: 30 PSF
SNOW LOAD IMPORTANCE FACTOR: 1.0
ULTIMATE DESIGN WIND SPEED (Vult): 135 MPH
NOMINAL DESIGN WIND SPEED (Vasd): 105 MPH

WIND EXPOSURE CATAGORY: C
WIND IMPORTANCE FACTOR (Iw): 1.0
FROST DEPTH: 42" BELOW EXISTING GROUND SURFACE

- CONCRETE NOTES:
- CONCRETE SHALL BE REGULAR WEIGHT WITH HARDROCK AGGREGATES, U.N.O.
 - CEMENT SHALL CONFORM TO ASTM C-150 TYPE II.
 - AGGREGATES SHALL CONFORM TO ASTM C-33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN -0.04%.
 - CONCRETE SHALL BE READY MIXED PER ASTM C-94.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING CONCRETE MIX DESIGNS WHICH CONFORM TO THE CLASS AND STRENGTH REQUIREMENTS.
 - GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE MIX DESIGN TO THE ENGINEER FOR APPROVAL PRIOR TO CONCRETE PLACEMENT.
 - CONCRETE CLASS AND STRENGTH SHALL BE NOTED AS FOLLOWS:

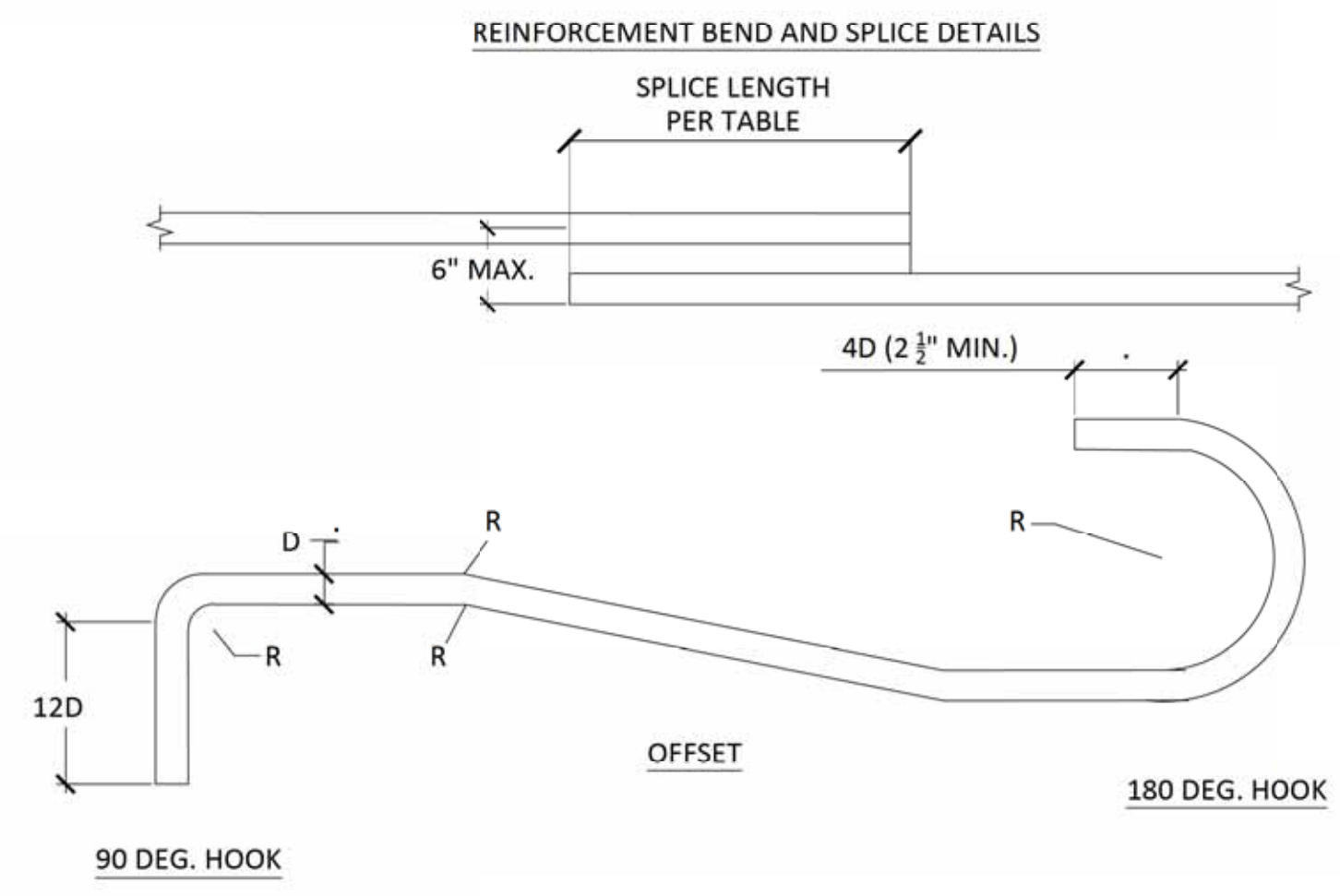
| CONCRETE CLASS | SLAB ON GRADE |
|-----------------------------|---------------|
| MAXIMUM AGGREGATE SIZE | 1" |
| AIR ENTRAINMENT | 6% +/-1.5% |
| MINIMUM SACKS PER YARD | 5.0 |
| MAXIMUM WATER/CEMENT RATIO | 0.45 |
| SLUMP | 4" +/-0.5" |
| 28 DAY COMPRESSIVE STRENGTH | 4,000 PSI |

- ONLY ONE CLASS AND STRENGTH OF CONCRETE SHALL BE POURED ON THE PROJECT AT ONE TIME.
- CONCRETE SHALL BE TESTED IN ACCORDANCE WITH IBC SECTION 1704.
- ALL REINFORCING STEEL, ANCHOR BOLTS AND SLEEVES SHALL BE PLACED AND SECURED IN POSITION PRIOR TO POURING CONCRETE.
- CURE ALL EXPOSED CONCRETE SURFACES WITH LIQUID MEMBRANE-FORMING CURING COMPOUND CONFORMING TO ASTM C309, TYPE 1, CLASS A OR OTHER APPROVED CURING METHOD.
- APPLY CURING COMPOUND IMMEDIATELY AFTER PLACING CONCRETE.
- WHERE CONCRETE PLACEMENT OCCURS IN TEMPERATURES OVER 90 DEGREES OR IN WINDY CONDITIONS, GENERAL CONTRACTOR SHALL TAKE ADDITIONAL MEASURES TO ENSURE PROPER CONCRETE CURING.
- RE-APPLY CURING COMPOUND TO CONTROL JOINTS WHEN CONTROL JOINT SAW-CUTTING OCCURS AFTER APPLICATION OF CURING COMPOUND.
- FOR COLD WEATHER CONCRETE PLACEMENT, PERFORM IN ACCORDANCE WITH ACI 318-14, SECTION 26.5.4
- FOR HOT WEATHER CONCRETE PLACEMENT, PERFORM IN ACCORDANCE WITH ACI 318-14, SECTION 26.5.5.
- IF PLACEMENT OF CONCRETE OCCURS DURING HOT WEATHER CONDITIONS, REINFORCING STEEL SHALL BE KEPT COOL DURING CONCRETE PLACEMENT.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR FILLING AND REPAIRING CRACKS AS DETERMINED BY THE ENGINEER OR THEIR REPRESENTATIVE.

- SPECIAL INSPECTIONS:
- PROVIDE SPECIAL INSPECTION OF THE ITEMS LISTED IN THE TABLE BELOW IN ACCORDANCE WITH IBC CHAPTER 17.
 - SPECIAL INSPECTIONS SHALL BE OBJECTIVE, COMPETENT AND INDEPENDENT FROM THE CONTRACTOR RESPONSIBLE FOR THE WORK BEING INSPECTED.
 - SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER.

| LIST OF SPECIAL INSPECTIONS FOR EACH STRUCTURAL PAD | | |
|---|----------|------------|
| | PERIODIC | CONTINUOUS |
| 1. CONCRETE CONSTRUCTION | | |
| A. INSPECTION OF RE-INFORCING STEEL AND PLACEMENT | X | |
| B. INSPECTION OF ANCHORS POST INSTALLED IN HARDENED CONCRETE MEMBERS | X | |
| C. VERIFY USE OF REQUIRED MIX DESIGN | X | |
| D. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE FOR CONCRETE | X | |
| 2. INSPECTION OF SOILS | | |
| A. VERIFY MATERIALS BELOW CONCRETE PAD FOUNDATION ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY | X | |
| B. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL BELOW ALL CONCRETE PADS | X | |
| C. PRIOR TO PLACEMENT OF COMPACTED FILL OBSERVE SUBGRADE AND VERIFY EXISTING CONDITION IS AS DESCRIBED IN THE SOILS REPORT | X | |

- REINFORCING STEEL NOTES:
- ALL REINFORCING STEEL SHALL BE AS FOLLOWS:
 - NO.3 BARS AND SMALLER - ASTM A615, GRADE 60
 - NO. 4 BARS AND LARGER - ASTM A615, GRADE 60
 - REINFORCING STEEL TO BE WELDED - ASTM A706, GRADE 60
 - WELDED WIRE FABRIC - ASTM A185
 - ALL BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND.
 - ALL BENDS SHALL BE MADE COLD.
 - SPLICING OF BARS SHALL HAVE MINIMUM LAP PER DETAIL BELOW IN ALL CASES UNLESS DIMENSIONED OTHERWISE ON DETAILS.



| BAR SIZE | LAP LENGTH |
|----------|------------|
| #3 | 18" |
| #4 | 23" |
| #5 | 29" |
| #6 | 35" |
| #7 | 50" |
| #8 | 57" |
| #9 | 55" |

D = DIAMETER OF BAR
R = RADIUS OF BEND MEASURED ON THE INSIDE OF BAR
= 2 1/2 D FOR #2 ONLY
= 3D FOR #3 THROUGH #8
= 4D FOR #9 THROUGH #11
= 5D FOR #14 & #18

- ALL REINFORCEMENT BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING GROUT.
- MINIMUM LAP FOR WELDED WIRE FABRIC SHALL BE 1.5 MESH.
- WELDING OF REINFORCING STEEL SHALL COMPLY WITH AWS D1.4-79, USING HYDROGEN ELECTRODES.
- SPACING OF BARS SHALL BE CONSIDERED AS MAXIMUM SPACING.



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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
**ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W**

SEAL: DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

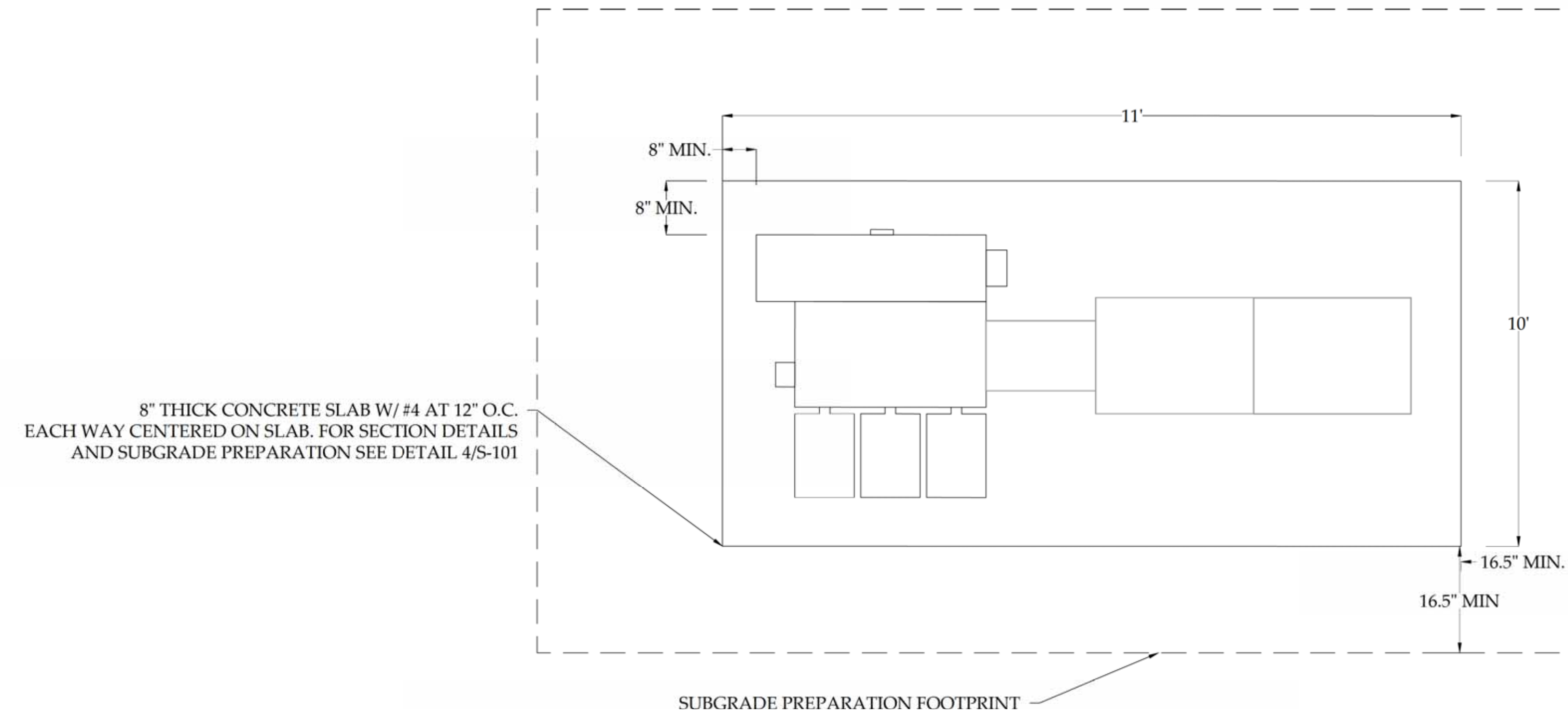
TITLE:
STRUCTURAL NOTES

SHEET:
S-100



EQUIPMENT NOTES:

- EQUIPMENT LOCATIONS DEPICTED ON THIS DETAIL ARE APPROXIMATE. REFER TO ELECTRICAL SHEETS FOR EXACT LOCATIONS.
- FRONT OF EQUIPMENT SHALL FACE ROAD.
- SEE ELECTRICAL PLANS FOR SLAB PENETRATION LOCATIONS.
- PROVIDE 6" MIN. SLACK IN ALL CONDUCTORS AND WIRES TO ACCOUNT FOR SLAB MOVEMENT.



8" THICK CONCRETE SLAB W/ #4 AT 12" O.C. EACH WAY CENTERED ON SLAB. FOR SECTION DETAILS AND SUBGRADE PREPARATION SEE DETAIL 4/S-101

SUBGRADE PREPARATION FOOTPRINT

1 EQUIPMENT PAD DETAIL, TYP.
S-200 Scale: NTS

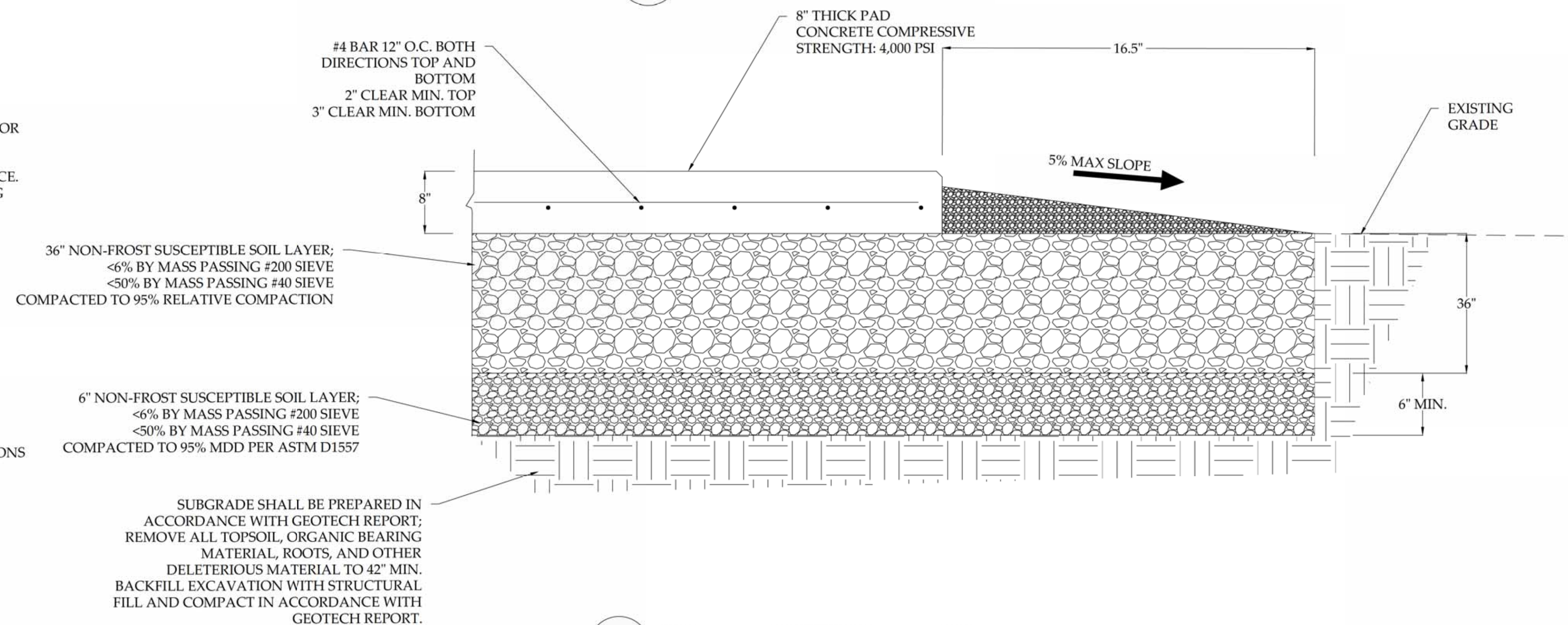
EQUIPMENT PAD CONSTRUCTION NOTES:

- PRIOR TO FORMING AND POURING ANY AND ALL CONCRETE PADS AND FOUNDATIONS, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PAD DIMENSIONS AND PROVIDE FINAL EQUIPMENT DETAILS TO THE ENGINEER FOR APPROVAL.
- CONTRACTOR SHALL SEAL ALL CONDUITS AFTER CONDUCTORS ARE IN PLACE. FILL VOIDS AROUND STUB UPS WITH CONCRETE FLUSH WITH SURROUNDING GRADE.

| EQUIPMENT ANCHORAGE SCHEDULE | | |
|------------------------------|--------------------|------------|
| ITEM | BOLT | EMBED (IN) |
| TURNKEY INVERTER | HDA-P M10X100 / 20 | 4 |

- NOTE:
- PROVIDE 8" MINIMUM EDGE DISTANCE FROM ANCHORS TO ALL SLAB EDGES
 - ANCHORS SHALL BE UTILIZED IN MANUFACTURED PROVIDE MOUNTING LOCATIONS.
 - EMBED ESTIMATED THROUGH COMPARISON TO SIMILAR PADS AND LOCATIONS

2 EQUIPMENT ANCHORAGE
S-200 Scale: NTS



36" NON-FROST SUSCEPTIBLE SOIL LAYER;
<6% BY MASS PASSING #200 SIEVE
<50% BY MASS PASSING #40 SIEVE
COMPACTED TO 95% RELATIVE COMPACTION

6" NON-FROST SUSCEPTIBLE SOIL LAYER;
<6% BY MASS PASSING #200 SIEVE
<50% BY MASS PASSING #40 SIEVE
COMPACTED TO 95% MDD PER ASTM D1557

SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH GEOTECH REPORT; REMOVE ALL TOPSOIL, ORGANIC BEARING MATERIAL, ROOTS, AND OTHER DELETERIOUS MATERIAL TO 42" MIN. BACKFILL EXCAVATION WITH STRUCTURAL FILL AND COMPACT IN ACCORDANCE WITH GEOTECH REPORT.

3 EQUIPMENT PAD SECTION, TYP.
S-200 NTS

SUBGRADE PREPARATION NOTES:

- ALL WORK SHALL ADHERE TO THE FOLLOWING DOCUMENTS:
 - SEI/ASCE 32-01 (OR CURRENT) DESIGN AND CONSTRUCTION OF FROST-PROTECTED SHALLOW FOUNDATIONS.
- NON-FROST SUSCEPTIBLE SOIL IS DEFINED AS A SOIL THAT DOES NOT DISPLAY SIGNIFICANT DETRIMENTAL ICE SEGREGATION (I.E. ICE LENS DEVELOPMENT) DURING FREEZING. GENERALLY, GRANULAR SOILS WITH LESS THAN 6% BY MASS PASSING A #200 SIEVE (0.074 MM) HAVE LOW FROST SUSCEPTIBILITY, WHEREAS SILTS AND CLAYS OR SANDS AND GRAVELS (I.E. GRANULAR SOILS) WITH HIGH FINES CONTENT GENERALLY HAVE A MEDIUM TO HIGH FROST SUSCEPTIBILITY.
- CONTRACTOR SHALL SUBMIT NON-FROST SUSCEPTIBLE SOIL REPORT TO ENGINEER PRIOR TO INSTALLATION.
- SITE SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM EQUIPMENT PADS.
- HORIZONTAL INSULATION PLACED LESS THAN 12" BELOW GROUND SURFACE, OR ANY PORTION EXTENDING OUTWARD MORE THAN 24" FROM THE FOUNDATION EDGE, SHALL BE PROTECTED AGAINST DAMAGE FROM CONCRETE OR ASPHALT PAVEMENT ON THE GROUND SURFACE DIRECTLY ABOVE THE INSULATION BY CEMENTITIOUS BOARD OR PLYWOOD RATED FOR BELOW-GROUND USE, OR BY OTHER APPROVED MATERIALS PLACED DIRECTLY ON THE TOP SURFACE OF THE INSULATION.
- POLYSTYRENE INSULATION SHALL NOT BE EXPOSED TO PETROLEUM- BASED PRODUCTS.



