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# SUNPIN ENERGY SERVICES, LLC

## 4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT

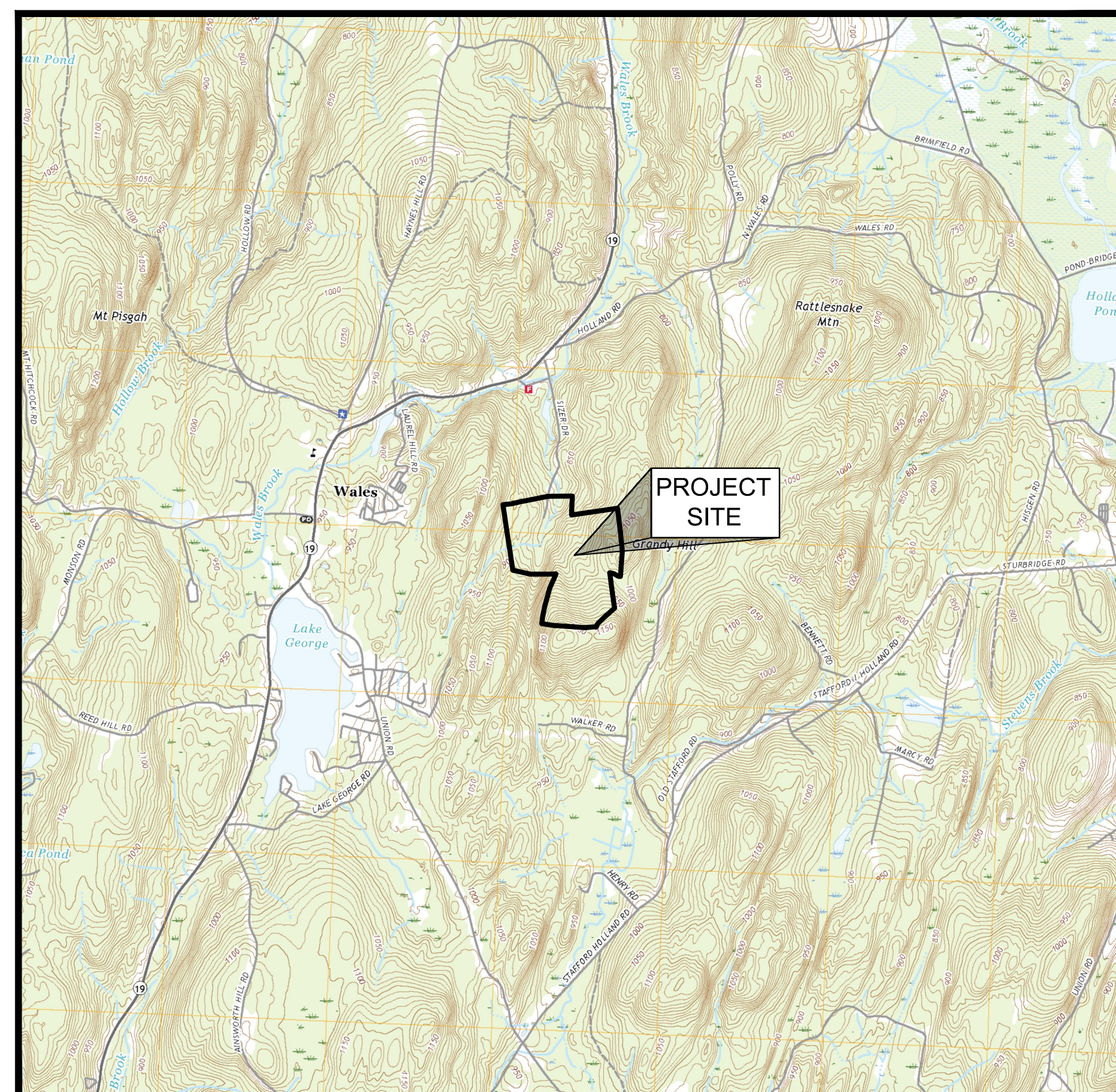
### 40 SIZER DRIVE

### WALES, MASSACHUSETTS

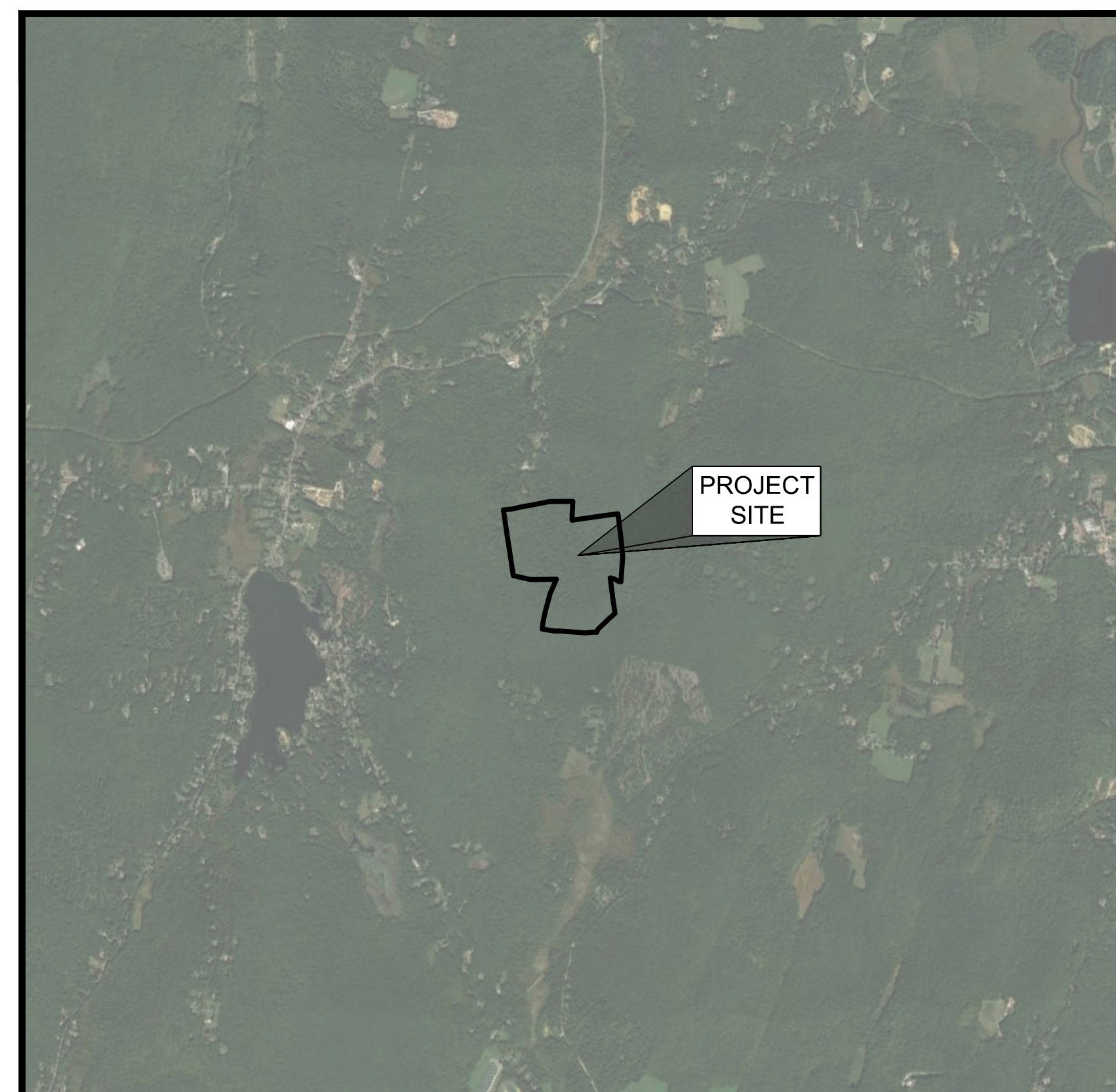
### APRIL 29, 2021

### LAST REVISED SEPTEMBER 24, 2021

### ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



LOCUS MAP  
NOT TO SCALE



AERIAL IMAGE  
NOT TO SCALE

#### DRAWING INDEX

| SHEET NUMBER | DRAWING TITLE   | DRAWING NUMBER |
|--------------|---|----------------|
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#### PROPERTY OWNER

**CINDY BOUCHER**  
40 SIZER DRIVE  
WALES, MASSACHUSETTS 01081

#### DEVELOPED BY

**SUNPIN ENERGY SERVICES, LLC**



12424 WILSHIRE BOULEVARD, #750  
LOS ANGELES, CA 90025

#### PREPARED BY



**WOOD MASSACHUSETTS, INC.**  
271 MILL ROAD  
CHELMSFORD, MASSACHUSETTS 01824

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MATERIAL SPECIFICATIONS AND PLACEMENT REQUIREMENTS:

1.1 ANGULAR ROCK FILL

ANGULAR ROCK FILL SHALL BE USED FOR THE CONSTRUCTION ENTRANCE AS SHOWN ON THE DRAWINGS, AND SHALL MEET THE GRADATION REQUIREMENTS LISTED BELOW.

Table with 2 columns: U.S. STANDARD SIEVE, PERCENT PASSING. Rows include 3 INCH (100), 2 INCH (80 - 100), 1 INCH (50 - 80), NO. 200 (0 - 10).

PRIOR TO USE, THE ANGULAR ROCK FILL SHALL BE TESTED FOR APPROVAL AS DESCRIBED IN SECTION 2.0 AND SHALL BE PLACED AS DESCRIBED IN SECTION 3.0.

1.2 DENSE GRADED CRUSHED STONE

DENSE GRADED CRUSHED STONE SHALL BE USED TO CONSTRUCT THE CRUSHED STONE ACCESS ROAD, AND SHALL MEET THE REQUIREMENTS OF A MATERIAL SUCH AS MASSDOT SPECIFICATION M2.01.7 CRUSHED STONE, OR APPROVED EQUAL.

Table with 2 columns: SIEVE DESIGNATION, PERCENT PASSING. Rows include 2-INCH (100), 1.5-INCH (70-100), 3/4-INCH (50-85), NO. 4 (30-55), NO. 50 (8-24), NO. 200 (3-10).

PRIOR TO USE, THE DENSE GRADED CRUSHED STONE SHALL BE TESTED FOR APPROVAL AS DESCRIBED BELOW IN SECTION 2.0 AND SHALL BE PLACED AS DESCRIBED BELOW IN SECTION 3.0.

1.3 GRANULAR FILL MATERIAL

CLEAN GRANULAR FILL MAY BE USED FOR FILL OR GRADING MATERIAL. GRANULAR FILL SHALL CONSIST OF MASSDOT MATERIAL M1.03.0, GRAVEL BORROW, TYPE C, OR APPROVED EQUAL, AND MEET THE FOLLOWING GRADATION:

Table with 2 columns: SIEVE DESIGNATION, PERCENT PASSING. Rows include 2-INCH (100), 3/4-INCH (50-85), NO. 4 (40-75), NO. 50 (8-28), NO. 200 (0-10).

PRIOR TO USE, THE GRANULAR FILL SHALL BE TESTED FOR APPROVAL AS DESCRIBED IN SECTION 2.0 AND SHALL BE PLACED AS DESCRIBED IN SECTION 3.0.

1.4 LOAM BORROW MATERIAL

THE LOAM BORROW SHALL CONFORM TO MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, DIVISION III - MATERIALS SPECIFICATIONS, SECTION M1.05.0 'LOAM BORROW'.