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STONINGTON SOLAR PROJECT

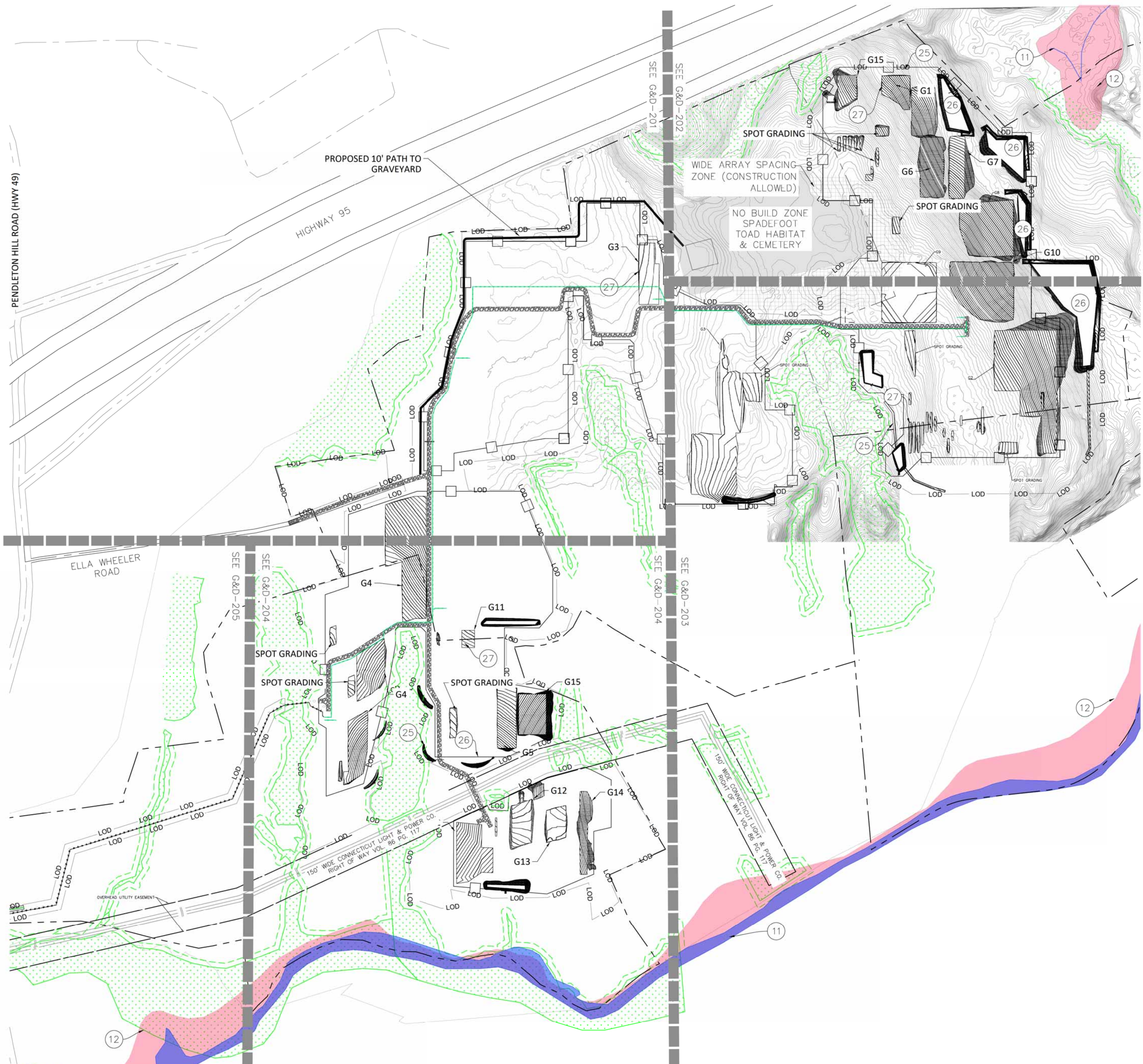
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ELLA WHEELER RD.
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41° 25' 9.71"N, 71° 50' 4.83"W

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|-------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
EQUIPMENT PAD DETAILS

SHEET:
S-200





LEGEND

| | | |
|----|--|-------------------------------|
| 6 | | PROPOSED SITE ACCESS ROAD |
| 7 | | WETLAND W/BUFFER |
| 8 | | SITE FENCE LINE |
| 9 | | SITE LIMIT OF DISTURBANCE |
| 10 | | SITE BOUNDARY |
| 11 | | RIVER OR CREEK |
| 12 | | 100 YEAR FLOOD ZONE |
| 25 | | STORMWATER FLOW CONTROL |
| 26 | | PERMANENT STORMWATER DRY POND |
| 27 | | GRADING AREA |
| | | 75 (E) MAJOR CONTOUR |
| | | 76 (E) MINOR CONTOUR |
| | | 75 (N) MAJOR CONTOUR |
| | | 76 (N) MINOR CONTOUR |

- GRADING AND DRAINAGE GENERAL NOTES:**
1. ARRAY NOT SHOWN FOR CLARITY.
 2. GRADING AREAS ARE BASED ON NEXT TRACKER RACKING WITH 5.5' MAXIMUM REVEAL POSTS.
 3. CUT & FILL FACTOR = 1
 4. ACCURACY OF FINAL GRADE VOLUMES, PILE REVEAL HEIGHTS, AND BILL OF MATERIAL TABLES IS BASED SOLELY ON ACCURACY OF TOPOGRAPHY PROVIDED BY OTHERS.
 5. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, VOLUMES, AND AREAS PRIOR TO CONSTRUCTION.

CUT & FILL ANALYSIS

| GRADING | CUT (YD ³) | FILL (YD ³) | BALANCE (YD ³) |
|--------------|------------------------|-------------------------|----------------------------|
| G1 | 393.69 | 481.76 | 88.07 FILL |
| G2 | 2,922 | 18,316.60 | 15,394.40 FILL |
| G3 | 4,622.30 | 1,924.70 | 2,697.59 CUT |
| G4 | 4,906.05 | 1,111.90 | 3,794.15 CUT |
| G5 | 2,630.54 | 85.98 | 2,544.56 CUT |
| G6 | 1,639.11 | 285.90 | 1,353.21 CUT |
| G7 | 1.81 | 4,607.49 | 4,606.18 FILL |
| G8 | 798.67 | 6,730.85 | 5,932.18 FILL |
| G9 | 333.34 | 6,229.86 | 5,896.22 FILL |
| G10 | 7,695.78 | 112.22 | 7,583.56 CUT |
| G11 | 136.88 | 1.15 | 135.73 CUT |
| G12 | 1,531.01 | 1,875.79 | 344.79 FILL |
| G13 | 845.11 | 2.54 | 842.57 CUT |
| G14 | 214.59 | 284.71 | 70.11 FILL |
| G15 | 1,696.43 | 3,919.03 | 2,222.60 FILL |
| BASINS | 24,725.48 | 9,666.25 | 15,059.23 CUT |
| SPOT GRADING | 1,286.28 | 2,366.23 | 1,079.95 FILL |
| ROADS | 2,422.19 | 1,356.62 | 1,065.57 CUT |
| TOTAL | 59,909.96 | 59,712.43 | 197.53 CUT |



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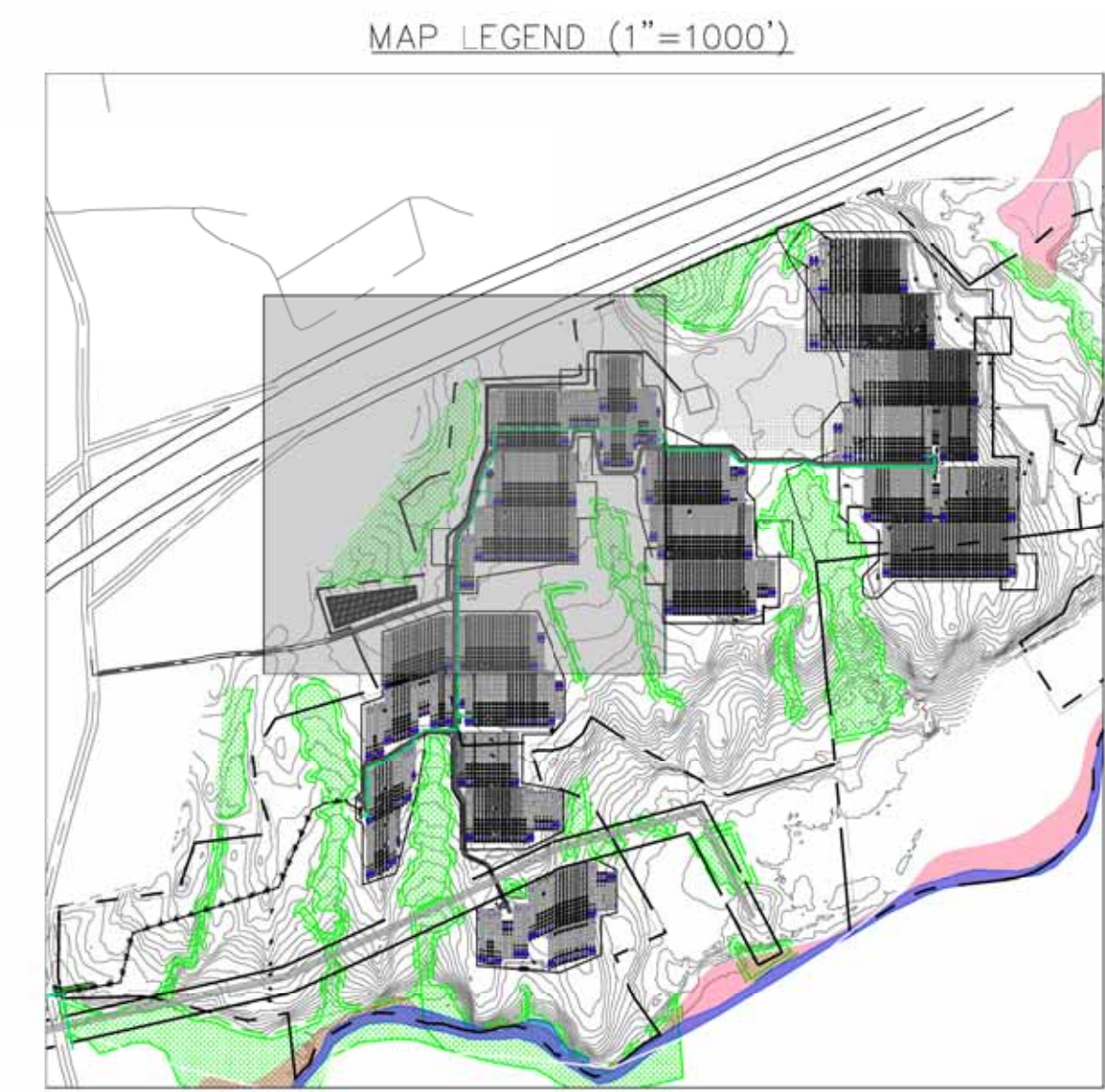
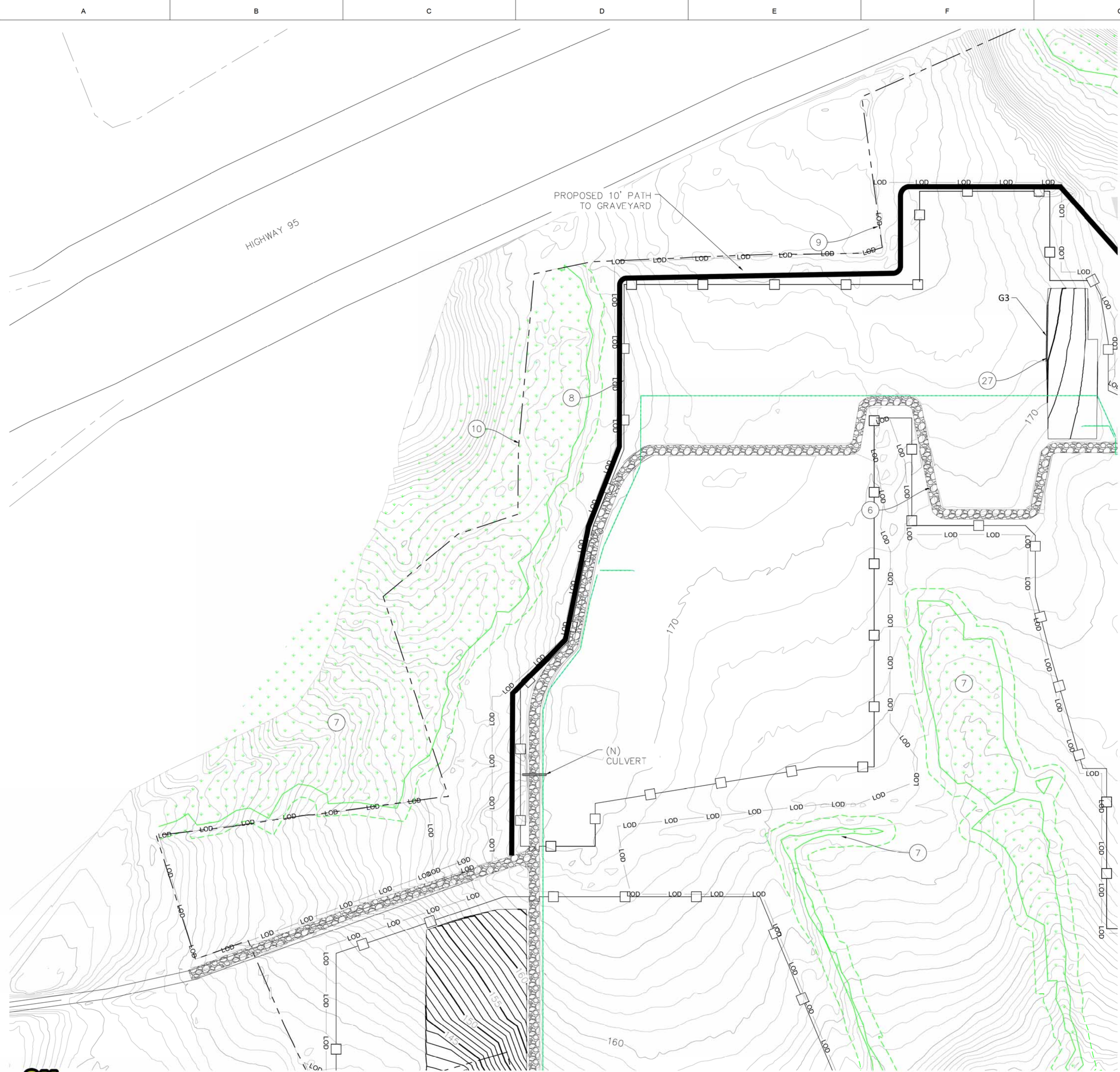


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PROJECT ADDRESS:
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 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

TITLE: GRADING & DRAINAGE SITE OVERVIEW
SHEET: G&D-200



LEGEND

| | |
|--------|---------------------------|
| 6 | PROPOSED SITE ACCESS ROAD |
| 7 | WETLAND W/BUFFER |
| 8 | SITE FENCE LINE |
| 9 | SITE LIMIT OF DISTURBANCE |
| 10 | SITE BOUNDARY |
| 11 | RIVER OR CREEK |
| 12 | 100 YEAR FLOOD ZONE |
| 27 | GRADING AREA |
| — 75 — | (E) MAJOR CONTOUR |
| — 76 — | (E) MINOR CONTOUR |
| — 75 — | (N) MAJOR CONTOUR |
| — 76 — | (N) MINOR CONTOUR |

GRADING AND DRAINAGE GENERAL NOTES:

1. ARRAY NOT SHOWN FOR CLARITY
2. GRADING AREAS ARE BASED ON NEXT TRACKER RACKING WITH 5.5' MAXIMUM REVEAL POSTS.
3. ACCURACY OF FINAL GRADE VOLUMES, PILE REVEAL HEIGHTS, AND BILL OF MATERIAL TABLES IS BASED SOLELY ON ACCURACY OF TOPOGRAPHY PROVIDED BY OTHERS.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, VOLUMES, AND AREAS PRIOR TO CONSTRUCTION.



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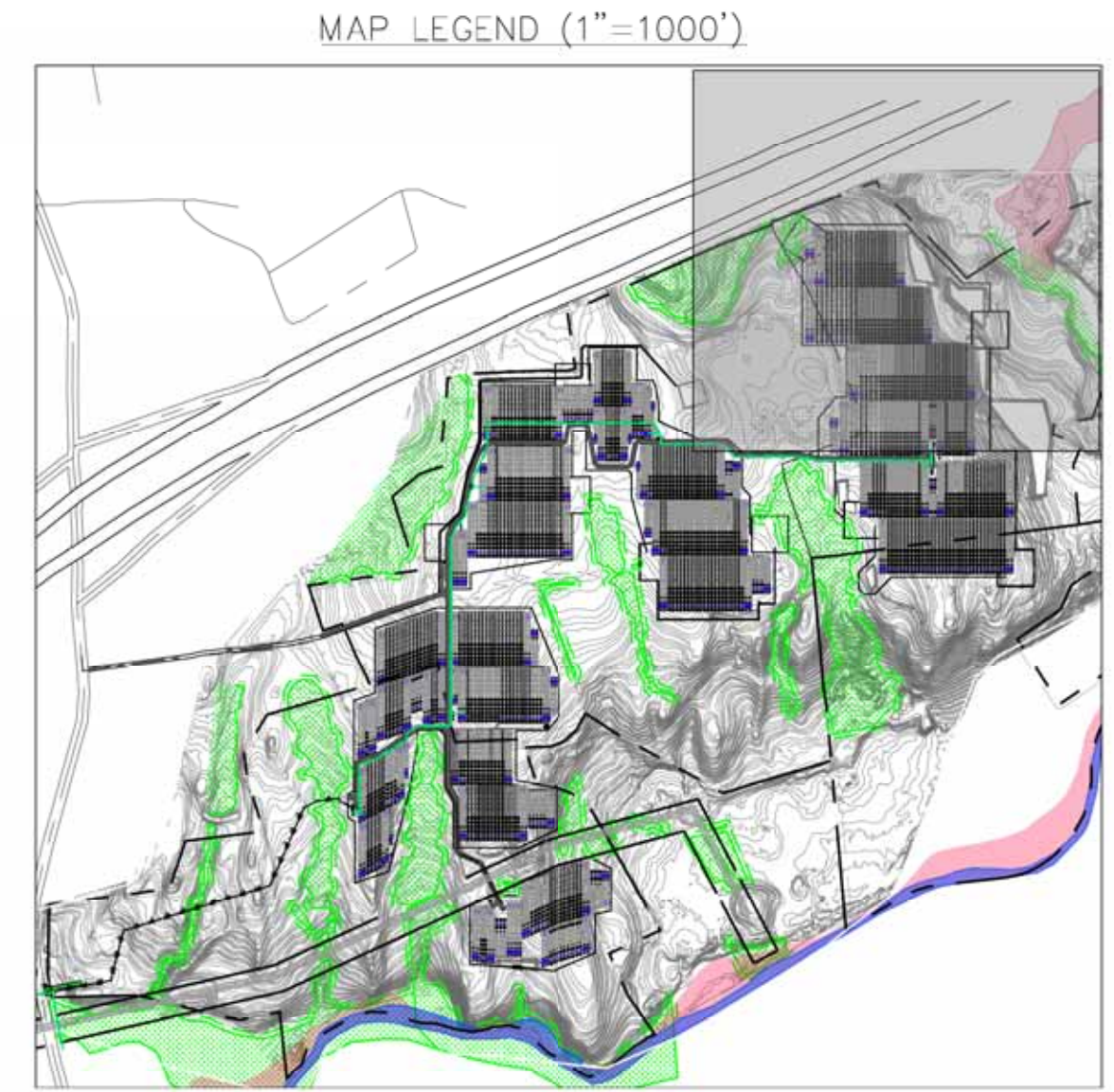
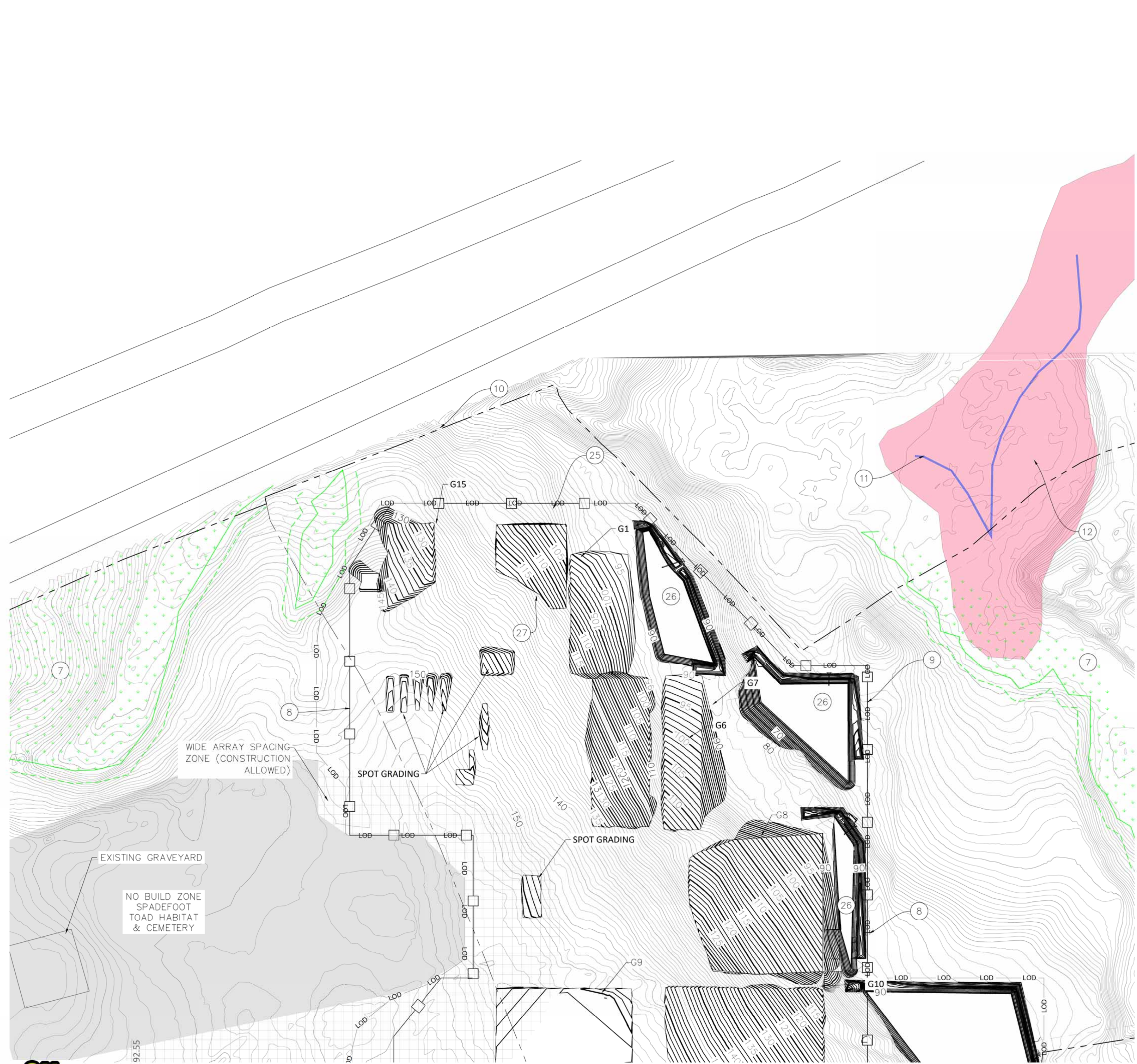
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| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
GRADING & DRAINAGE SITE PLAN