1.5 GEOTEXTILE FABRIC

FIBERS USED IN MANUFACTURING OF THE GEOTEXTILES SHALL CONSIST OF POLYPROPYLENE, POLYVINYL CHLORIDE, NYLON, POLYOLEFINS, POLYAMIDES, OR POLYESTER.

TABLE 1 REQUIRED PHYSICAL PROPERTIES OF GEOTEXTILE FABRIC

Table with 4 columns: PROPERTY, TEST METHOD, NON-WOVEN, WOVEN. Rows include MASS PER UNIT AREA, GRAB TENSILE STRENGTH, TENSILE STRENGTH, ELONGATION, PUNCTURE STRENGTH, TRAPEZOID TEAR, PERMITTIVITY, WATER FLOW RATE, ULTRAVIOLET STABILITY, APPARENT OPENING SIZE.

TABLE NOTES:

- 1. ALL NUMERICAL VALUES EXCEPT AOS AND ULTRAVIOLET STABILITY REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV), IN THE WEAKER PRINCIPAL DIRECTION.
2. AOS VALUE IS A MAXIMUM AVERAGE ROLL VALUE OR MAXARV.
3. ULTRAVIOLET STABILITY IS MEASURED AS A MINIMUM AVERAGE PERCENTAGE.
4. SEE DETAILS ON DRAWING C-501 FOR LOCATIONS OF WOVEN AND NON-WOVEN GEOTEXTILES.

2.0 BORROW SOURCE TESTING REQUIREMENTS

PRIOR TO USE, BORROW SOURCE TESTING, INCLUDING GEOTECHNICAL CHARACTERIZATION REQUIREMENTS, SHALL BE CONDUCTED ON ALL SOIL MATERIALS PROPOSED FOR CONSTRUCTION AND SUBMITTED TO THE ENGINEER TO ASSESS CONFORMANCE TO MATERIAL SPECIFICATIONS.

3.0 MATERIAL PLACEMENT AND FIELD QUALITY CONTROL REQUIREMENTS

- 1. FILL MATERIAL SHALL NOT BE PLACED ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
2. SURFACES ON WHICH THE GEOTEXTILE WILL BE PLACED SHALL BE PREPARED TO A RELATIVELY SMOOTH SURFACE CONDITION. SURFACES SHALL BE FREE FROM OBSTRUCTION, DEBRIS, DEPRESSIONS, EROSION FEATURE, OR VEGETATION.
3. AT THE TIME OF INSTALLATION, FABRIC SHALL BE REJECTED IF IT HAS DEFECTS, RIPS, HOLES, FLAWS, DETERIORATION OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORT OR STORAGE.
4. FABRIC SHALL BE PLACED WITH THE LONG DIMENSION PARALLEL TO THE CENTERLINE OF THE BALLASTS AND LAY SMOOTH AND FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES.
5. CRUSHED STONE FOR ACCESS ROADS SHALL BE PLACED IN MAXIMUM 6-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 92% OF MAXIMUM DRY DENSITY.
6. LOAM BORROW FOR BASIN A BERM SHALL BE PLACED IN MAXIMUM 6-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 92% OF MAXIMUM DRY DENSITY.

EROSION AND SEDIMENTATION CONTROL PLAN:

THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROPOSED PROJECT.

THIS PLAN IS BASED ON STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN DEVELOPING AREAS AS CONTAINED IN MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, 2003.

GENERAL EROSION AND SEDIMENTATION CONSTRUCTION DETAIL NOTES:

SEE DRAWING C-101 FOR SEDIMENT AND EROSION CONTROL CONSTRUCTION SEQUENCING, DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO SCHEDULE EARTHWORK OPERATIONS SUCH THAT THE AREA OF EXPOSED AND DISTURBED SOIL IS MINIMIZED.

PRIOR TO GRUBBING OR ANY EARTH MOVING OPERATION, SEDIMENT BARRIERS, OR OTHER APPROPRIATE PERIMETER CONTROL, BEST MANAGEMENT PRACTICES (BMPs) SHALL BE INSTALLED ACROSS THE SLOPE ON THE CONTOUR AT THE DOWNHILL LIMIT OF THE WORK AS PROTECTION AGAINST CONSTRUCTION RELATED EROSION.

- 1. PERMANENT SOIL STABILIZATION MEASURES FOR ALL SLOPES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN FOURTEEN CALENDAR DAYS AFTER FINAL GRADING HAS BEEN COMPLETED.
2. ANY EXPOSED SLOPES 3:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS (ERONET C125 BY NORTH AMERICAN GREEN, OR APPROVED EQUAL) TO PREVENT EROSION DURING CONSTRUCTION AND TO FACILITATE REVEGETATION AFTER TOPSOILING AND SEEDING.
3. EXISTING TOPSOIL SHALL BE SAVED, STOCKPILED, AND REUSED AS MUCH AS POSSIBLE ON SITE.
4. INTERCEPTED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SEDIMENT BARRIER, OR AS DIRECTED IN THE DRAWING DETAILS FOR OTHER BMPs.
5. SOIL CUTTINGS GENERATED DURING THE DRILLING OF PILOT HOLES FOR GROUND SCREWS SHALL BE REMOVED AND COLLECTED.
6. ADDITIONAL EROSION CONTROL METHODS SHALL BE IMPLEMENTED IF CONSTRUCTION OCCURS AFTER DECEMBER 15TH.
7. GENERAL EROSION AND SEDIMENTATION CONTROL ACTIONS SHALL INCLUDE THE FOLLOWING:
- MARK SOIL DISTURBANCE LIMITS
- INSTALL SEDIMENT BARRIERS BEFORE DISTURBING ANY SOILS
- DIVERT AND DISPERSE STORM WATER RUNOFF TO UNDISTURBED AREAS WHEREVER POSSIBLE
- MULCH DISTURBED AREAS
- PROTECT STEEP SLOPES
- INSPECT AND REPAIR EROSION CONTROLS AND SEDIMENT BARRIERS

DUST CONTROL:

- 1. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO MINIMIZE THE AREA OF DISTURBED SOIL THAT IS EXPOSED AT ONE TIME.
2. DUST CONTROL SHALL BE USED ON CONSTRUCTION ROUTES AND OTHER DISTURBED AREAS SUBJECT TO SURFACE DUST MOVEMENT AND DUST BLOWING.
3. MAINTAIN DUST CONTROL MEASURES PROPERLY THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. DUST CONTROL METHODS SHALL BE APPROVED BY THE ENGINEER AND MAY INCLUDE VEGETATIVE COVER, MULCH (INCLUDING GRAVEL MULCH), SPRINKLING, STONE, AND BARRIERS.
5. VEGETATIVE COVER - FOR DISTURBED AREAS NOT SUBJECT TO TRAFFIC, VEGETATION PROVIDES THE MOST PRACTICAL METHOD OF DUST CONTROL.
6. MULCH (INCLUDING GRAVEL MULCH) - WHEN PROPERLY APPLIED, MULCH OFFERS A FAST, EFFECTIVE MEANS OF CONTROLLING DUST.
7. SPRINKLING - EXPOSED SOILS MAY BE SPRINKLED UNTIL THE SURFACE IS WET.
8. STONE - USED TO STABILIZE CONSTRUCTION ROADS; CAN ALSO BE EFFECTIVE FOR DUST CONTROL.
9. BARRIERS - A BOARD FENCE, WIND FENCE, SEDIMENT FENCE, OR SIMILAR BARRIER CAN CONTROL AIR CURRENTS AND BLOWING SOIL.

MONITORING PROGRAM:

- 1. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.25 INCHES OR GREATER.
2. FOLLOWING THE FINAL SEEDING, THE SITE SHALL BE INSPECTED IN ACCORDANCE WITH THE SCHEDULE OUTLINED IN #1 ABOVE, TO ENSURE THAT THE VEGETATION HAS BEEN ESTABLISHED (70% COVER ACHIEVED).
3. AFTER THE CONSTRUCTION INSPECTOR HAS DETERMINED THAT THE PROJECT AREA HAS BEEN PERMANENTLY STABILIZED (70% COVER HAS BEEN ACHIEVED OR NON-VEGETATED MEASURES HAVE BEEN IMPLEMENTED), THE CONTRACTOR SHALL REMOVE ALL SEDIMENT BARRIERS, TEMPORARY SEDIMENTATION CONTROL RISERS AND ANY OTHER TEMPORARY EROSION CONTROL MEASURES.

SEEDING AND REVEGETATION PLAN:

IMMEDIATELY FOLLOWING THE COMPLETION OF TREE CLEARING, ALL DISTURBED AREAS SHALL BE TREATED AS STATED BELOW IN ORDER TO MINIMIZE CONSTRUCTION-PERIOD EROSION.

APPLY SEED/TACKIFIER MIX ACCORDING TO THE FOLLOWING SPECIFICATIONS:

- 1. SEED: ERNST SEEDS QUICK EROSION CONTROL COVER MIX CONSISTING OF (% BY WEIGHT):
- 50% LOLIUM MULTIFLORUM (ANNUAL RYEGRASS)
- 50% LOLIUM PERENNE, 'BIGLEAGUE' (PERENNIAL RYEGRASS, 'BIGLEAGUE')
2. TACKIFIER: GEOPERM BONDED FIBER MATRIX (OR APPROVED EQUAL) APPLIED PER MANUFACTURER SPECIFICATIONS.

SEEDING RATE: 50 LBS PER ACRE

UPON COMPLETION OF SITE CONSTRUCTION, ALL AREAS PREVIOUSLY DISTURBED SHALL BE TREATED AS STATED BELOW. THESE AREAS WILL BE CLOSELY MONITORED BY THE CONTRACTOR UNTIL SUCH TIME AS A SATISFACTORY GROWTH OF VEGETATION IS ESTABLISHED.

APPLY SEED AS DIRECTED BELOW:
(APRIL 1ST THROUGH OCTOBER 1ST)
- SEED DISTURBED AREAS AT THE RATE OF 30 LBS PER ACRE OF ERNST SEEDS NORTHEAST SOLAR POLLINATOR 4 MIX CONSISTING OF (% BY WEIGHT):
- 35% BOUTELOUA CURTIPENDULA, BUTTE (SIDE-OATS GRAMA, BUTTE)
- 35% SCHIZACHYRIUM SCOPARIUM, 'CAMPER' LITTLE BLUESTEM, 'CAMPER'
- 10% PANICUM SPHAERONCARPON (ROUNDSEED PANICGRASS)
- 4% ASCLEPIAS TUBEROSA (BUTTERFLY MILKWEED)
- 4% CHAMAECRISTA FASCICULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE)
- 4% COREOPSIS LANCEOLATA (LANCELEAF COREOPSIS)
- 4% RUDECKIA HIRTA (BLACK-EYED SUSAN)
- 0.5% PYCNANTHEMUM TENUIFOLIUM (NARROWLEAF MOUNTAINMINT)
- 0.5% ASTER ORLONGIFOLIUS, (AROMATIC ASTER, PA ECOTYPE)
- 0.5% ASTER PRENANTHOIDES, PA ECOTYPE (ZIGZAG ASTER, PA ECOTYPE)
- 0.5% PENSTEMON DIGITALIS (TALL WHITE BEARDTONGUE)
- 0.5% TRADESCANTIA OHIENSIS (OHIO SPIDERWORT, PA ECOTYPE)
- 0.5% ZIZIA AUREA (GOLDEN ALEXANDERS)
- 0.3% OENOTHERA FRUTICOSA VAR. FRUTICOSA (SLINDROPS)
- 0.1% SOLIDAGO NEMORALIS, PA ECOTYPE (GRAY GOLDENROD, PA ECOTYPE)

(AFTER DECEMBER 15TH)
- DO NOT SEED.
- APPLY HAY MULCH AT THE RATE OF 100 LBS PER 1,000 SQ. FT.