SHEET:
 G&D-201



1 GRADING AND DRAINAGE SITE PLAN
 G&D-201 Scale: 1" = 100' 0 100 200 Feet



LEGEND

| | | |
|---|--|-------------------------------|
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |
| ⑪ | | RIVER OR CREEK |
| ⑫ | | 100 YEAR FLOOD ZONE |
| ⑳ | | STORMWATER FLOW CONTROL |
| ㉑ | | PERMANENT STORMWATER DRY POND |
| ㉒ | | GRADING AREA |
| | | — 75 — (E) MAJOR CONTOUR |
| | | — 76 — (E) MINOR CONTOUR |
| | | — 75 — (N) MAJOR CONTOUR |
| | | — 76 — (N) MINOR CONTOUR |

- GRADING AND DRAINAGE GENERAL NOTES:**
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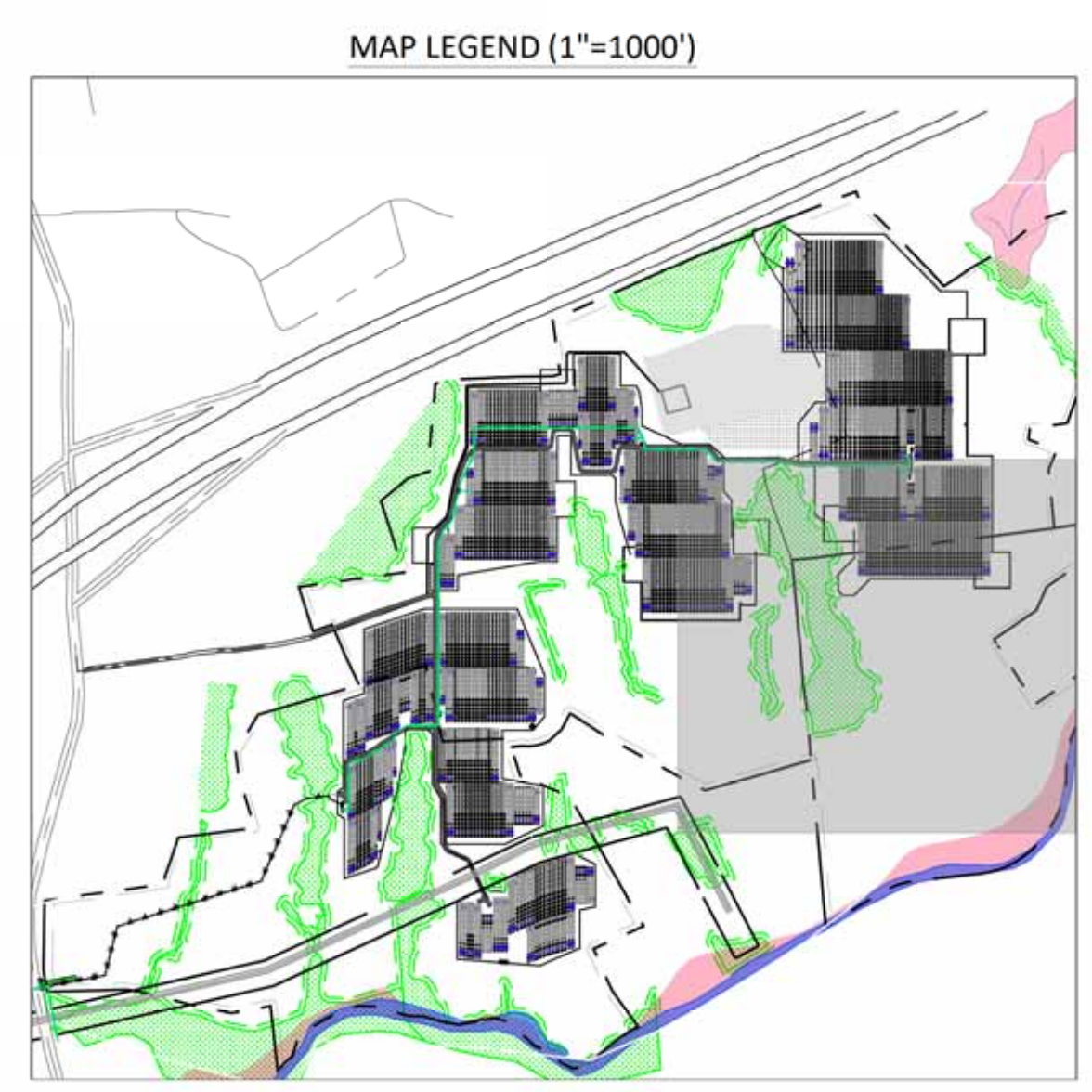
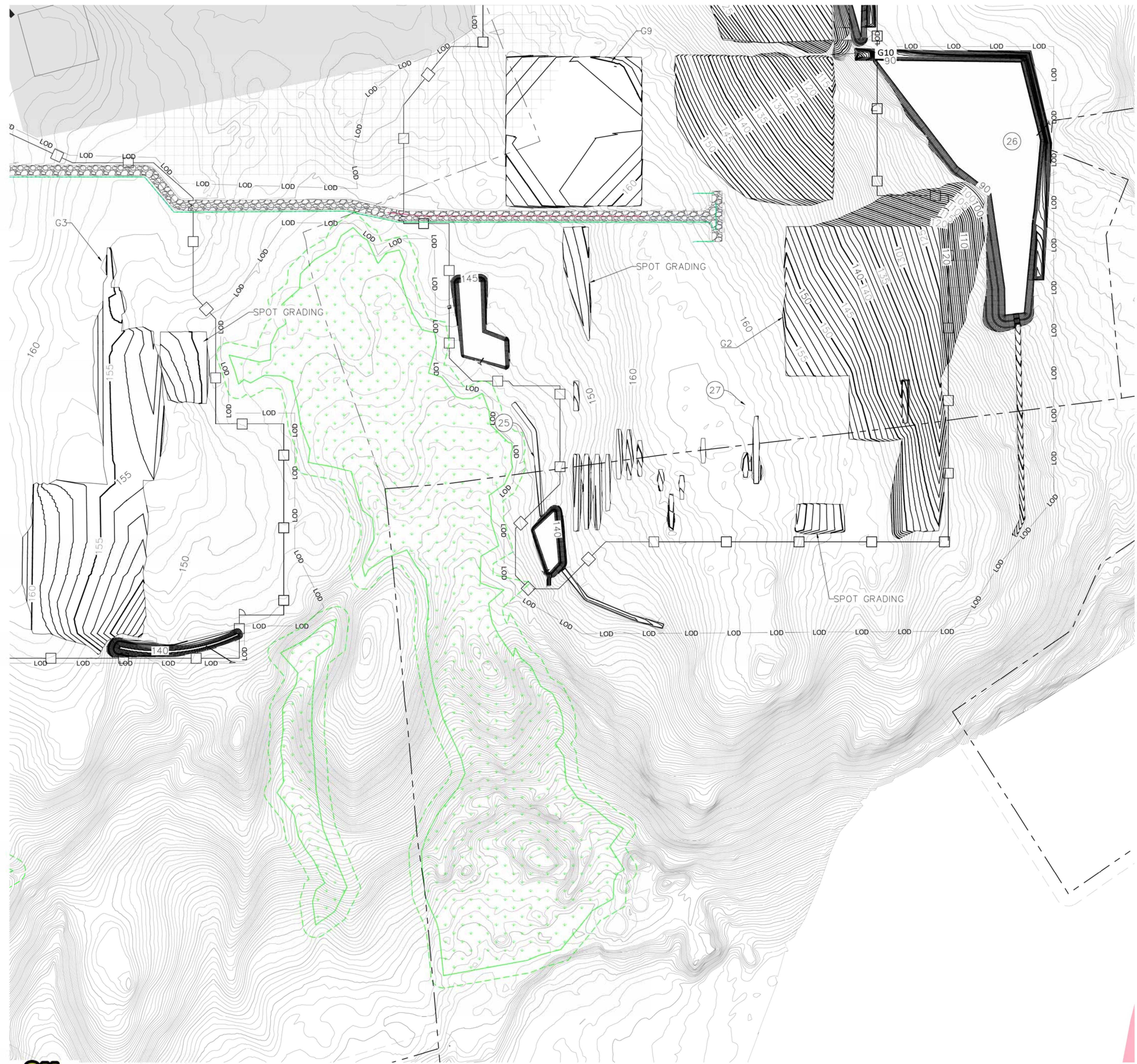
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| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
 GRADING & DRAINAGE SITE PLAN

SHEET:
 G&D-202



1 GRADING AND DRAINAGE SITE PLAN
 G&D-202 Scale: 1" = 100'



LEGEND

| | | |
|---|--|-------------------------------|
| ⑥ | | PROPOSED SITE ACCESS ROAD |
| ⑦ | | WETLAND W/BUFFER |
| ⑧ | | SITE FENCE LINE |
| ⑨ | | SITE LIMIT OF DISTURBANCE |
| ⑩ | | SITE BOUNDARY |
| ⑪ | | RIVER OR CREEK |
| ⑫ | | 100 YEAR FLOOD ZONE |
| ⑲ | | STORMWATER FLOW CONTROL |
| ⑳ | | PERMANENT STORMWATER DRY POND |
| ㉑ | | GRADING AREA |
| | | (E) MAJOR CONTOUR |
| | | (E) MINOR CONTOUR |
| | | (N) MAJOR CONTOUR |
| | | (N) MINOR CONTOUR |

GRADING AND DRAINAGE GENERAL NOTES:

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| REV | DESCRIPTION | DATE |
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| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
| 1 | 60% FOR CLIENT REVIEW | 06/11/2020 |
| 2 | 90% ISSUED FOR CLIENT REVIEW | 06/30/2020 |
| 3 | IFC (DRAFT FOR REVIEW) | 07/02/2020 |
| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
| - | - | - |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

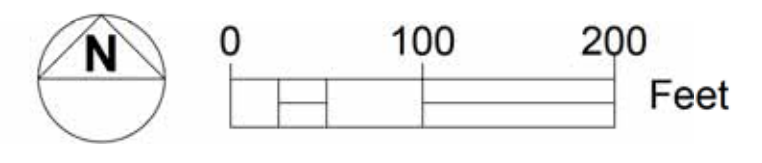
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| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

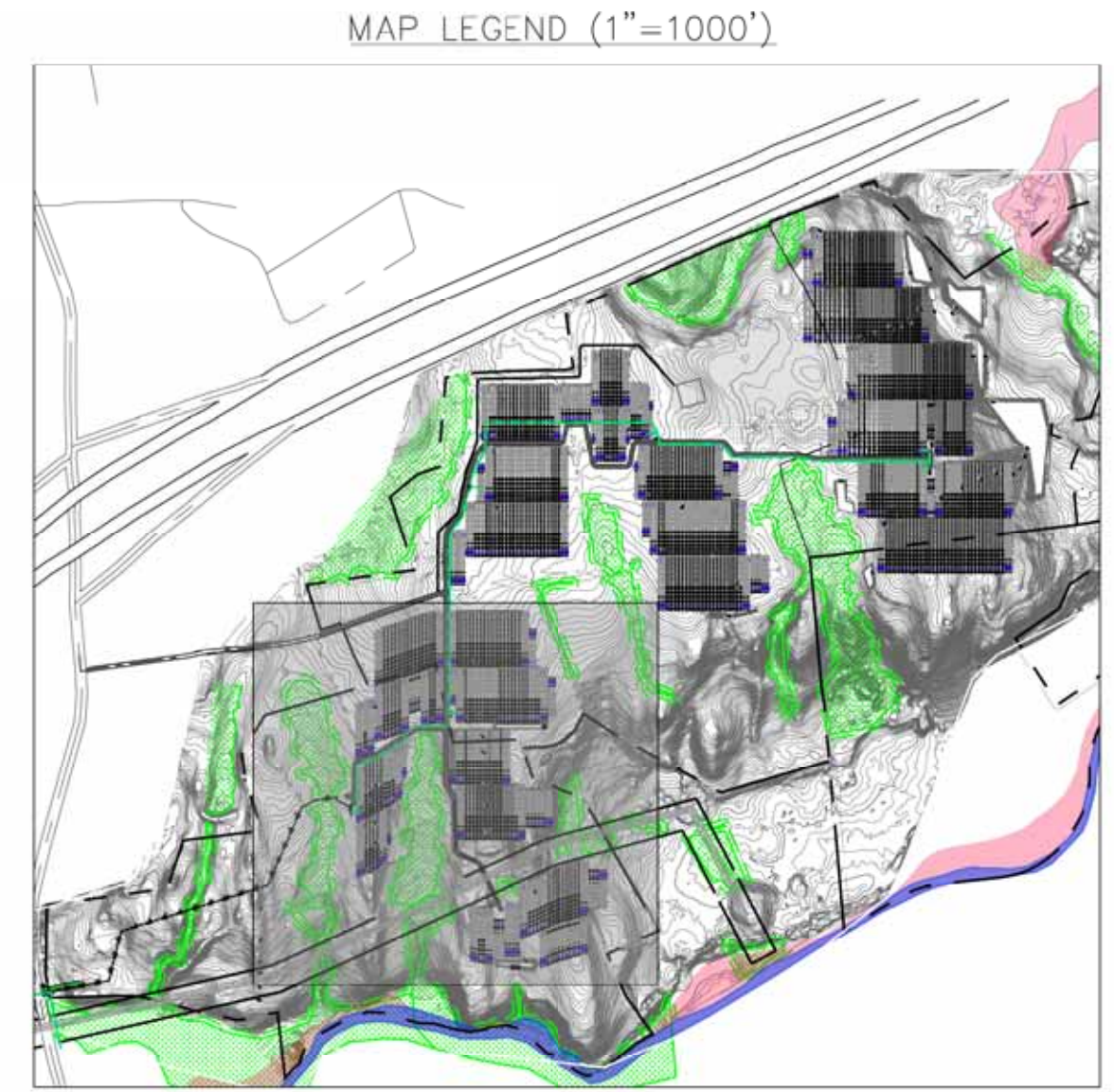
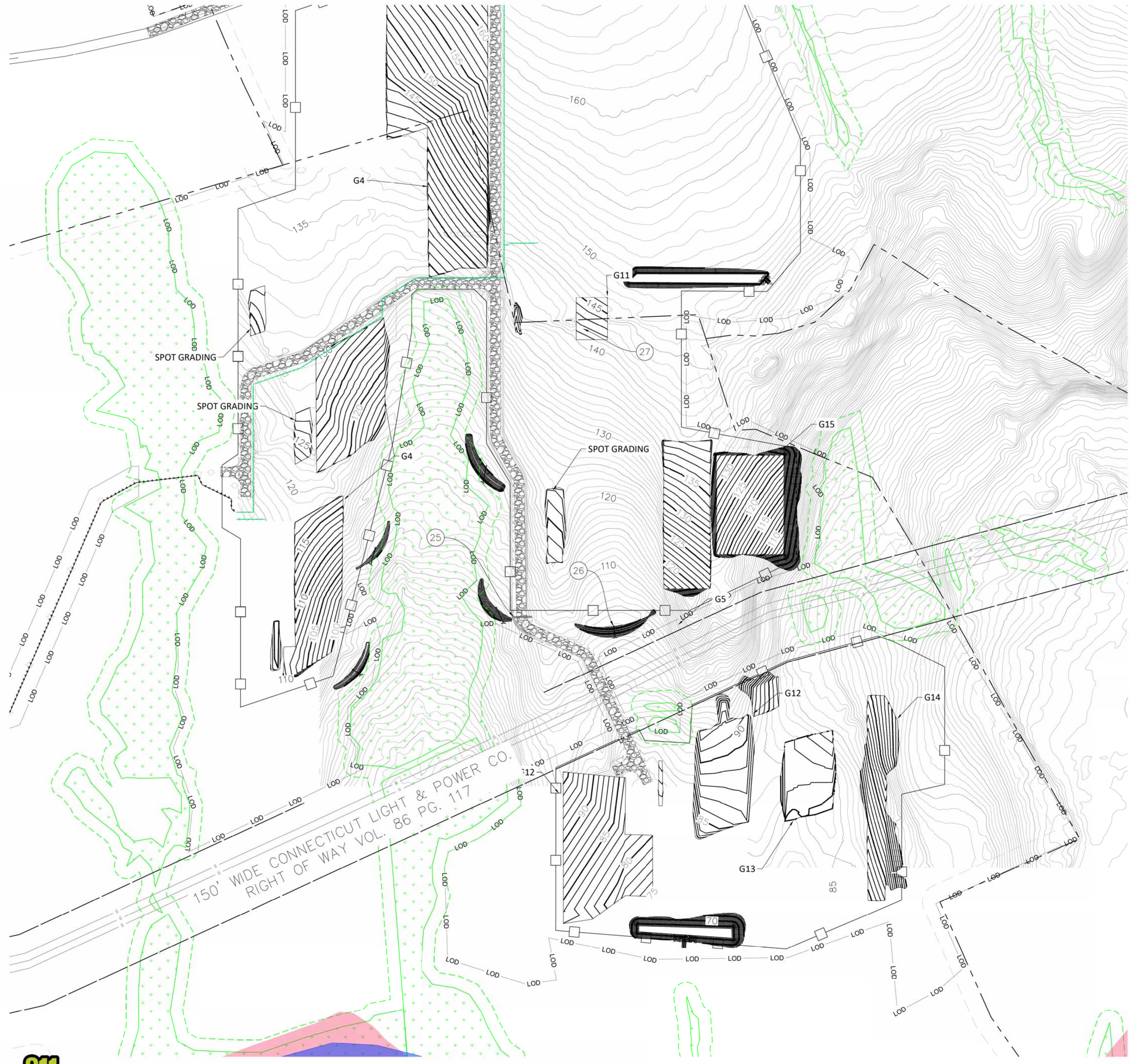
TITLE: GRADING & DRAINAGE SITE PLAN

SHEET: G&D-203



1 GRADING AND DRAINAGE SITE PLAN
 G&D-203 Scale: 1" = 100'





LEGEND

| | |
|------|-------------------------------|
| ⑥ | PROPOSED SITE ACCESS ROAD |
| ⑦ | WETLAND W/BUFFER |
| ⑧ | SITE FENCE LINE |
| ⑨ | SITE LIMIT OF DISTURBANCE |
| ⑩ | SITE BOUNDARY |
| ⑪ | RIVER OR CREEK |
| ⑫ | 100 YEAR FLOOD ZONE |
| ⑲ | STORMWATER FLOW CONTROL |
| ⑳ | PERMANENT STORMWATER DRY POND |
| ㉑ | GRADING AREA |
| —75— | (E) MAJOR CONTOUR |
| —76— | (E) MINOR CONTOUR |
| —75— | (N) MAJOR CONTOUR |
| —76— | (N) MINOR CONTOUR |

- GRADING AND DRAINAGE GENERAL NOTES:**
1. ARRAY NOT SHOWN FOR CLARITY
 2. GRADING AREAS ARE BASED ON NEXT TRACKER RACKING WITH 5.5' MAXIMUM REVEAL POSTS.
 3. ACCURACY OF FINAL GRADE VOLUMES, PILE REVEAL HEIGHTS, AND BILL OF MATERIAL TABLES IS BASED SOLELY ON ACCURACY OF TOPOGRAPHY PROVIDED BY OTHERS.
 4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, VOLUMES, AND AREAS PRIOR TO CONSTRUCTION.

| REV | DESCRIPTION | DATE |
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| - | - | - |
| - | - | - |
| - | - | - |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

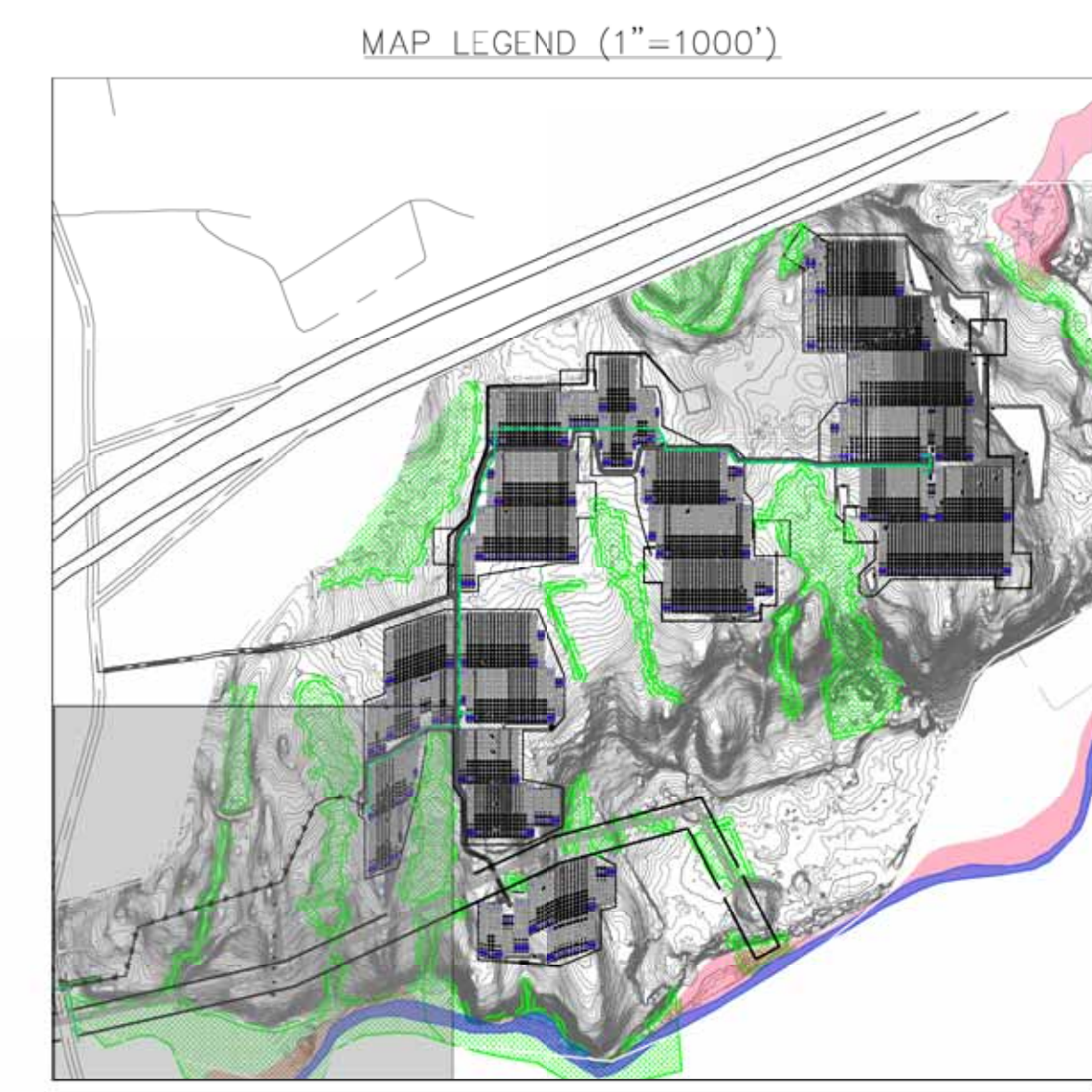
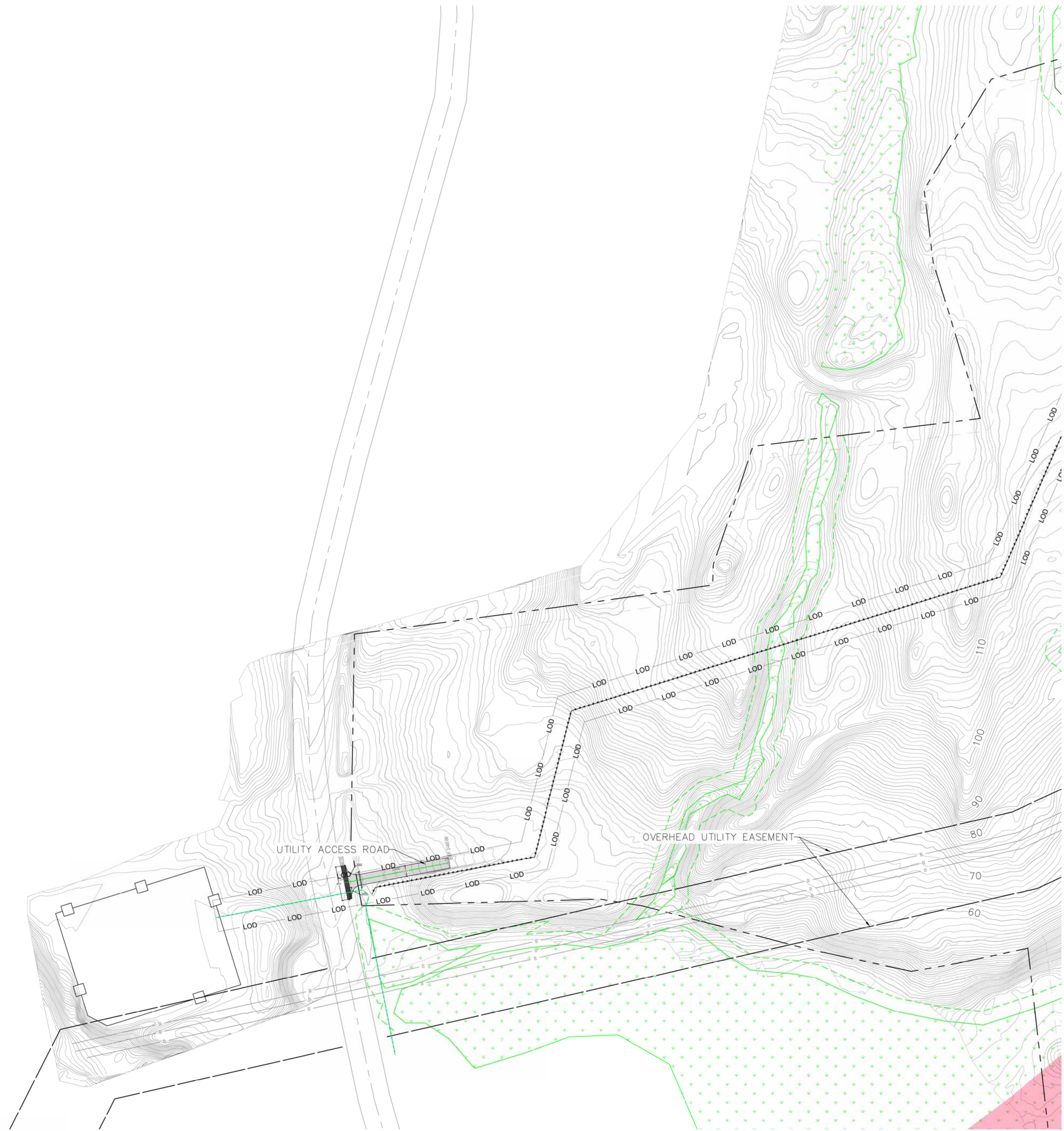
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
GRADING & DRAINAGE SITE PLAN

SHEET:
 G&D-204



1 GRADING AND DRAINAGE SITE PLAN
 G&D-204 Scale: 1" = 100' 0 100 200 Feet



LEGEND

| | |
|--------|---------------------------|
| ⑥ | PROPOSED SITE ACCESS ROAD |
| ⑦ | WETLAND W/BUFFER |
| ⑧ | SITE FENCE LINE |
| ⑨ | SITE LIMIT OF DISTURBANCE |
| ⑩ | SITE BOUNDARY |
| ⑪ | RIVER OR CREEK |
| ⑫ | 100 YEAR FLOOD ZONE |
| ⑳ | GRADING AREA |
| — 75 — | (E) MAJOR CONTOUR |
| — 76 — | (E) MINOR CONTOUR |
| — 75 — | (N) MAJOR CONTOUR |
| — 76 — | (N) MINOR CONTOUR |

- GRADING AND DRAINAGE GENERAL NOTES:**
1. ARRAY NOT SHOWN FOR CLARITY
 2. GRADING AREAS ARE BASED ON NEXT TRACKER RACKING WITH 5.5' MAXIMUM REVEAL POSTS.
 3. ACCURACY OF FINAL GRADE VOLUMES, PILE REVEAL HEIGHTS, AND BILL OF MATERIAL TABLES IS BASED SOLELY ON ACCURACY OF TOPOGRAPHY PROVIDED BY OTHERS.
 4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, VOLUMES, AND AREAS PRIOR TO CONSTRUCTION.



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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

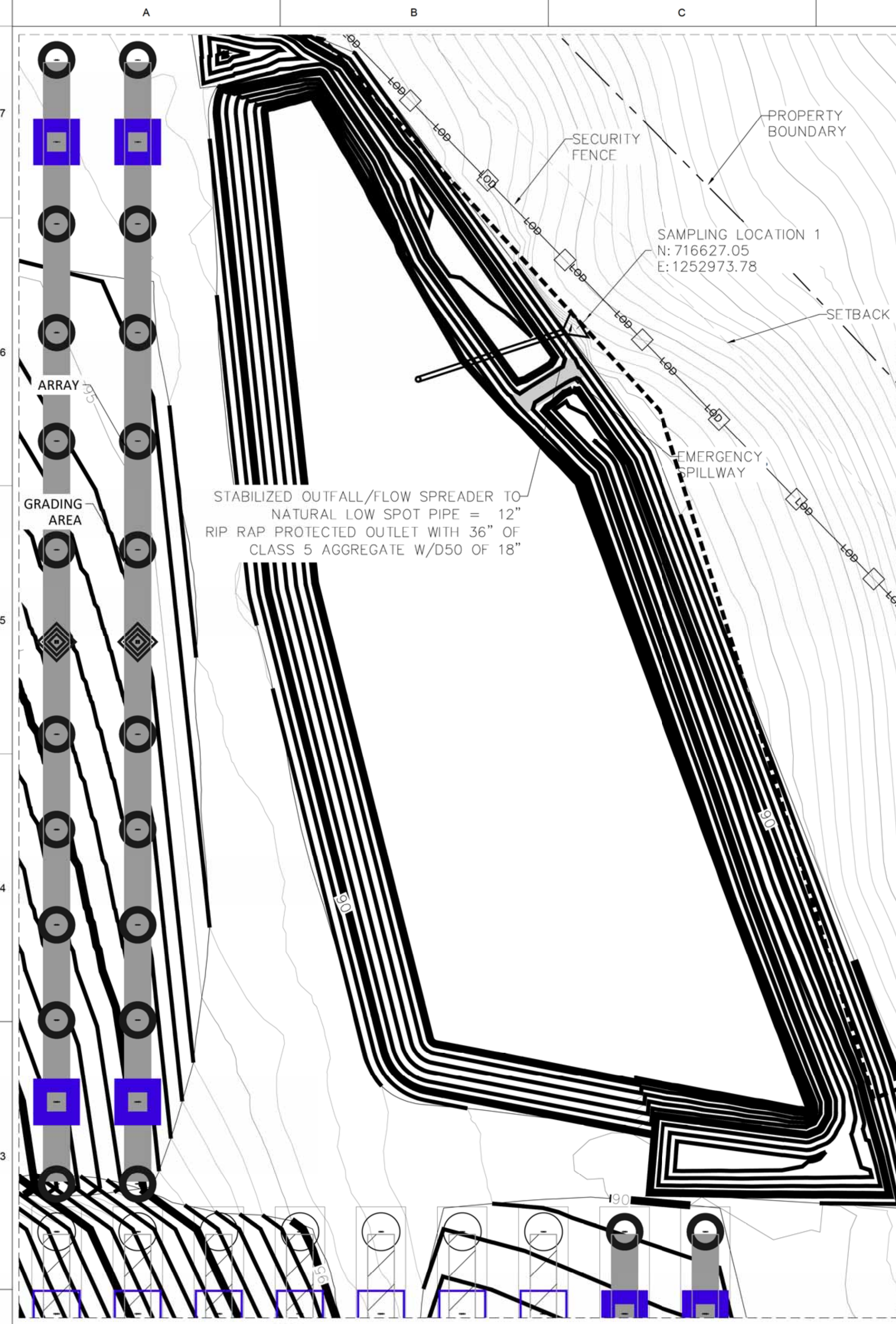
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| SEAL: | DATE: |
| | 22-JUL-20 |
| PROJECT #: | DRAWN BY: |
| 20200309_CT | MMM |
| CHECKED BY: | |
| DRG | |

TITLE:
 GRADING & DRAINAGE SITE PLAN

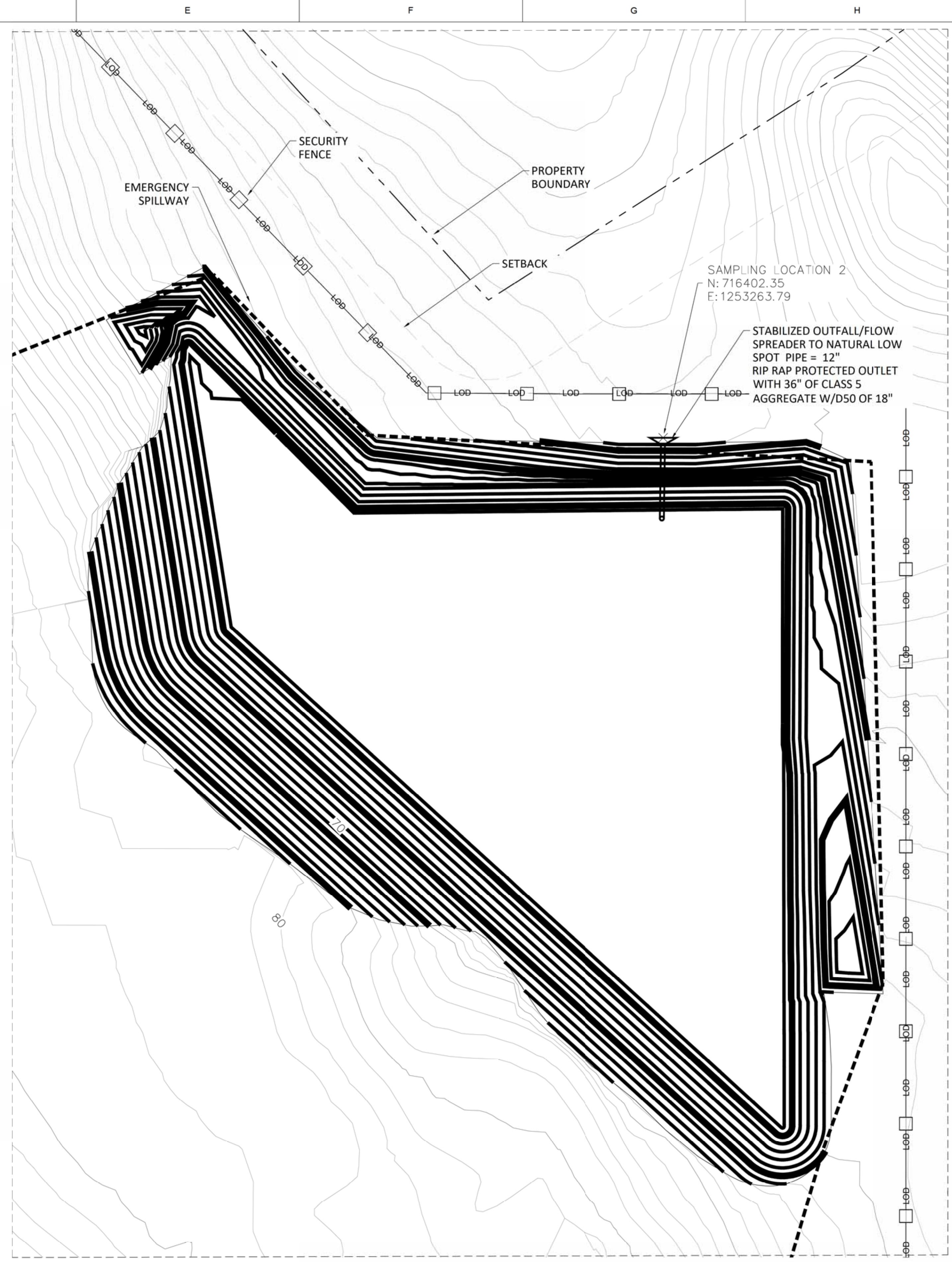
SHEET:
 G&D-205



1 GRADING AND DRAINAGE SITE PLAN
 Scale: 1" = 100'
 0 100 200 Feet



1 DRY STORMWATER DETENTION BASIN 1
G&D-300 Scale: 1"=20'



2 DRY STORMWATER DETENTION BASIN 2
G&D-300 Scale: 1"=20'

- GENERAL NOTES:
1. TEMPORARY SEDIMENT TRAPS USED DURING CONSTRUCTION, WILL BE RE-PURPOSED AS DRY STORMWATER DETENTION BASINS.
 2. FOLLOWING THE END OF CONSTRUCTION, TEMPORARY SEDIMENT TRAPS WILL BE CLEANED AND BROUGHT BACK TO DESIGNED GRADE TO ENSURE PROPER INFILTRATION AND FLOW SPREADING.
 3. THE OVERFLOW PIPE WILL BE CLEANED AND REPAIRED IF DAMAGE OR EXCESS SEDIMENT IS CREATED DURING CONSTRUCTION ACTIVITIES.
 4. FOLLOWING CONVERSION TO PERMANENT FEATURE RE-SEED AND STABILIZE.



| REV | DESCRIPTION | DATE |
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| - | - | - |
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PROJECT NAME:
STONINGTON SOLAR PROJECT

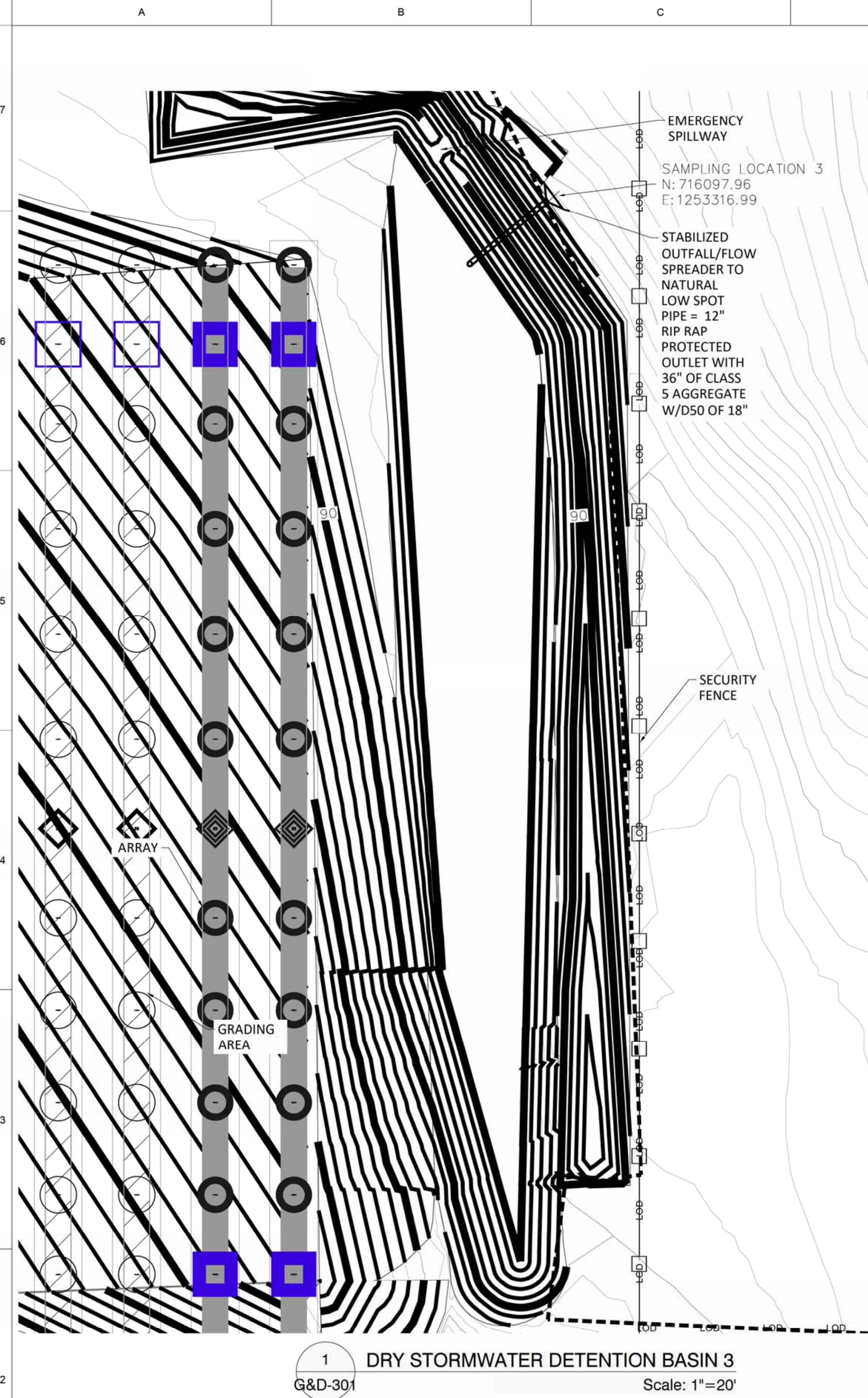
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal for Sierra Ray Galloway, No. 34152, State of Connecticut]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