- APPLY WOOD FIBER MULCH AT A RATE OF 2,000 LBS PER ACRE FOR MAXIMUM MOISTURE RETENTION.
- SEEDING SHALL HAVE A MINIMUM GERMINATION PERCENTAGE OF 85%.

- (NOVEMBER 1ST THROUGH DECEMBER 15TH)
- SEED DISTURBED AREAS AT THE RATE OF 3 LBS PER 1,000 SQ. FT. OF WINTER RYE
- APPLY HAY MULCH AT THE RATE OF 100 LBS PER 1,000 SQ. FT.

(AFTER DECEMBER 15TH)
- DO NOT SEED.
- APPLY HAY MULCH AT THE RATE OF 100 LBS PER 1,000 SQ. FT.

- 3. SEEDING METHODS MAY BE DRILL SEEDINGS, BROADCASTS AND ROLLED, CULTPACKED, OR TRACKED WITH A SMALL TRACK PIECE OF CONSTRUCTION EQUIPMENT, OR HYDRO-SEEDING, WITH SUBSEQUENT TRACKING.
4. WATERING MAY BE REQUIRED DURING DRY PERIODS CONSULT SEED MANUFACTURERS INSTRUCTIONS.
5. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEED IMMEDIATELY. CONDUCT A FOLLOW-UP SURVEY AFTER ONE YEAR AND RESEED WHERE NECESSARY.
6. ALL SEDIMENT CONTROL STRUCTURES LOCATED DOWN GRADIENT OF SOILS STABILIZED BY VEGETATIVE MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 70% OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.



WOOD MASSACHUSETTS, INC. 271 MILL ROAD CHELMSFORD MASSACHUSETTS 01824 TELEPHONE: (978) 692-9090 FAX: (978) 692-6633 WEB: WWW.WOODPLC.COM

Table with 6 columns: APV, MW, REVISED PER CONSERVATION COMMISSIONS, ISSUED TO CONSERVATION COMMISSION, CONSERVATION COMMISSION COMMENTS, CONSERVATION COMMISSION COMMENTS, ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION, APPROVED. Rows include dates from 09/24/2021 to 01/25/2021.

PROJECT: 4,493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT 40 SIZER DRIVE WALES, MASSACHUSETTS. TITLE: CONSTRUCTION, EROSION, AND SEDIMENTATION CONTROL NOTES.

SUNPIN ENERGY SERVICES, LLC. SUNPIN logo with tagline 'Securing a brighter future through solar'. CLIENT: SUNPIN ENERGY SERVICES, LLC.

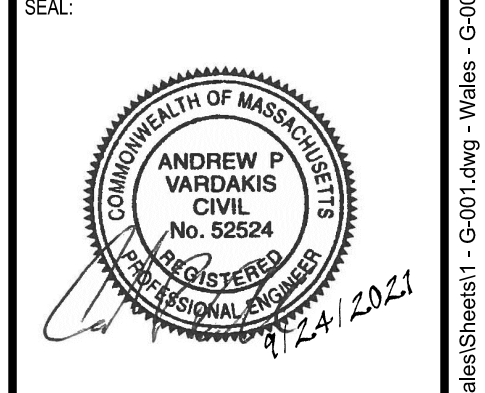
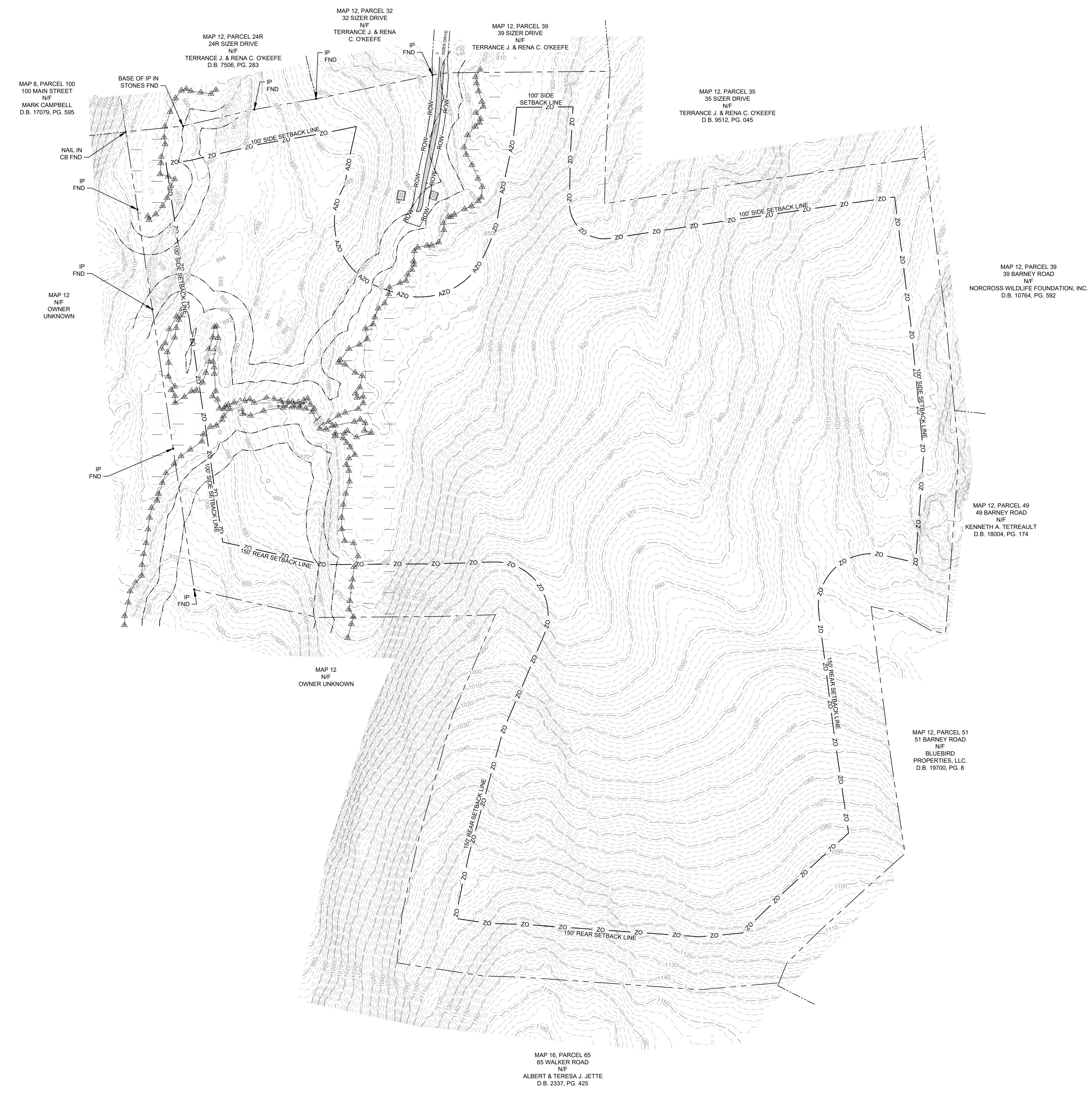