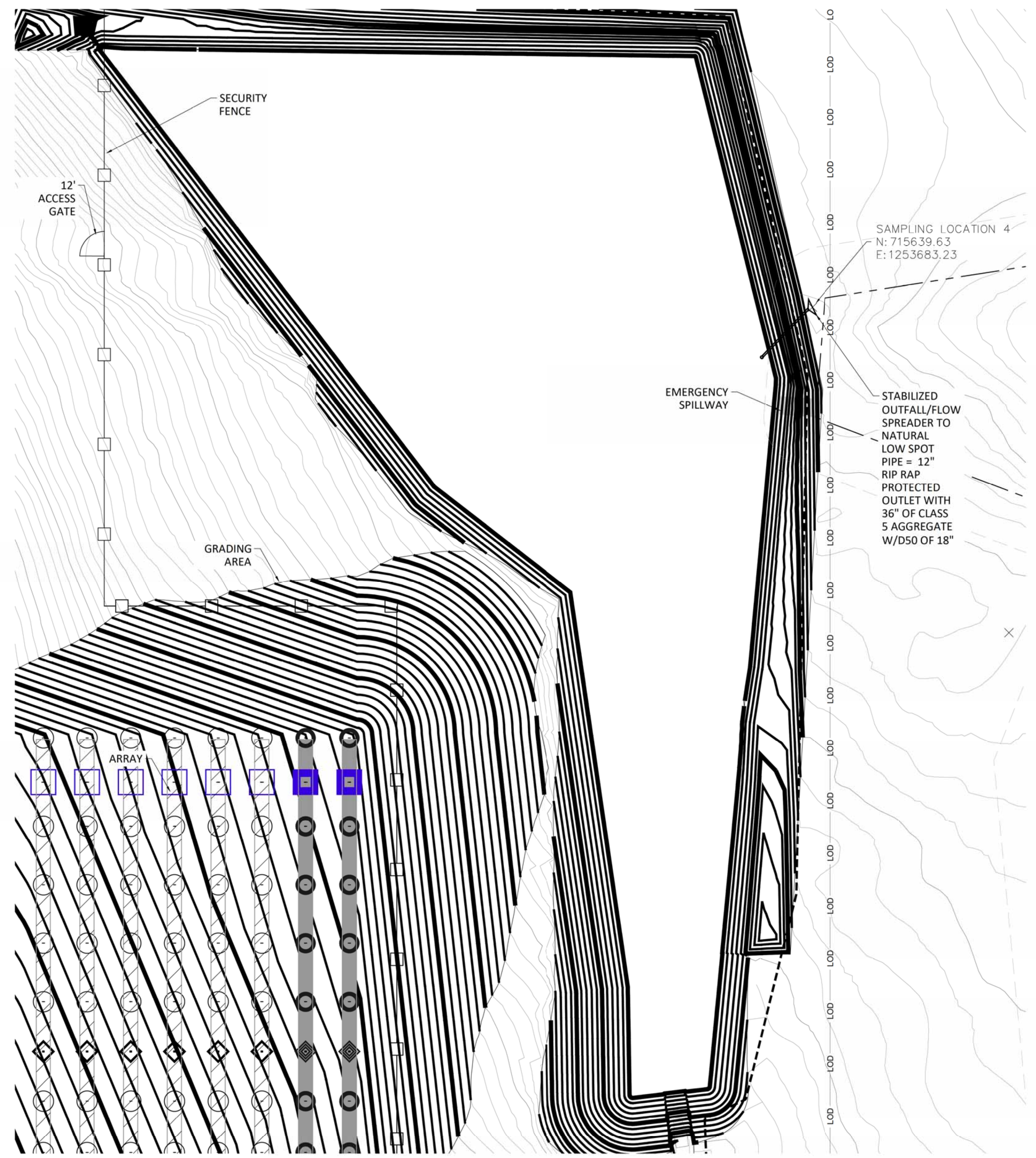
TITLE: GRADING & DRAINAGE
DETAILS

SHEET: G&D-300





1 DRY STORMWATER DETENTION BASIN 3
G&D-301 Scale: 1"=20'



2 DRY STORMWATER DETENTION BASIN 4
G&D-301 Scale: 1"=30'

- GENERAL NOTES:
1. TEMPORARY SEDIMENT TRAPS USED DURING CONSTRUCTION, WILL BE RE-PURPOSED AS DRY STORMWATER DETENTION BASINS.
 2. FOLLOWING THE END OF CONSTRUCTION, TEMPORARY SEDIMENT TRAPS WILL BE CLEANED AND BROUGHT BACK TO DESIGNED GRADE TO ENSURE PROPER INFILTRATION AND FLOW SPREADING.
 3. THE OVERFLOW PIPE WILL BE CLEANED AND REPAIRED IF DAMAGE OR EXCESS SEDIMENT IS CREATED DURING CONSTRUCTION ACTIVITIES.
 4. FOLLOWING CONVERSION TO PERMANENT FEATURE RE-SEED AND STABILIZE.




| REV | DESCRIPTION | DATE |
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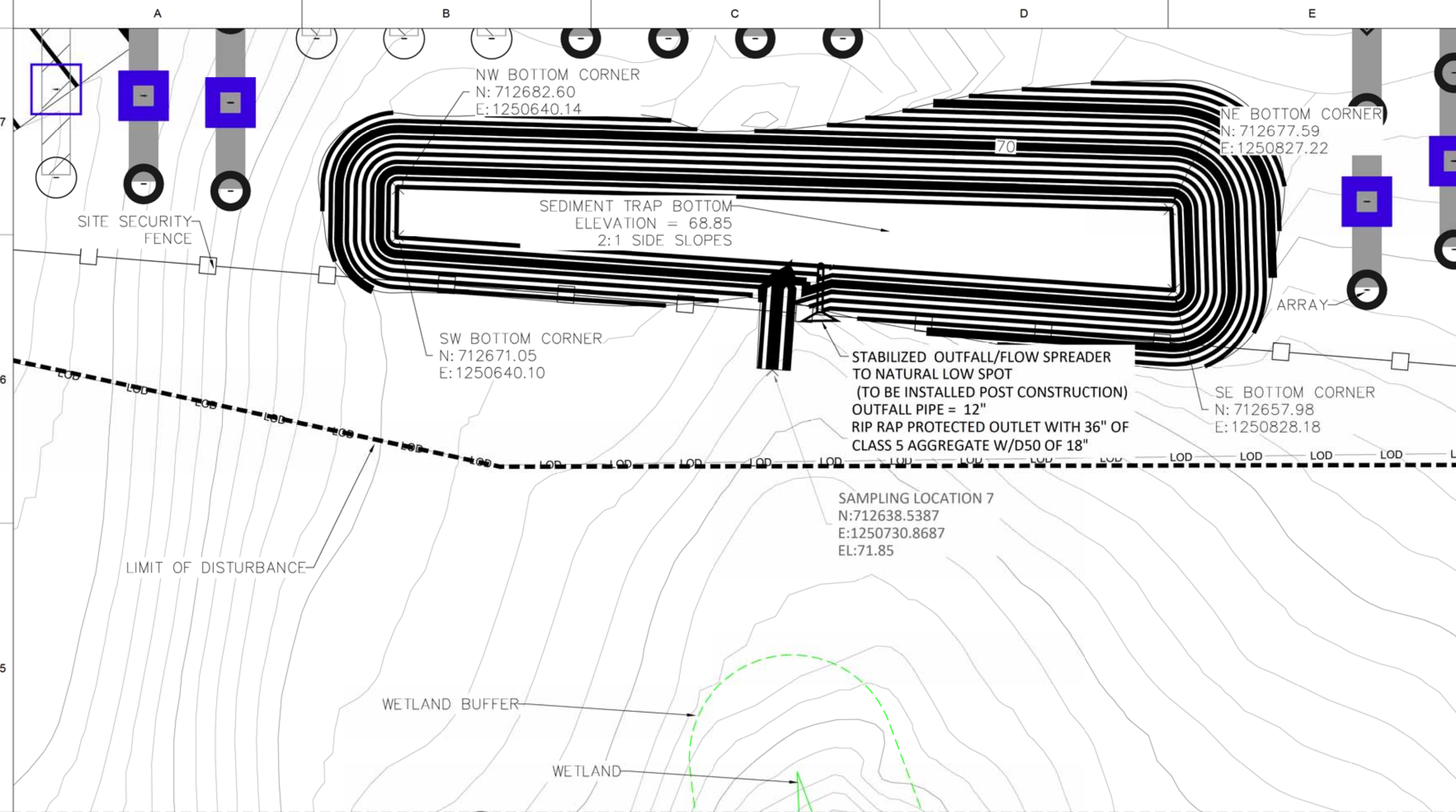
PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

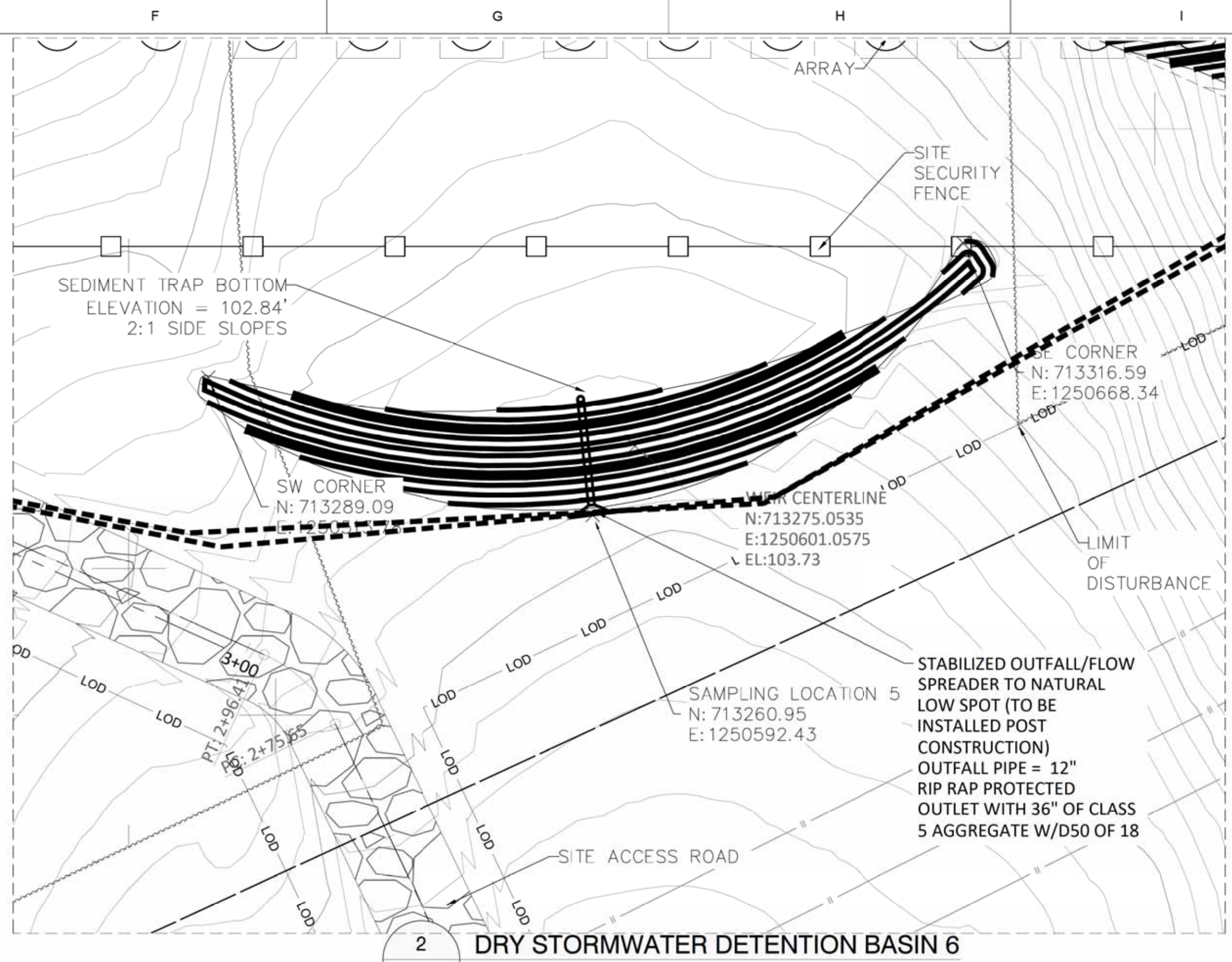
SEAL:  DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

TITLE: GRADING & DRAINAGE DETAILS
SHEET: G&D-301

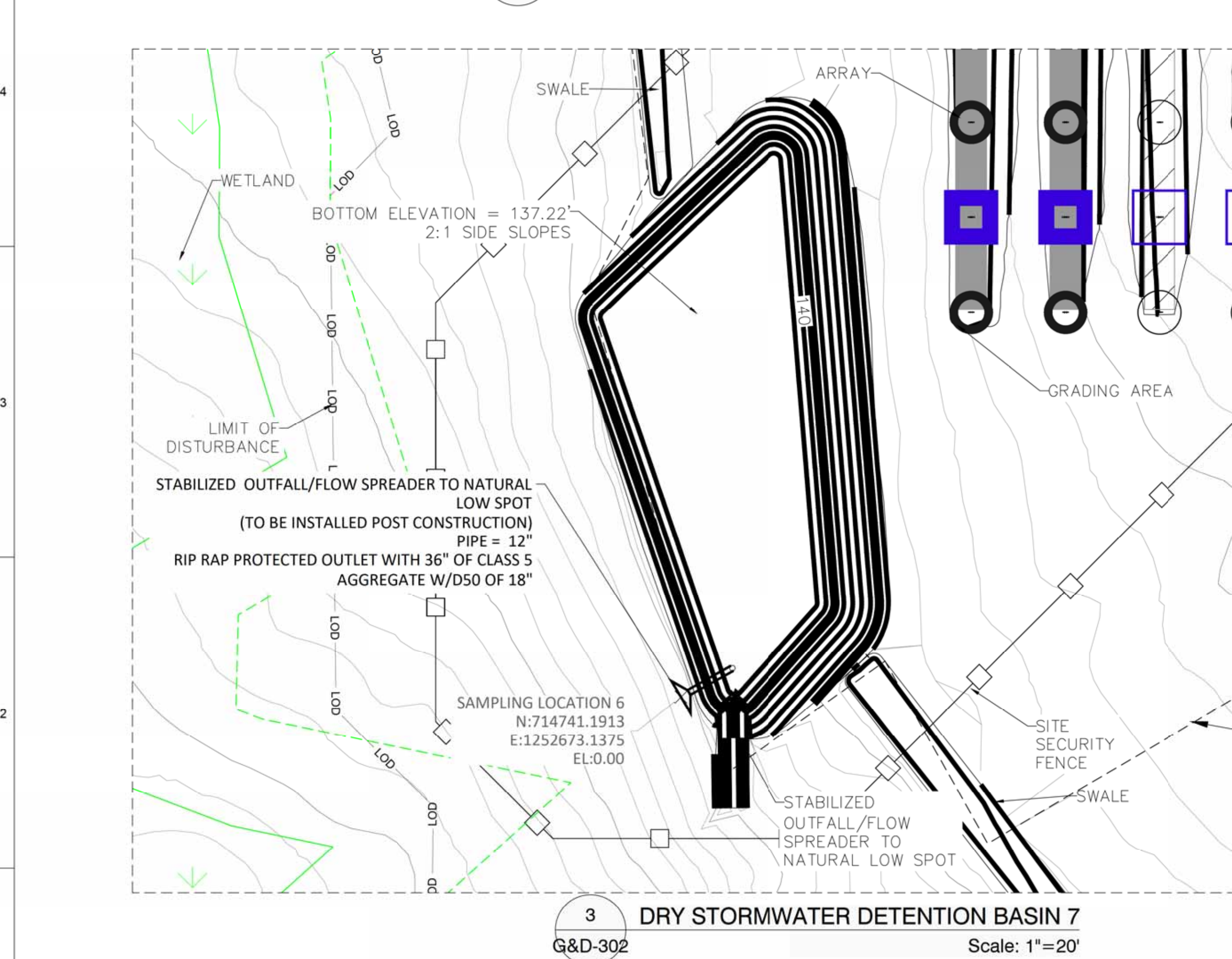




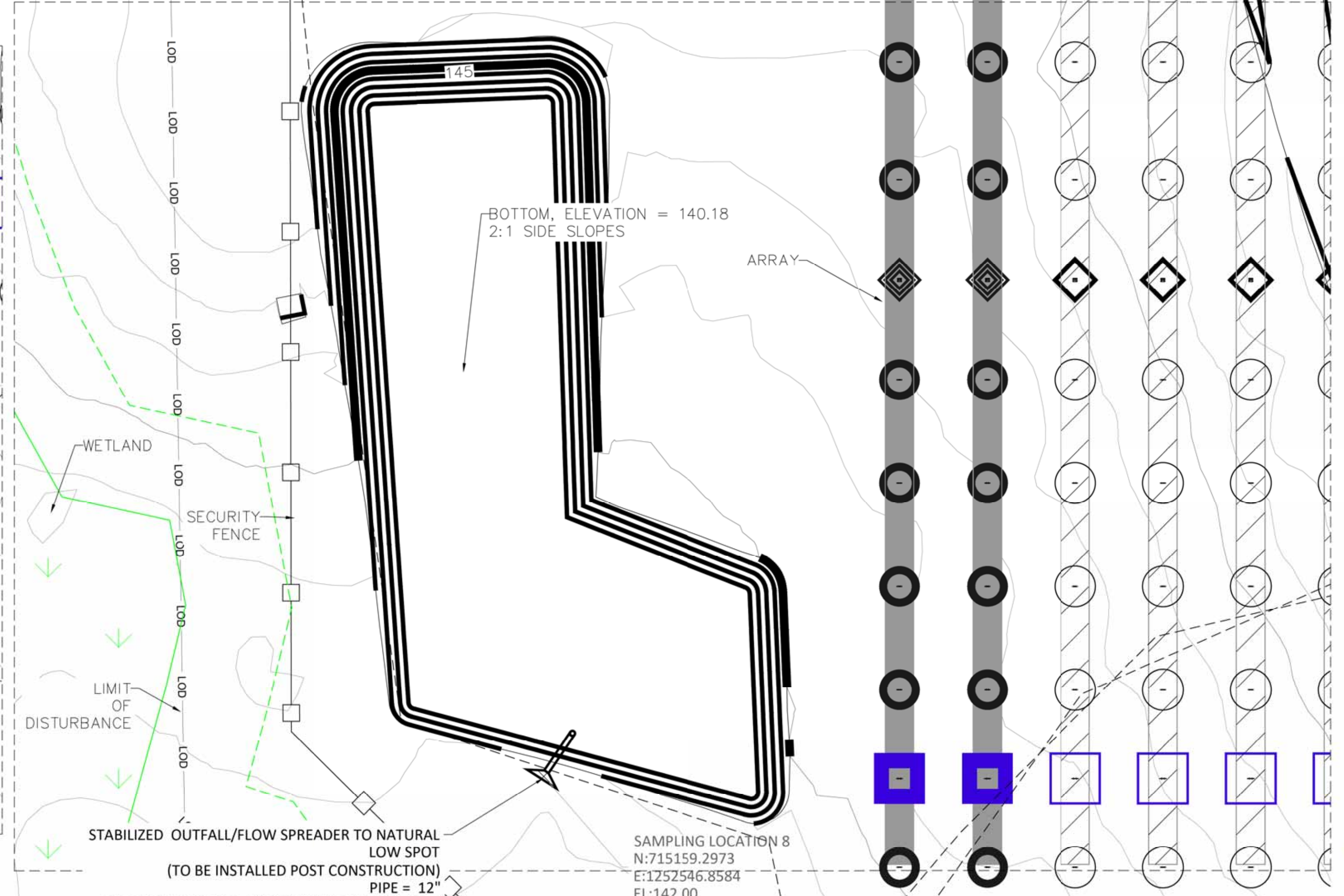
1 DRY STORMWATER DETENTION BASIN 5
G&D-302 Scale: 1"=20'



2 DRY STORMWATER DETENTION BASIN 6
G&D-302 Scale: 1"=20'



3 DRY STORMWATER DETENTION BASIN 7
G&D-302 Scale: 1"=20'



4 DRY STORMWATER DETENTION BASIN 8
G&D-302 Scale: 1"=20'

- GENERAL NOTES:
1. TEMPORARY SEDIMENT TRAPS USED DURING CONSTRUCTION, WILL BE RE-PURPOSED AS DRY STORMWATER DETENTION BASINS.
 2. OUTFALL/FLOW SPREADER TO BE INSTALLED DURING TRANSITION.
 3. OUTLET PIPE TO DISCHARGE INTO TRAPAZOIDAL CHANNEL.
 4. SEDIMENT TRAP 3 SHALL BE RESTORED TO ORIGINAL GRADE OF SITE AND ANY NON-NATIVE MATERIAL REMOVED AND DISCARDED.
 5. FOLLOWING THE END OF CONSTRUCTION THEY WILL BE CLEANED AND BROUGHT BACK TO DESIGNED GRADE TO ENSURE PROPER INFILTRATION AND FLOW SPREADING.
 6. FOLLOWING CONVERSION TO PERMANENT FEATURE RE-SEED AND STABILIZE.



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PROJECT NAME:
STONINGTON SOLAR PROJECT

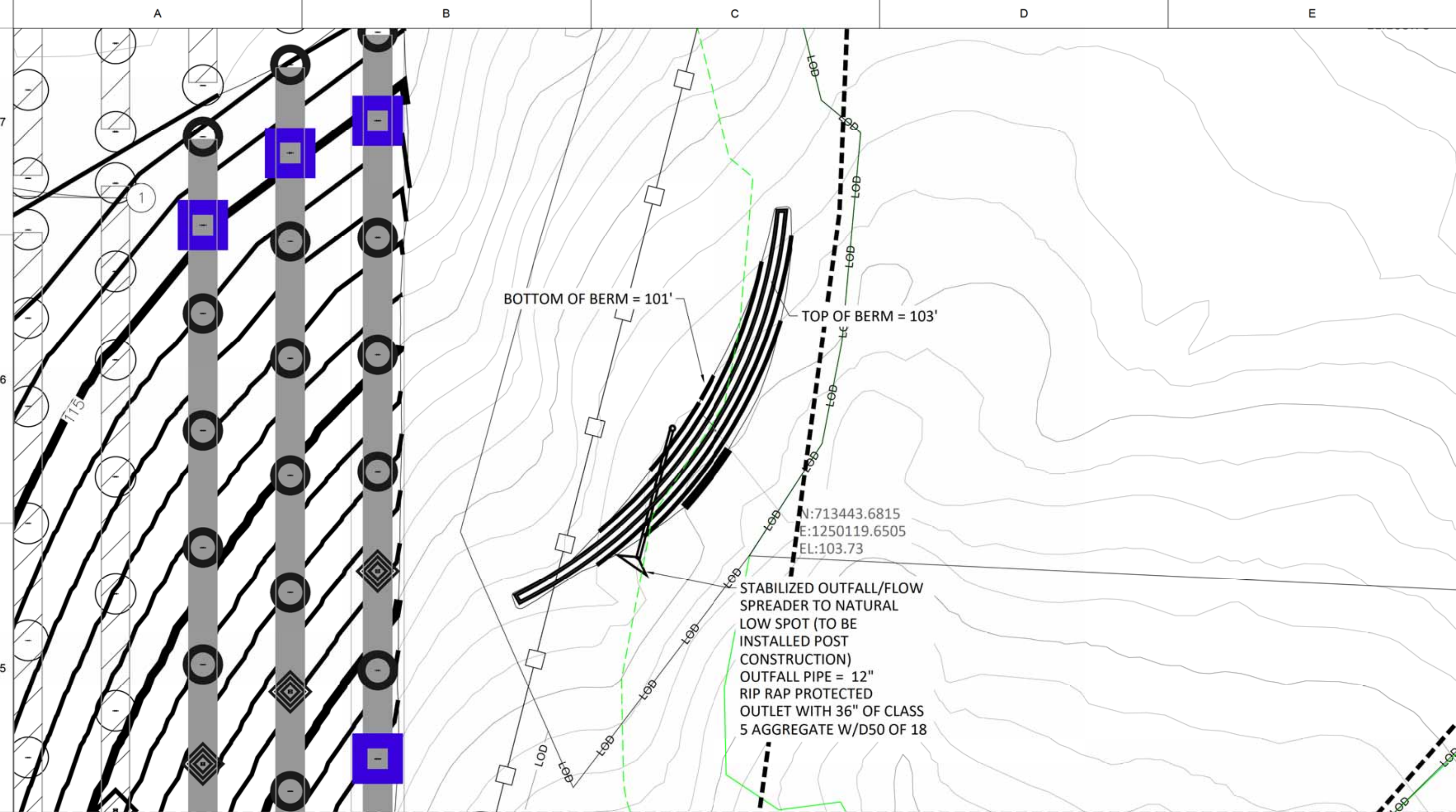
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal] DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

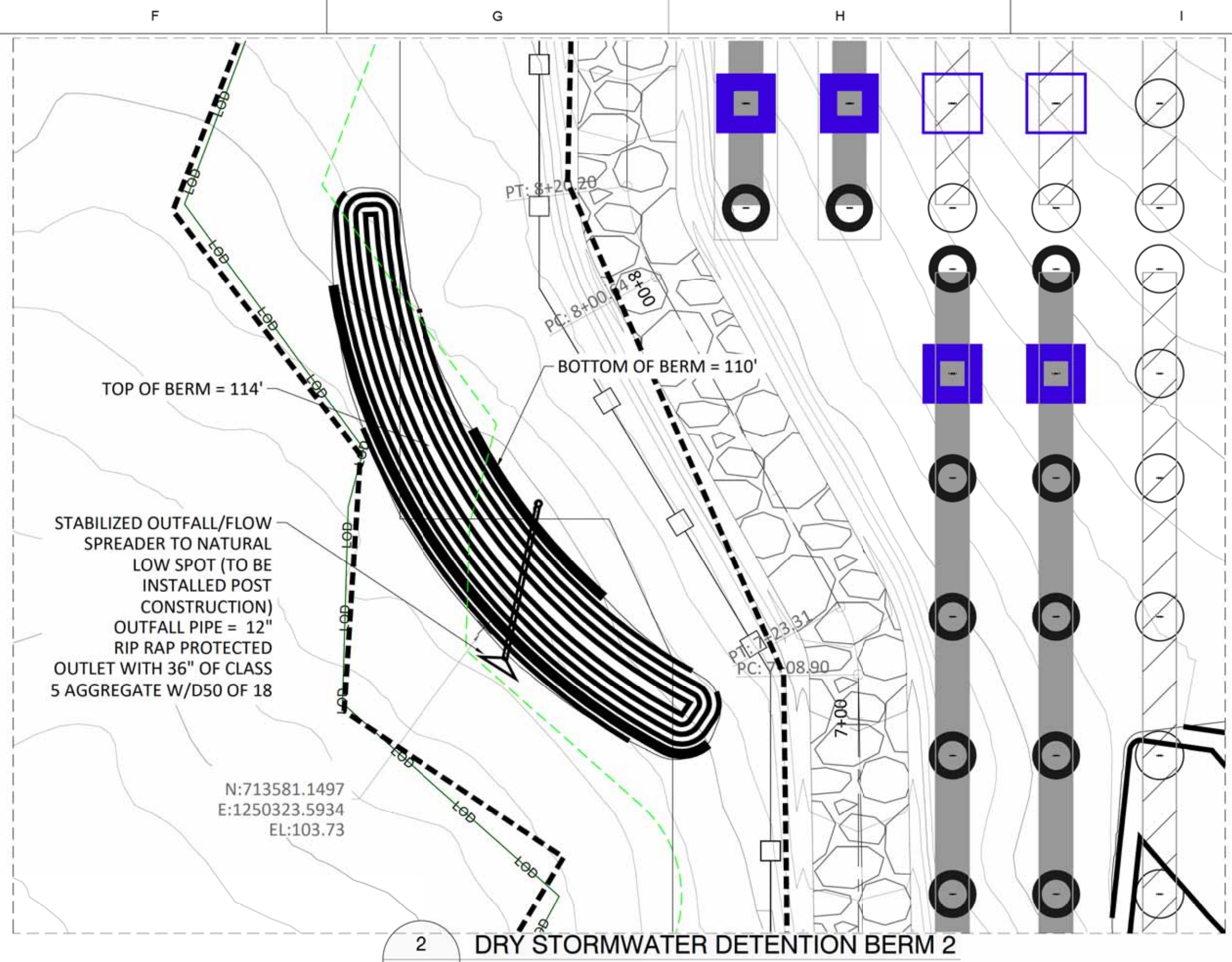
TITLE: GRADING & DRAINAGE DETAILS

SHEET: G&D-302

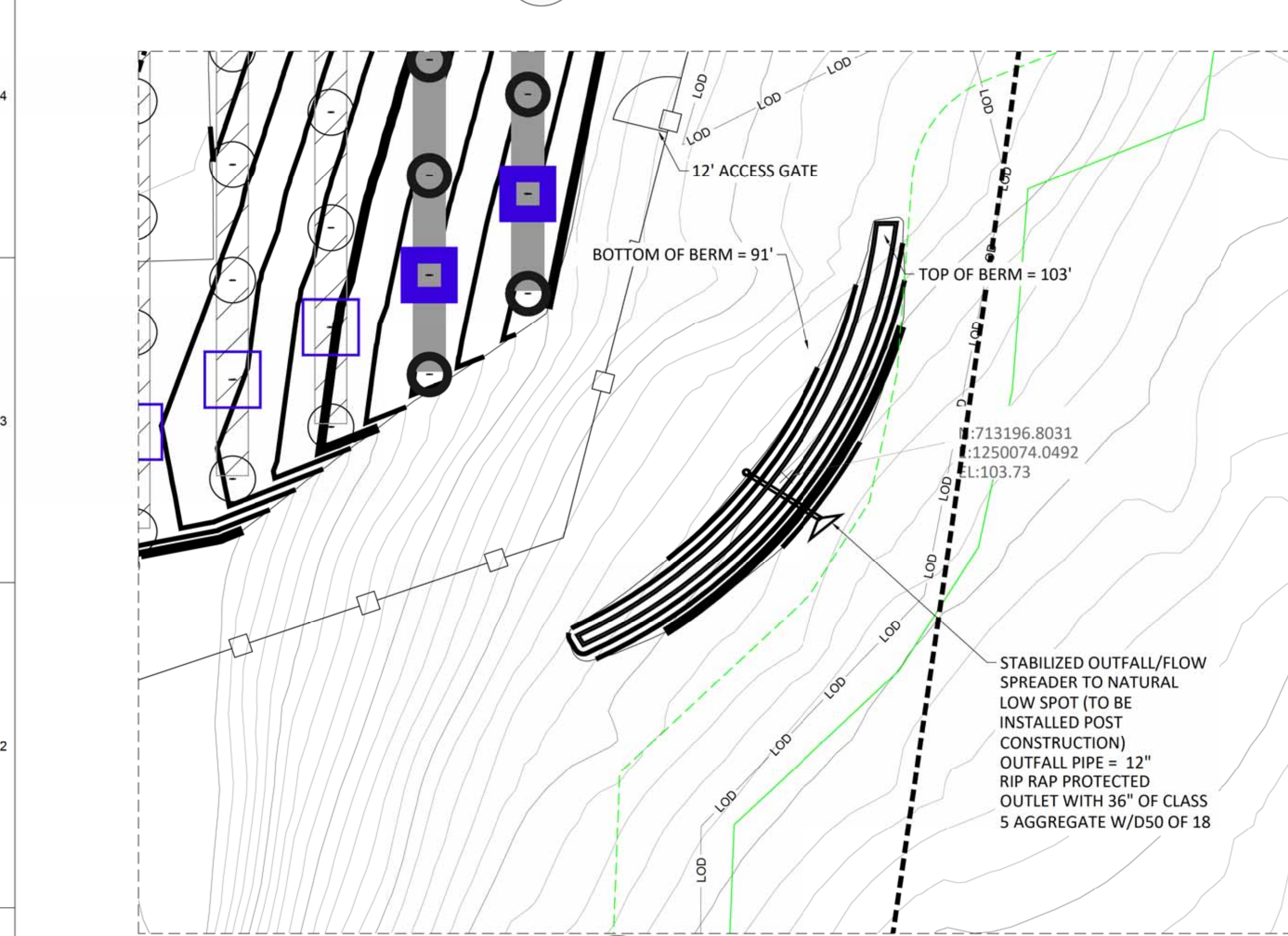




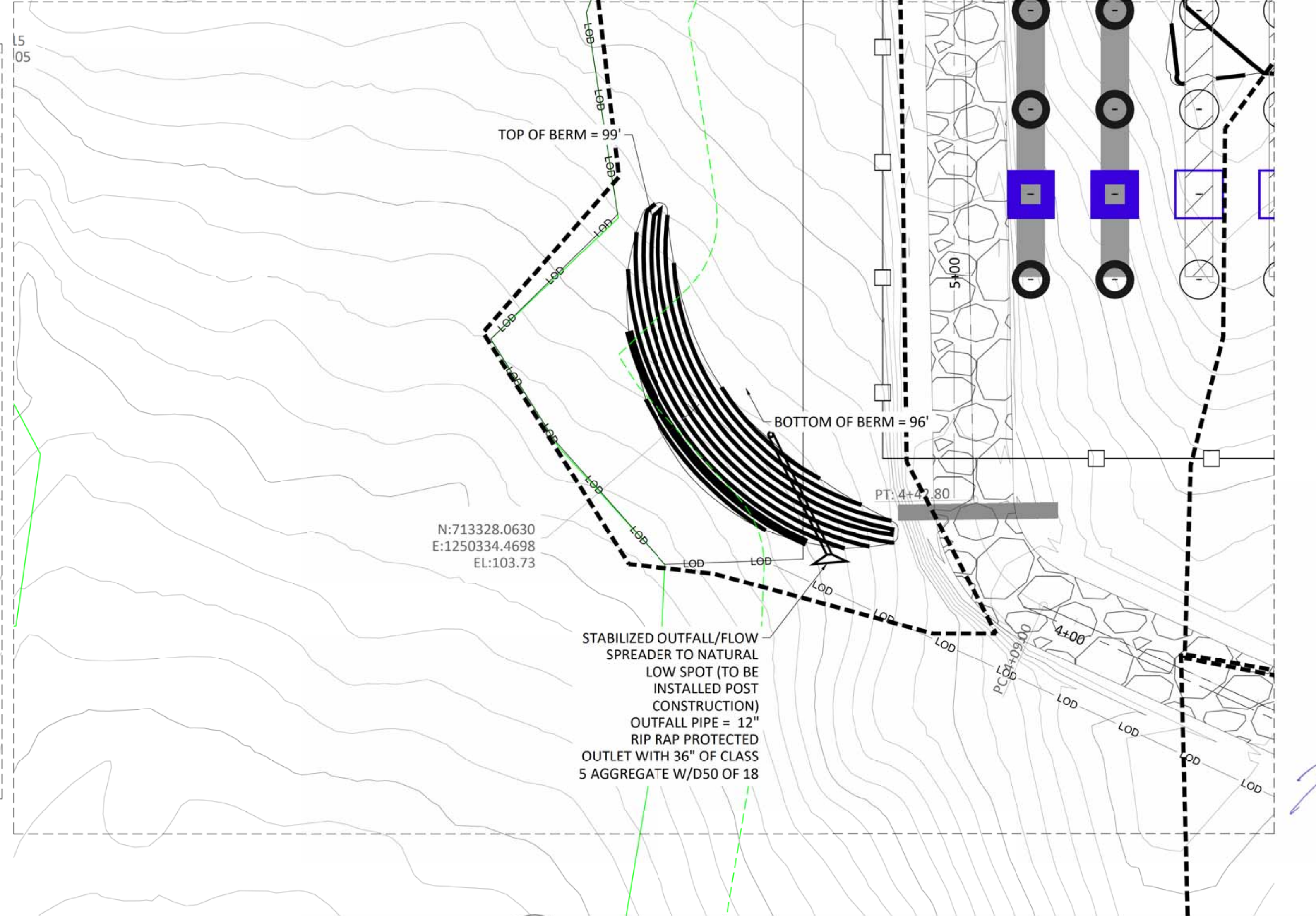
1 DRY STORMWATER DETENTION BERM
G&D-303 Scale: 1"=20'



2 DRY STORMWATER DETENTION BERM 2
G&D-303 Scale: 1"=20'



3 DRY STORMWATER DETENTION BERM 3
G&D-303 Scale: 1"=20'



4 DRY STORMWATER DETENTION BERM 4
G&D-303 Scale: 1"=20'



| REV | DESCRIPTION | DATE |
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PROJECT NAME:
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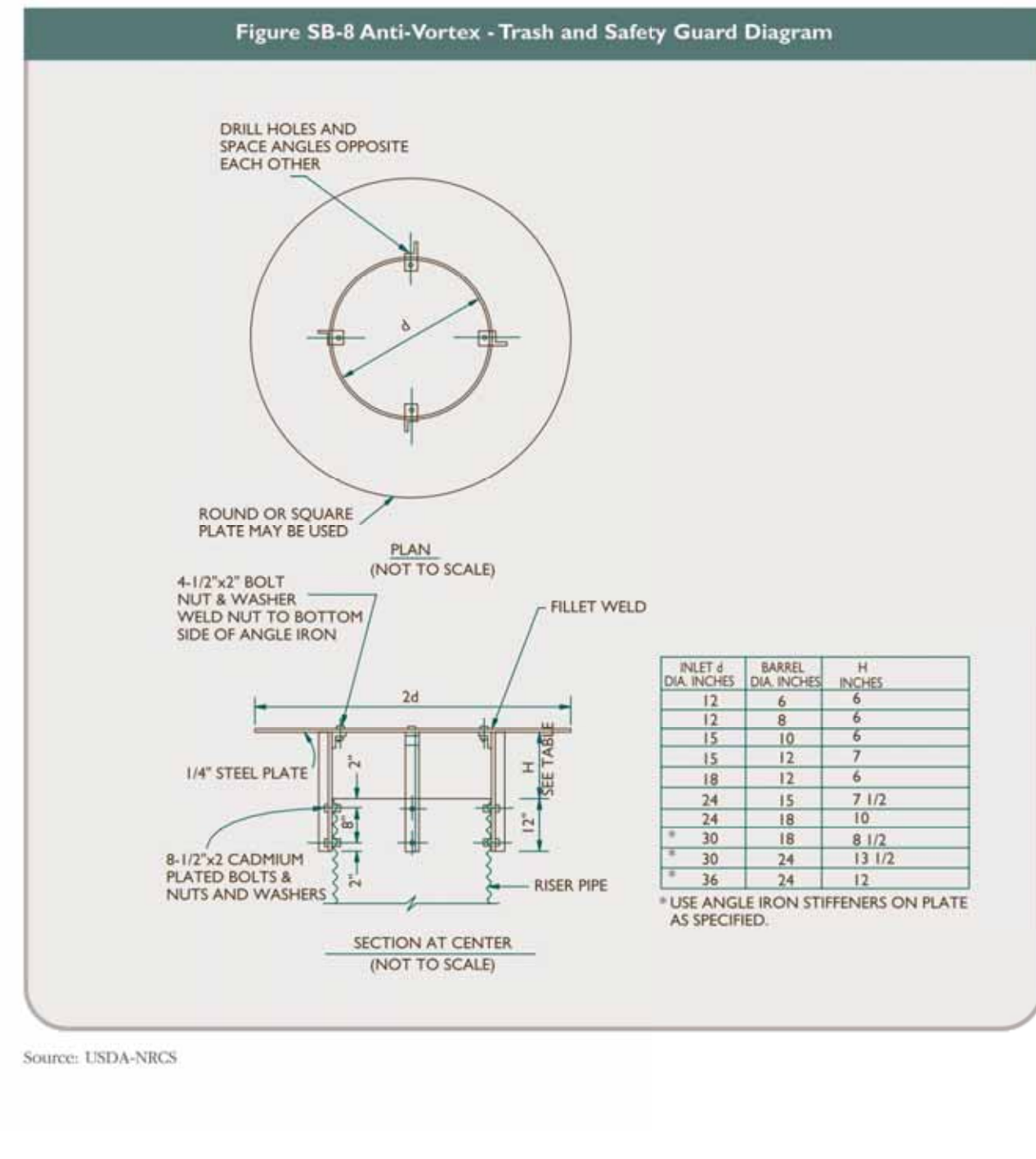
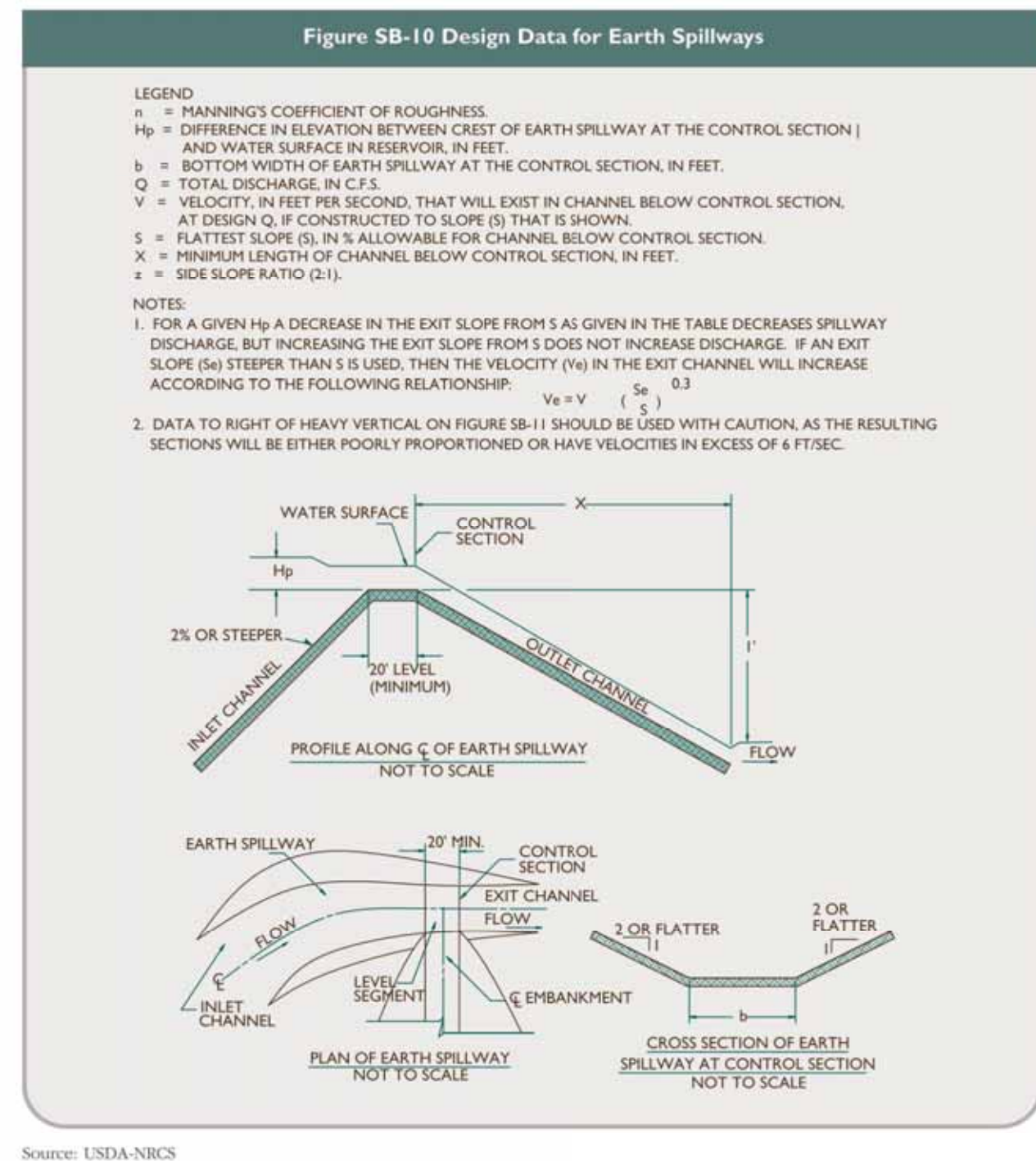
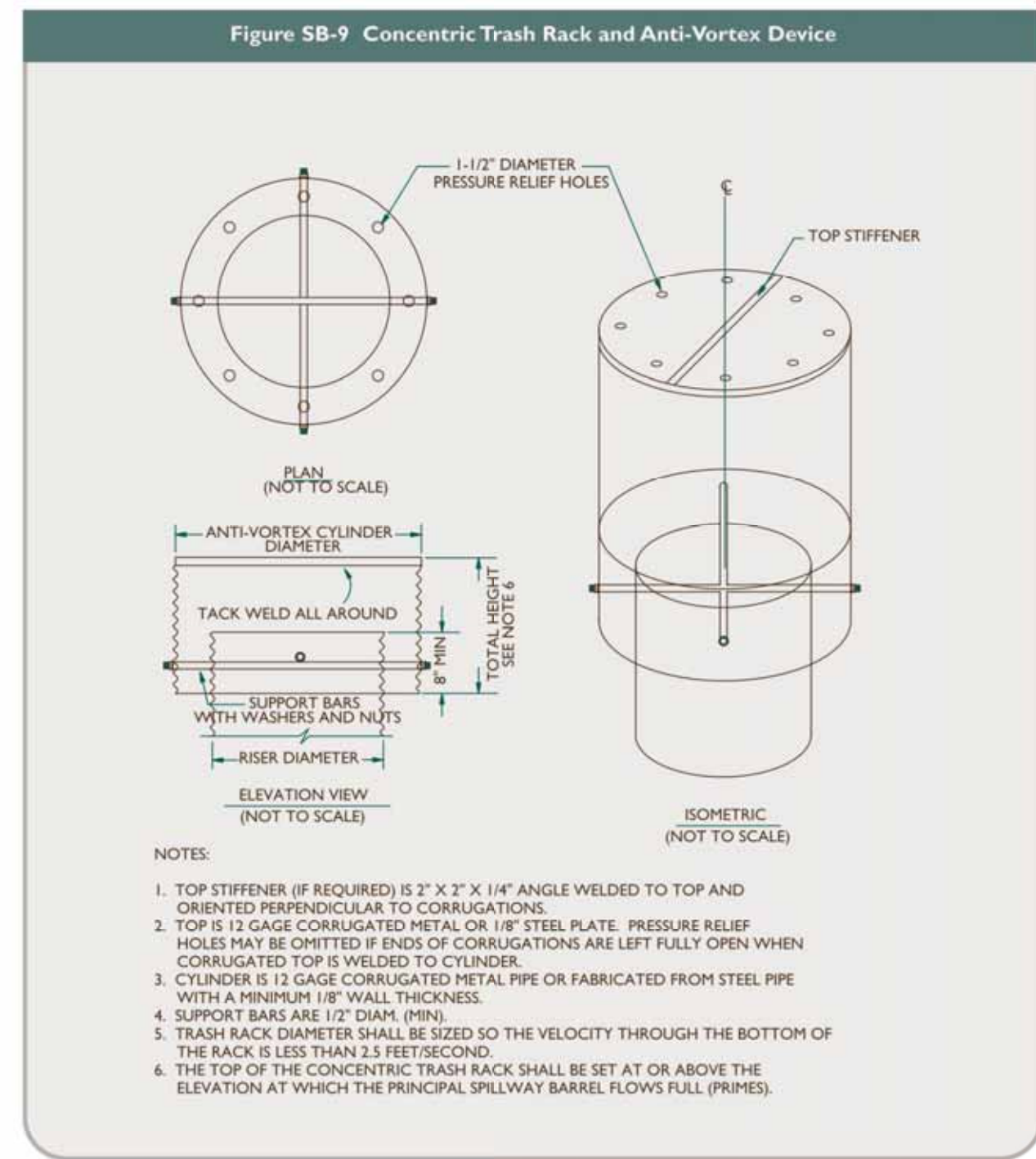
PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal for Darin Galloway, State of Connecticut, No. 34152]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