Table with 2 columns: DESIGNED BY, DRAWN BY, CHECKED BY, SCALE, PROJECT NUMBER, DRAWING NUMBER, SHEET NUMBER. Values include MJW, DED, APV, AS SHOWN, 3652200259, G-001, 1 OF 11.

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



NOTES:  
1. ELECTRONIC BASE PLAN FROM ANDREWS SURVEY & ENGINEERING, INC., 104 MENDON STREET, PO BOX 312, UXBRIDGE, MA 01569.



**LEGEND:**

|         |                                   |
|---------|-----------------------------------|
| ---     | PROPERTY LINE                     |
| - - - - | ABUTTER'S PROPERTY LINE           |
| - - - - | APPROXIMATE RIGHT-OF-WAY          |
| —ROW—   | ROW                               |
| —850—   | MAJOR CONTOUR                     |
| —       | MINOR CONTOUR                     |
| —OHW—   | OVERHEAD ELECTRIC LINE            |
| —       | WETLAND LINE                      |
| —       | 50' WETLAND BUFFER                |
| —       | 100' WETLAND BUFFER               |
| —ZO—    | PROPERTY LINE SETBACK             |
| —AZO—   | APPROXIMATE PROPERTY LINE SETBACK |
| ▭       | WETLAND AREA                      |
| ▭       | PAVEMENT                          |
| ⊙       | UTILITY POLE                      |
| ⊙       | GUY POLE                          |
| △       | WETLAND FLAG                      |



| REVISION | DATE       | ISSUE / REVISION DESCRIPTION               |
|----------|------------|--|
| 5        | 09/24/2021 | CC PEER REVIEW                             |
| 4        | 06/29/2021 | REVISED PER CONSERVATION COMMISSIONS       |
| 3        | 05/20/2021 | ISSUED TO CONSERVATION COMMISSION          |
| 2        | 04/29/2021 | CONSERVATION COMMISSION COMMENTS           |
| 1        | 03/15/2021 | CONSERVATION COMMISSION COMMENTS           |
| 0        | 01/21/2021 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION |

PROJECT: **4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT**  
**40 SIZER DRIVE**  
**WALES, MASSACHUSETTS**

TITLE: **EXISTING CONDITIONS PLAN**

CLIENT: **SUNPIN ENERGY SERVICES, LLC**

SEAL:

|                              |                 |
|------------------------------|-----------------|
| DESIGNED BY: MJW             | DRAWN BY: DED   |
| CHECKED BY: APV              | SCALE: AS SHOWN |
| PROJECT NUMBER: 3652200259   |                 |
| DRAWING NUMBER: <b>V-101</b> |                 |
| SHEET NUMBER: <b>2 OF 11</b> |                 |

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**



SHEET C-102  
SHEET C-104

MAP 8, PARCEL 100  
100 MAIN STREET  
N/F  
MARK CAMPBELL  
D.B. 17079, PG. 595

MAP 12, PARCEL 24R  
24R SIZER DRIVE  
N/F  
TERRANCE J. & RENA C. O'KEEFE  
D.B. 7506, PG. 283

MAP 12, PARCEL 32  
32 SIZER DRIVE  
N/F  
TERRANCE J. & RENA C. O'KEEFE

MAP 12, PARCEL 39  
39 SIZER DRIVE  
N/F  
TERRANCE J. & RENA C. O'KEEFE

MAP 12, PARCEL 35  
35 SIZER DRIVE  
N/F  
TERRANCE J. & RENA C. O'KEEFE  
D.B. 9512, PG. 045

MAP 12, PARCEL 39  
39 BARNEY ROAD  
N/F  
NORCROSS WILDLIFE FOUNDATION, INC.  
D.B. 10764, PG. 592

MAP 12, PARCEL 49  
49 BARNEY ROAD  
N/F  
KENNETH A. TETREAU  
D.B. 19004, PG. 174

MAP 12, PARCEL 51  
51 BARNEY ROAD  
N/F  
BLUEBIRD  
PROPERTIES, LLC.  
D.B. 19700, PG. 8

MAP 12  
N/F  
OWNER  
UNKNOWN

MAP 12  
N/F  
OWNER  
UNKNOWN

SHEET C-103  
SHEET C-105

SHEET C-106

| PHASE | AREA (AC) |
|-------|-----------|
| 1     | 3.5       |
| 2     | 3.7       |
| 3     | 2.8       |
| 4     | 3.3       |

**SOIL EROSION & SEDIMENTATION CONTROL (SESC) CONSTRUCTION SEQUENCING:**

1. SURVEY AND FLAG LIMITS OF DISTURBANCE.
2. INSTALL PERIMETER EROSION CONTROL BARRIERS AND CONSTRUCTION EXIT. CONTRACTOR TO MAINTAIN AND SUPPLEMENT THROUGHOUT CONSTRUCTION WHERE EVIDENCE OF SEDIMENT EXTENDS BEYOND THE LIMIT OF DISTURBANCE (LOD).
3. CUT AND REMOVE TREES AND STUMPS WITHIN PROPOSED ACCESS ROAD AREA.
4. INSTALL WETLAND CROSSING CULVERT.