TITLE: GRADING & DRAINAGE DETAILS

SHEET: G&D-303





Source: USDA-NRCS

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

5-11-17

5-11-18

5-11-16

2002 Connecticut Guidelines for Soil Erosion and Sediment Control



| REV | DESCRIPTION | DATE |
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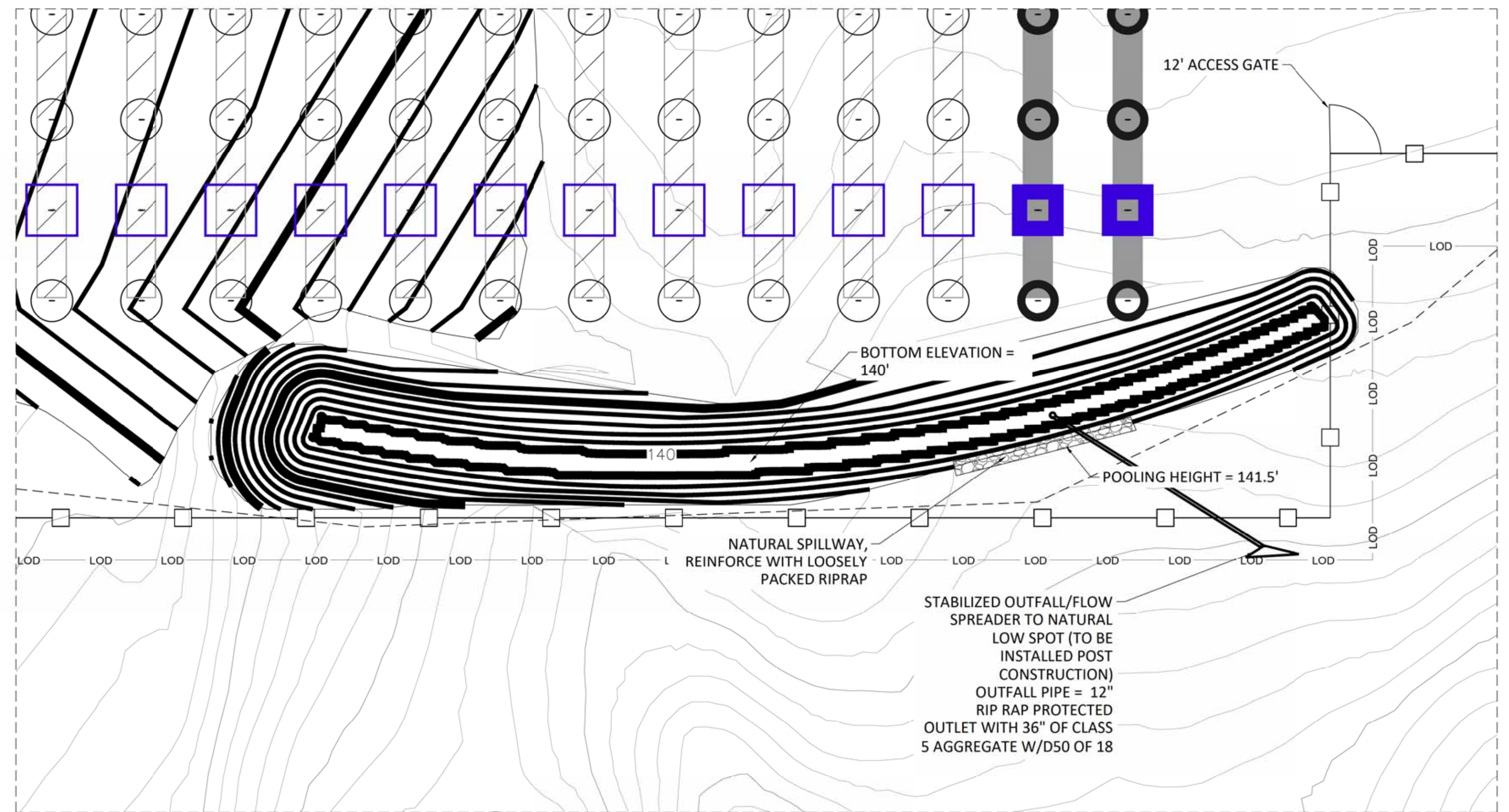
PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
ELLA WHEELER RD.
NORTH STONINGTON, CT 06359
41° 25' 9.71"N, 71° 50' 4.83"W

SEAL: [Professional Engineer Seal]
DATE: 22-JUL-20
PROJECT #: 20200309_CT
DRAWN BY: MMM
CHECKED BY: DRG

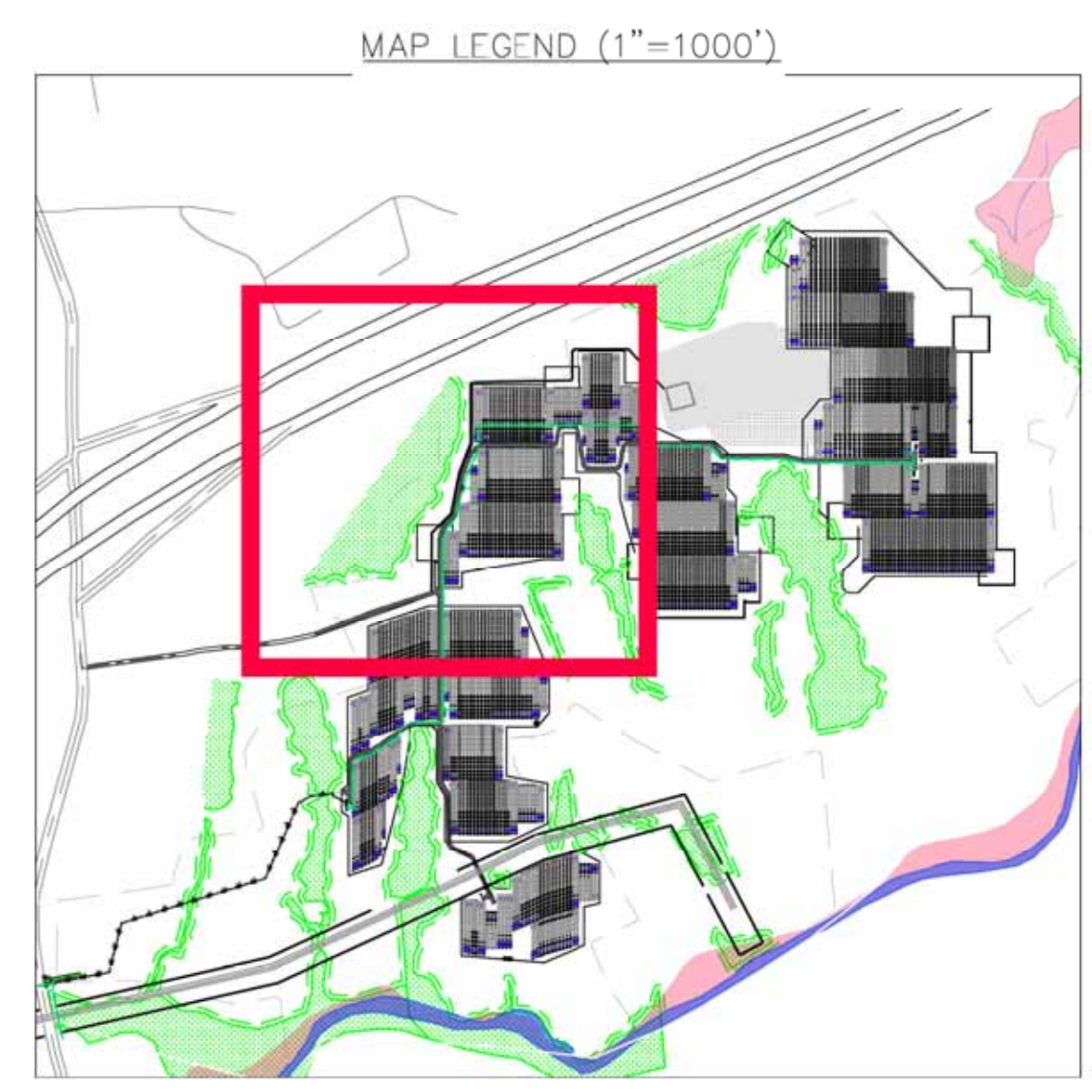
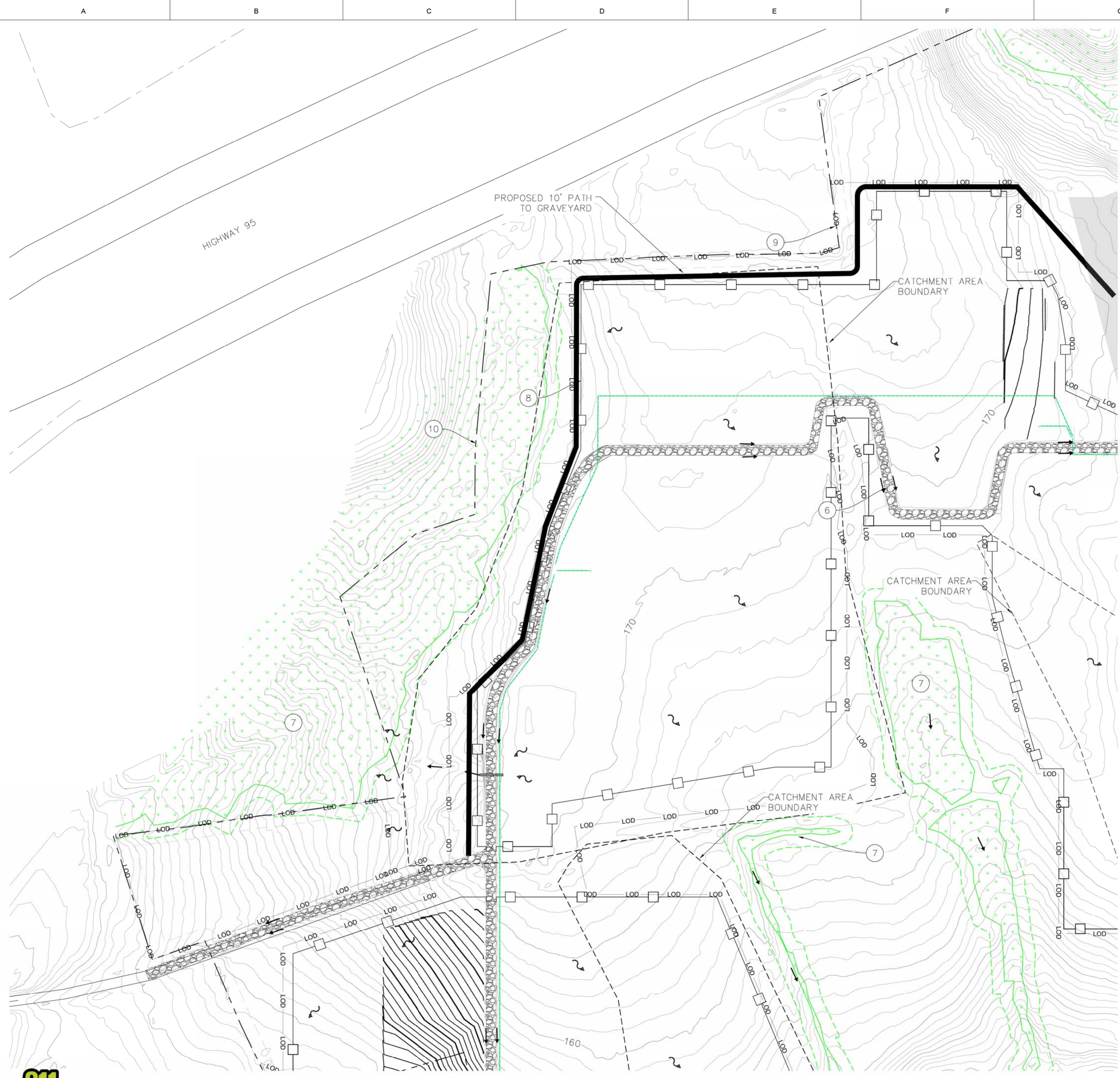
TITLE: GRADING & DRAINAGE DETAILS
SHEET: G&D-304

1 SPILLWAY AND OUTFALL DETAILS
G&D-304 Scale: 1"=20'



2 DRY STORMWATER DETENTION SWALE
G&D-304 Scale: 1"=20'





LEGEND

- ⑥ [Symbol] PROPOSED SITE ACCESS ROAD
- ⑦ [Symbol] WETLAND W/BUFFER
- ⑧ [Symbol] SITE FENCE LINE
- ⑨ [Symbol] SITE LIMIT OF DISTURBANCE
- ⑩ [Symbol] SITE BOUNDARY
- [Symbol] CHANNLED FLOW
- [Symbol] SHEET FLOW



| REV | DESCRIPTION | DATE |
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PROJECT NAME:
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 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

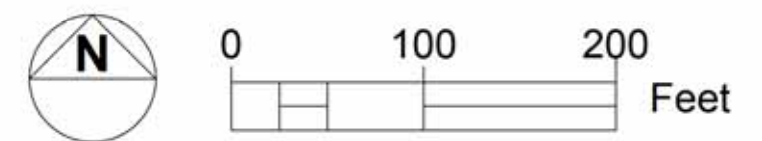
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

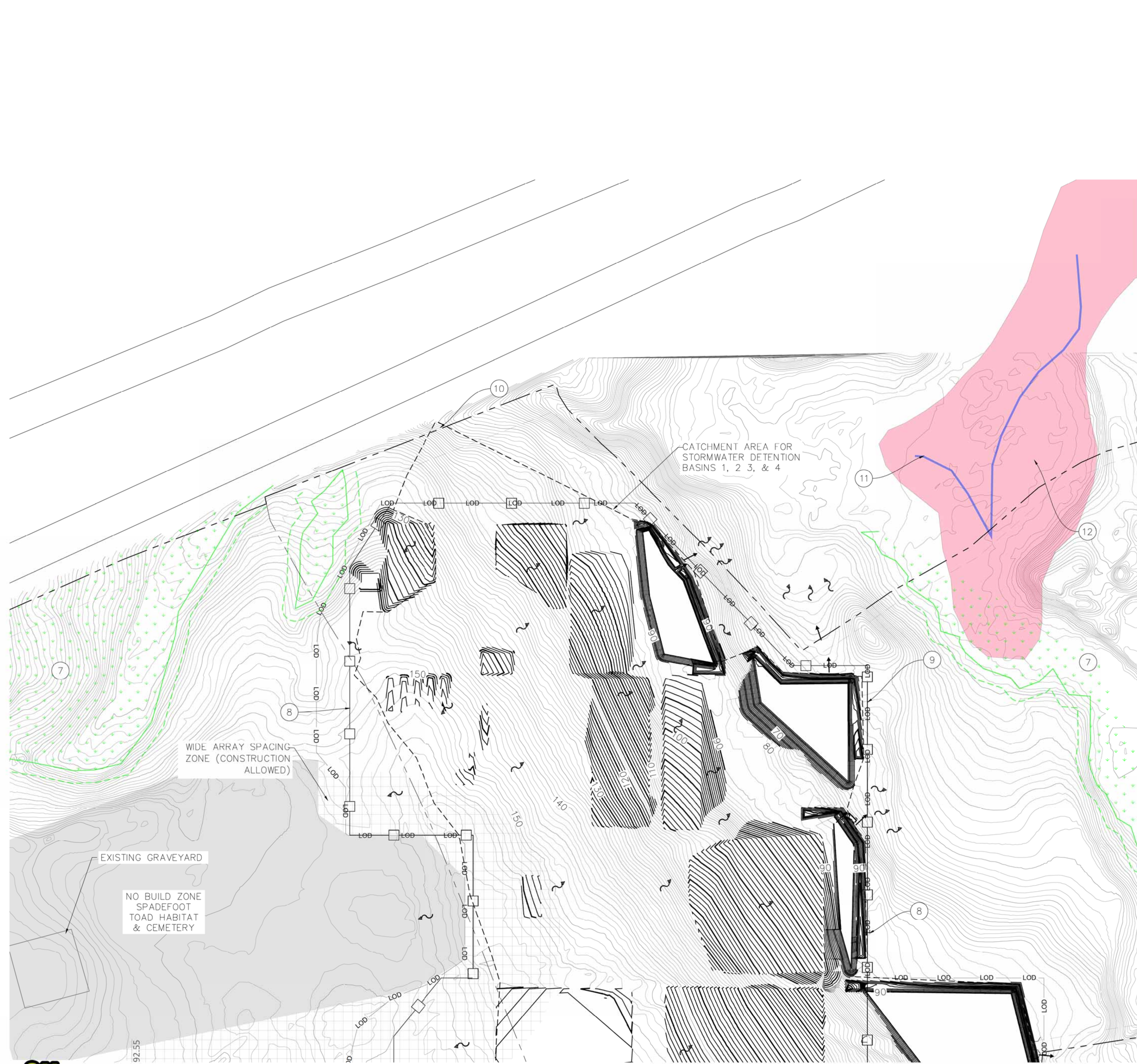
TITLE:
STORMWATER MANAGEMENT PLAN

SHEET:
 SWMP-201



1 **STORMWATER MANAGEMENT PLAN**
 SWMP-201 Scale: 1" = 100'





LEGEND

- ⑥ [Symbol] PROPOSED SITE ACCESS ROAD
- ⑦ [Symbol] WETLAND W/BUFFER
- ⑧ [Symbol] SITE FENCE LINE
- ⑨ [Symbol] SITE LIMIT OF DISTURBANCE
- ⑩ [Symbol] SITE BOUNDARY
- [Symbol] CHANNELED FLOW
- [Symbol] SHEET FLOW



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|------------------------------------|------------------------|
| SEAL: [Professional Engineer Seal] | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
STORMWATER MANAGEMENT PLAN

SHEET:
 SWMP-202





LEGEND

| | | |
|----|--|---------------------------|
| 6 | | PROPOSED SITE ACCESS ROAD |
| 7 | | WETLAND W/BUFFER |
| 8 | | SITE FENCE LINE |
| 9 | | SITE LIMIT OF DISTURBANCE |
| 10 | | SITE BOUNDARY |
| | | CHANNELED FLOW |
| | | SHEET FLOW |



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
| 0 | 60% FOR CLIENT REVIEW | 05/08/2020 |
| 1 | 60% FOR CLIENT REVIEW | 06/11/2020 |
| 2 | 90% ISSUED FOR CLIENT REVIEW | 06/30/2020 |
| 3 | IFC (DRAFT FOR REVIEW) | 07/02/2020 |
| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

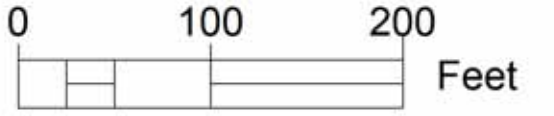
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|-----------|---------------------------|
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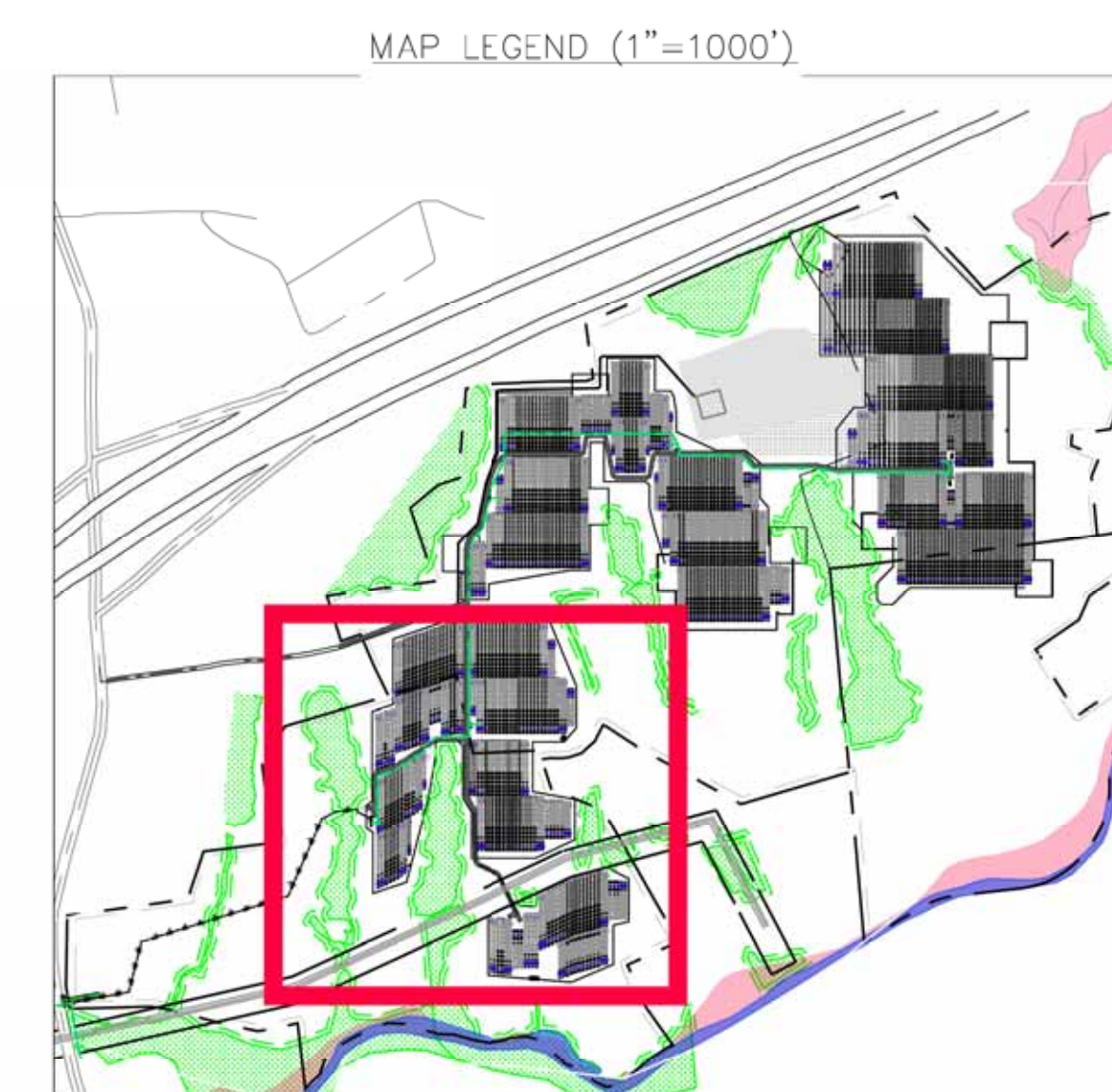
TITLE:
STORMWATER MANAGEMENT PLAN

SHEET:
 SWMP-203



1 **STORMWATER MANAGEMENT PLAN**
 SWMP-203 Scale: 1" = 100'





LEGEND

- ⑥ PROPOSED SITE ACCESS ROAD
- ⑦ WETLAND W/BUFFER
- ⑧ SITE FENCE LINE
- ⑨ SITE LIMIT OF DISTURBANCE
- ⑩ SITE BOUNDARY
- CHANNLED FLOW
- ↺ SHEET FLOW



| REV | DESCRIPTION | DATE |
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| - | - | - |
| - | - | - |
| - | - | - |

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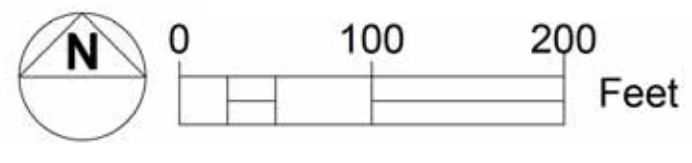
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

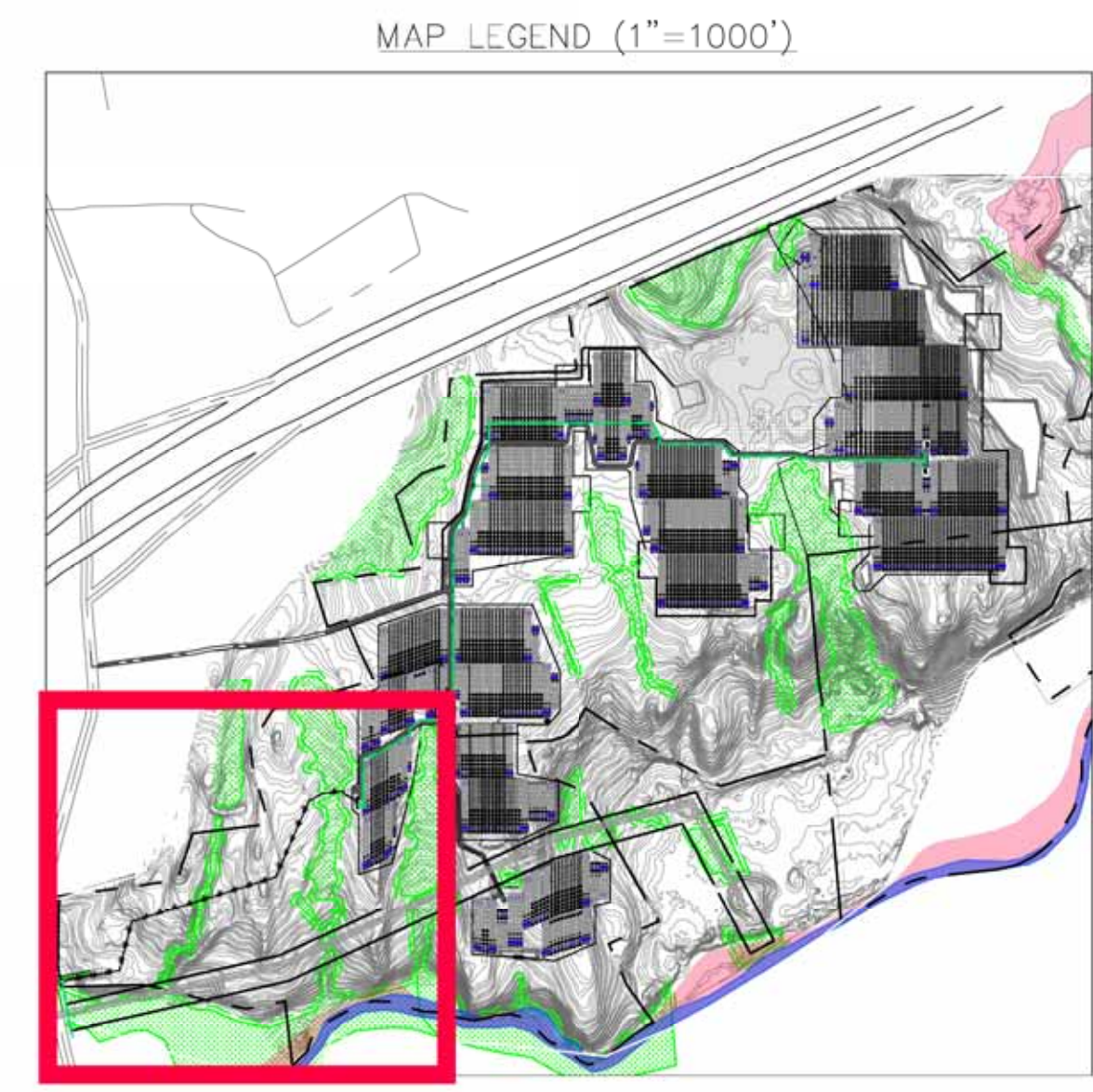
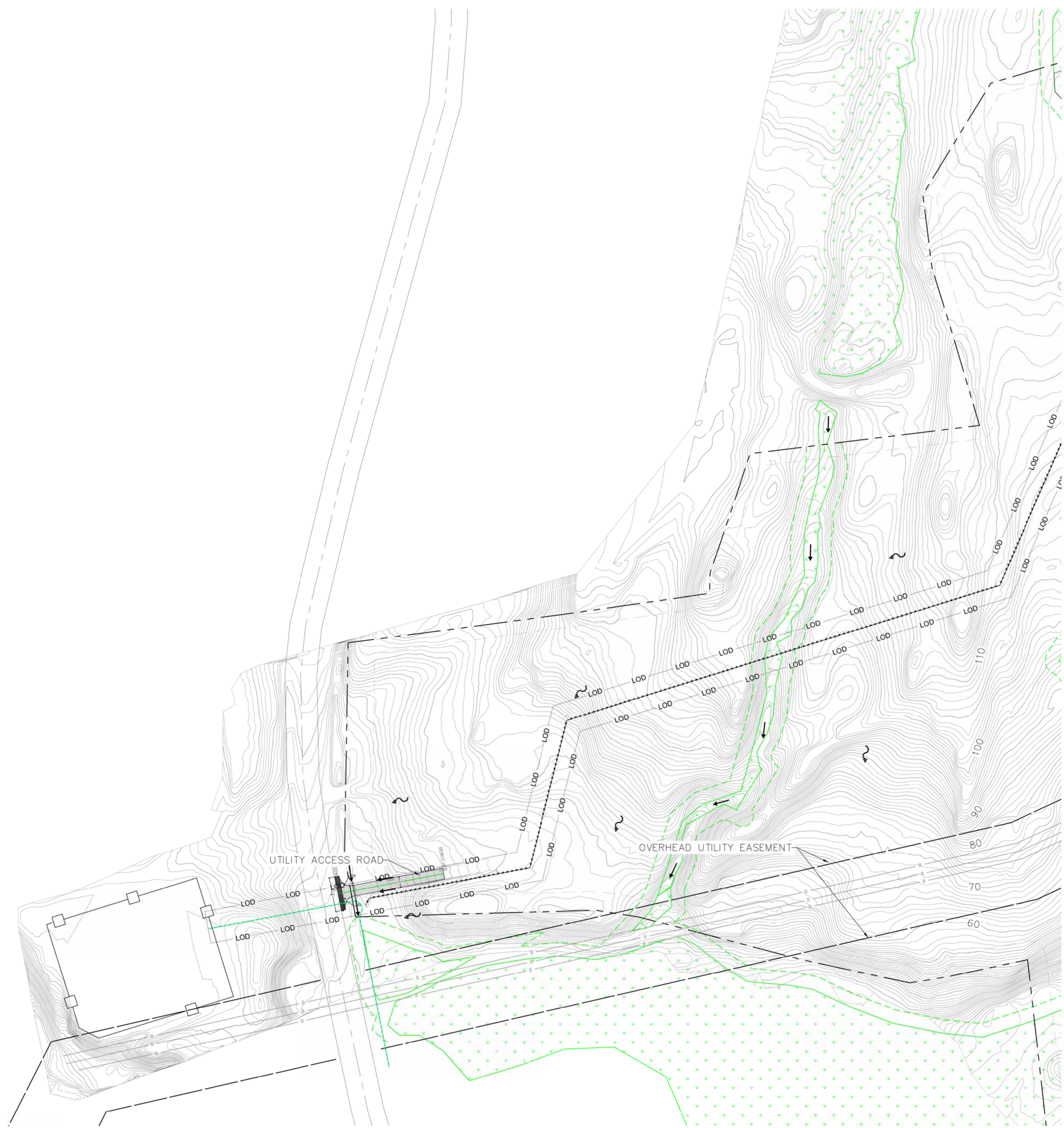
TITLE:
STORMWATER MANAGEMENT PLAN

SHEET:
 SWMP-204



1 **STORMWATER MANAGEMENT PLAN**
 SWMP-204 Scale: 1" = 100'





LEGEND

| | | |
|----|--|---------------------------|
| 6 | | PROPOSED SITE ACCESS ROAD |
| 7 | | WETLAND W/BUFFER |
| 8 | | SITE FENCE LINE |
| 9 | | SITE LIMIT OF DISTURBANCE |
| 10 | | SITE BOUNDARY |
| | | CHANNELED FLOW |
| | | SHEET FLOW |



| REV | DESCRIPTION | DATE |
|-----|----------------------------------|------------|
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| 4 | SITING COUNCIL INTERROGATORIES 1 | 07/22/2020 |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

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PROJECT NAME:
STONINGTON SOLAR PROJECT

PROJECT ADDRESS:
 ELLA WHEELER RD.
 NORTH STONINGTON, CT 06359
 41° 25' 9.71"N, 71° 50' 4.83"W

| | |
|-------|------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

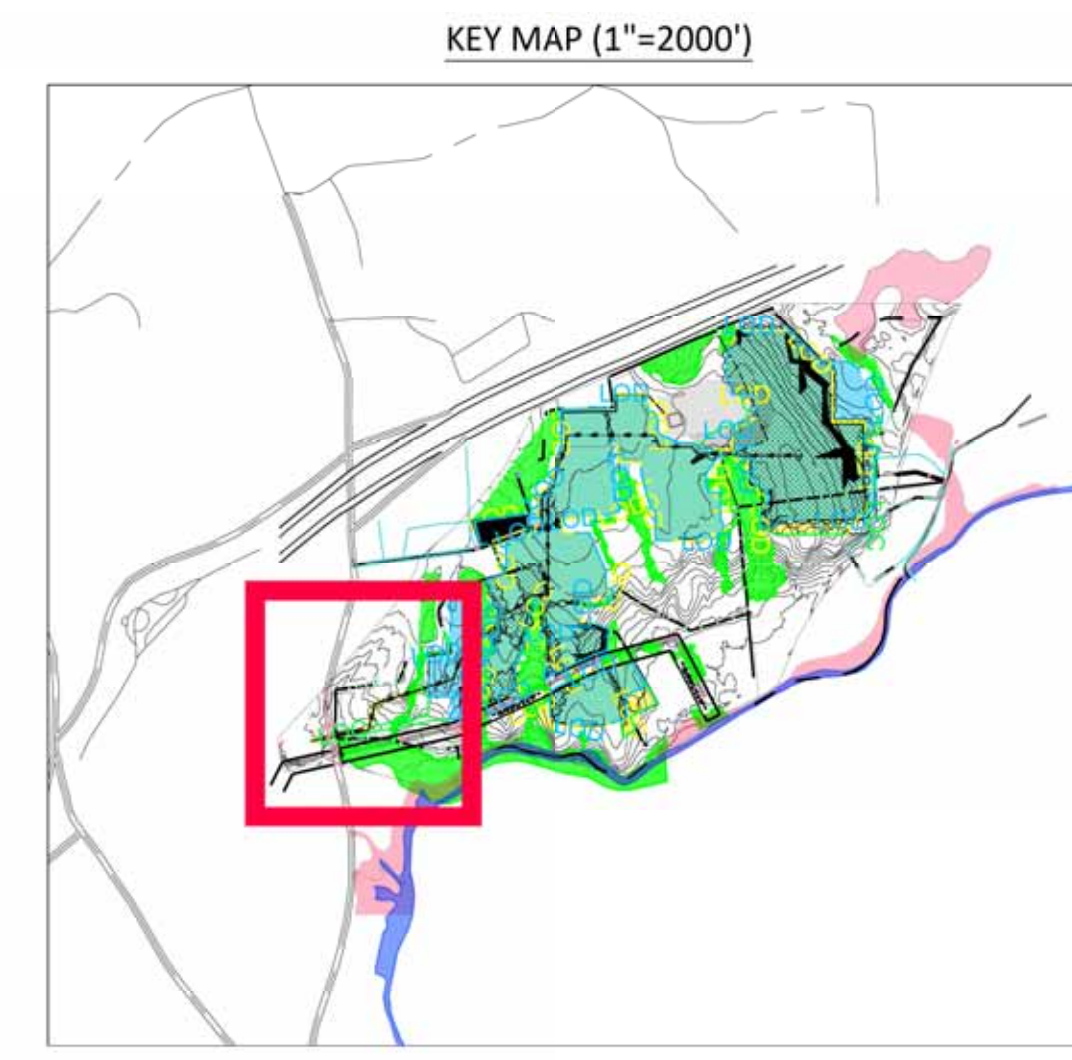
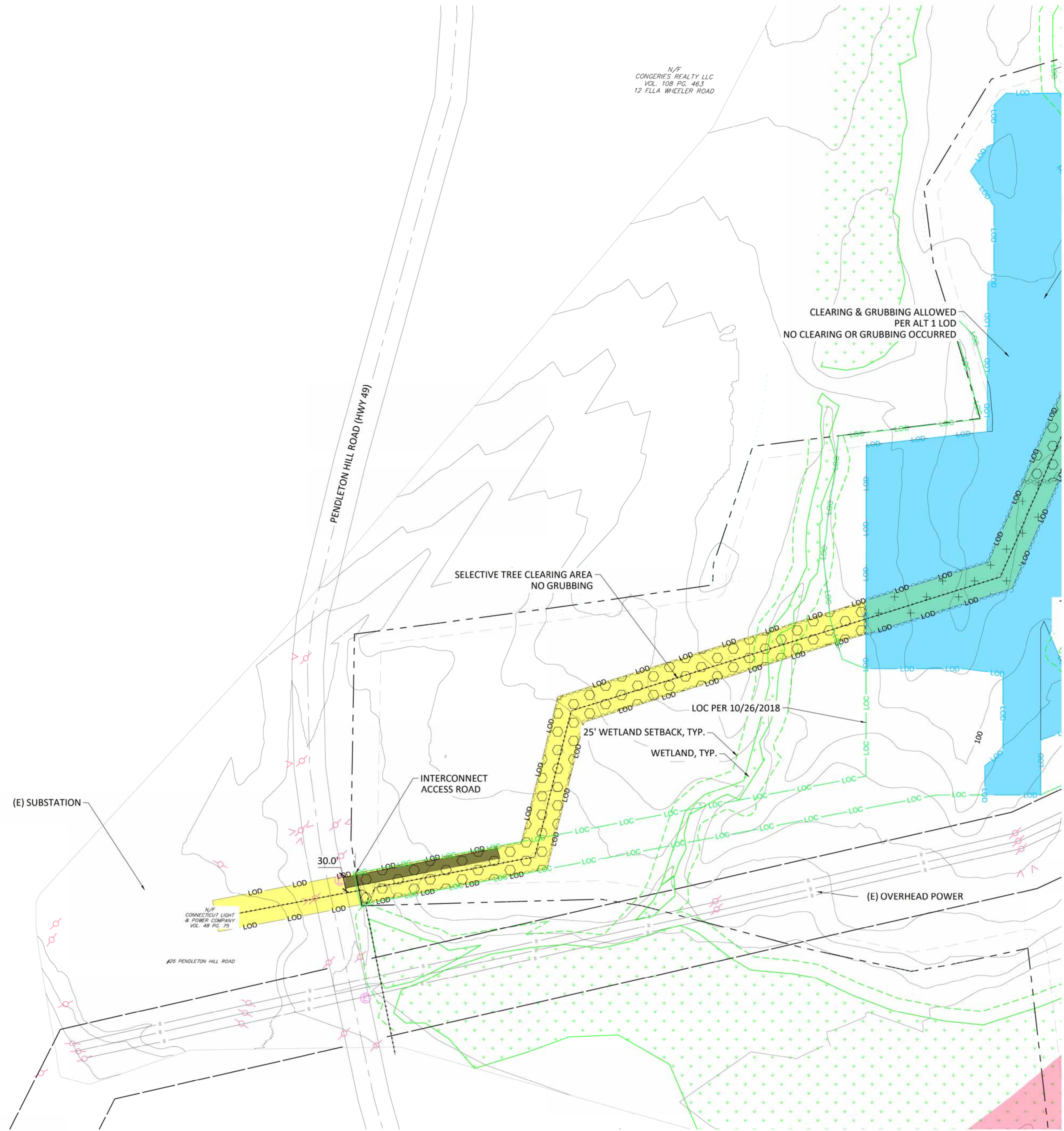
TITLE:
STORMWATER MANAGEMENT PLAN

SHEET:
 SWMP-205



1 **STORMWATER MANAGEMENT PLAN**

SWMP-205 Scale: 1" = 100'



LEGEND

- AC — (N) UG AC WIRE
- OH — OVERHEAD POWER
- OVERHEAD POWER POLE
- ▨ PROPOSED SITE ACCESS ROAD
- ▨ WETLAND W/BUFFER
- SITE FENCE LINE
- LOD — SITE LIMIT OF DISTURBANCE — ALT 1
- LOD — SITE LIMIT OF DISTURBANCE — ALT 2
- CLEARING, NO GRUBBING AREA
- NO CLEARING, NO GRUBBING AREA
- CLEARING & GRUBBING AREA
- RIVER OR CREEK
- 100 YEAR FLOOD ZONE
- ▨ SITE ENTRANCE ROAD
- ▨ TREE CLEARING (GRUBBING)
- ▨ TREE CLEARING (NO GRUBBING)
- ▨ TREE CLEARING (SELECTIVE)
- OVERHEAD POWER LINE
- 75 — (E) MAJOR CONTOUR
- 76 — (E) MINOR CONTOUR
- 75 — (N) MAJOR CONTOUR
- 76 — (N) MINOR CONTOUR



| REV | DESCRIPTION | DATE |
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|-----------|---------------------------|
| SEAL: | DATE: 22-JUL-20 |
| | PROJECT #: 20200309_CT |
| | DRAWN BY: MMM |
| | CHECKED BY: DRG |

TITLE:
 CLEARING PLAN

SHEET:
 CL-205



1 CLEARING PLAN
 CL-205 Scale: 1" = 100'