**PHASE START**

5. CUT AND REMOVE TREES AND STUMPS IN SEDIMENT TRAP AREA(S).
6. INSTALL TEMPORARY SEDIMENT TRAP(S).
7. COMPLETE TREE CUTTING, REMOVAL, AND STUMP GRINDING FOR REMAINDER OF PHASE AREA.
8. FOLLOWING TREE CUTTING, IMMEDIATELY APPLY HYDROSEED WITH TACKIFIER TO THE DISTURBED AREA IN ACCORDANCE WITH THE SEEDING AND REVEGETATION PLAN ON SHEET G-001.
9. REMOVE EXISTING PAVEMENT (IF APPLICABLE) AND SCARIFY UNDERLYING SOIL.
10. INSTALL THE CRUSHED STONE ACCESS ROAD.
11. INSTALL SOLAR POSTS, RACKING, PANELS, ELECTRICAL CONDUIT, EQUIPMENT, ETC.
12. REPAIR ANY RUTS OR RILLS PRESENT AS A RESULT OF CONSTRUCTION OPERATIONS.
13. OVERSEED THE SITE WITH POLLINATOR MIX IN ACCORDANCE WITH THE SEEDING AND REVEGETATION PLAN ON SHEET G-001.
14. FOLLOWING ESTABLISHMENT OF VEGETATION, INSTALL BIORETENTION BASIN(S).

**PHASE END**

15. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED WITH VEGETATION AND NO OBVIOUS EVIDENCE OF EROSION IN THE PROJECT LIMITS IS OBSERVED. ANY CONSTRUCTION SEDIMENT DISCOVERED BEYOND THE LOD SHALL BE PROMPTLY REMOVED AND DAMAGED EROSION CONTROLS SHALL BE REPAIRED. ONCE PROPER VEGETATION ESTABLISHMENT HAS OCCURRED, THE TEMPORARY SEDIMENT TRAPS AND SEDIMENT BARRIERS SHALL BE REMOVED.

**NOTES:**

1. ELECTRICAL DESIGN, INCLUDING UTILITY POLES, PERFORMED BY OTHERS. ELECTRICAL EQUIPMENT AND COMPONENTS SHOWN TO ILLUSTRATE LOCATIONS ONLY. REFER TO ELECTRICAL DRAWINGS FOR DETAILED ELECTRICAL SYSTEM INFORMATION.



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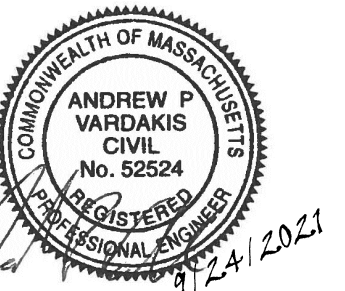
PROJECT:  
**4.493 MW DC GROUND-MOUNT SOLAR PV  
DEVELOPMENT  
40 SIZER DRIVE  
WALES, MASSACHUSETTS**

TITLE:  
**SHEET INDEX & PHASING PLAN**

CLIENT:  
**SUNPIN ENERGY  
SERVICES, LLC**



SCALE:



|                                 |                    |
|---------------------------------|--------------------|
| DESIGNED BY:<br>MJW             | DRAWN BY:<br>DED   |
| CHECKED BY:<br>APV              | SCALE:<br>AS SHOWN |
| PROJECT NUMBER:<br>3652200259   |                    |
| DRAWING NUMBER:<br><b>C-101</b> |                    |
| SHEET NUMBER:<br><b>3 OF 11</b> |                    |

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**

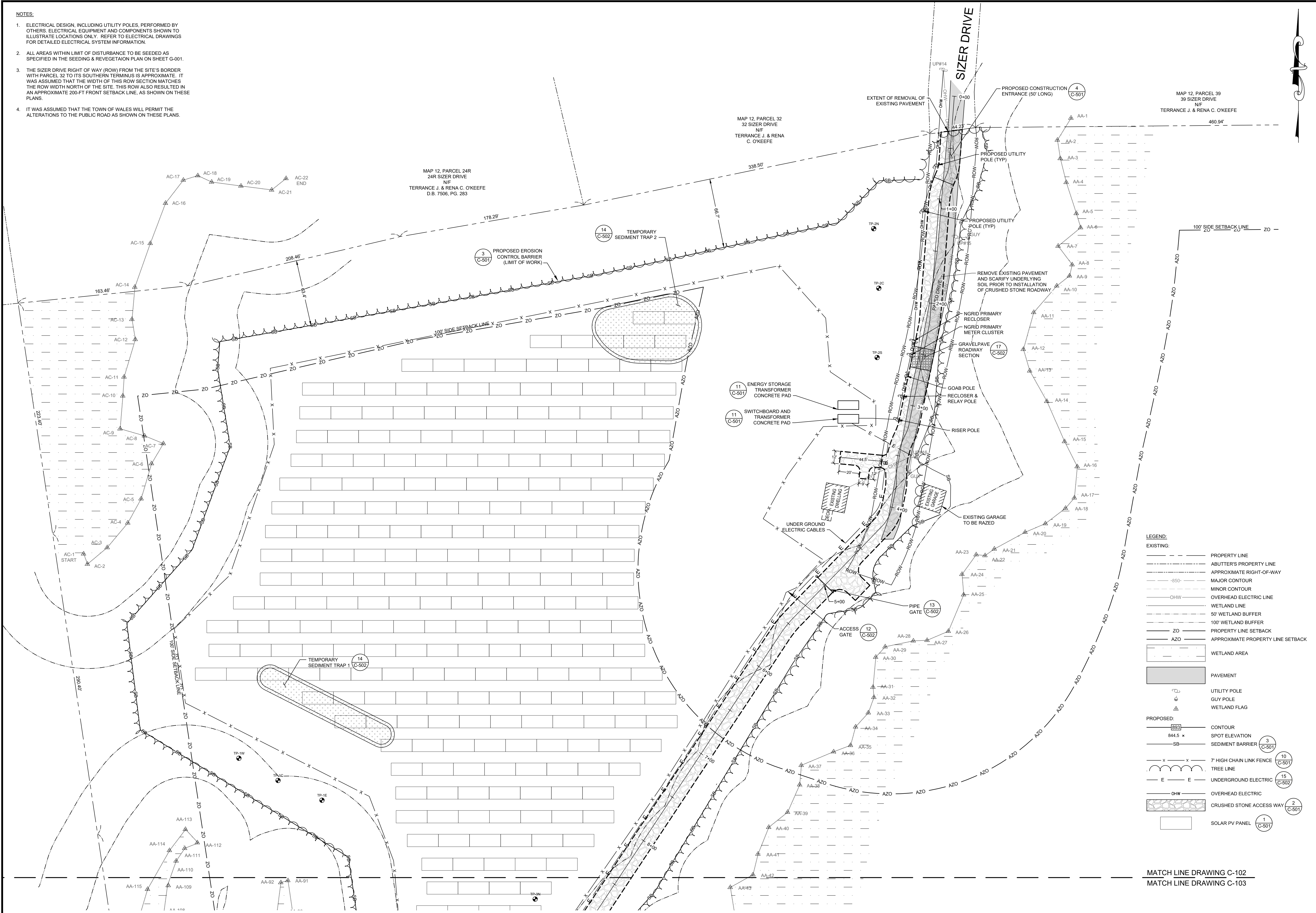


**NOTES:**

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- ALL AREAS WITHIN LIMIT OF DISTURBANCE TO BE SEEDED AS SPECIFIED IN THE SEEDING & REVEGETATION PLAN ON SHEET G-001.
- THE SIZER DRIVE RIGHT OF WAY (ROW) FROM THE SITE'S BORDER WITH PARCEL 32 TO ITS SOUTHERN TERMINUS IS APPROXIMATE. IT WAS ASSUMED THAT THE WIDTH OF THIS ROW SECTION MATCHES THE ROW WIDTH NORTH OF THE SITE. THIS ROW ALSO RESULTED IN AN APPROXIMATE 200-FT FRONT SETBACK LINE, AS SHOWN ON THESE PLANS.
- IT WAS ASSUMED THAT THE TOWN OF WALES WILL PERMIT THE ALTERATIONS TO THE PUBLIC ROAD AS SHOWN ON THESE PLANS.



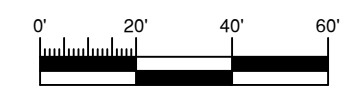
WOOD MASSACHUSETTS, INC.  
271 MILL ROAD CHELMSFORD  
MASSACHUSETTS 01864  
TELEPHONE: (978) 692-9090  
FAX: (978) 692-6633  
WEB: WWW.WOODPLC.COM



**LEGEND:**

| EXISTING: |                                     |
|-----------|-------------------------------------|
| ---       | PROPERTY LINE                       |
| - - - -   | ABUTTER'S PROPERTY LINE             |
| - . - . - | APPROXIMATE RIGHT-OF-WAY            |
| ---       | MAJOR CONTOUR                       |
| ---       | MINOR CONTOUR                       |
| ---       | OVERHEAD ELECTRIC LINE              |
| ---       | WETLAND LINE                        |
| ---       | 50' WETLAND BUFFER                  |
| ---       | 100' WETLAND BUFFER                 |
| ---       | PROPERTY LINE SETBACK               |
| ---       | APPROXIMATE PROPERTY LINE SETBACK   |
| ---       | WETLAND AREA                        |
| ---       | PAVEMENT                            |
| ○         | UTILITY POLE                        |
| ○         | GUY POLE                            |
| △         | WETLAND FLAG                        |
| PROPOSED: |                                     |
| ---       | CONTOUR                             |
| 844.5 x   | SPOT ELEVATION                      |
| SB        | SEDIMENT BARRIER (3 C-501)          |
| ---       | 7' HIGH CHAIN LINK FENCE (10 C-501) |
| ---       | TREE LINE                           |
| E E       | UNDERGROUND ELECTRIC (15 C-502)     |
| OHW       | OVERHEAD ELECTRIC                   |
| ---       | CRUSHED STONE ACCESS WAY (2 C-501)  |
| □         | SOLAR PV PANEL (1 C-501)            |

MATCH LINE DRAWING C-102  
MATCH LINE DRAWING C-103



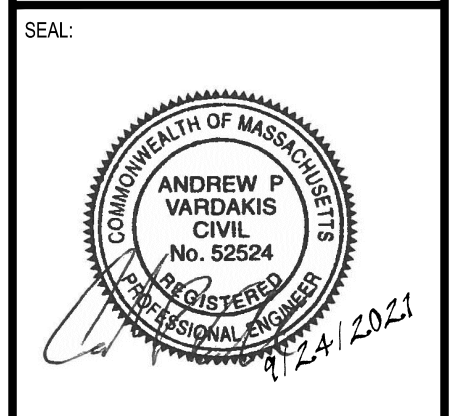
| REVISION | DATE       | ISSUE / REVISION DESCRIPTION               | APPROVED |
|----------|------------|--|----------|
| 5        | 09/24/2021 | CC PEER REVIEW                             |          |
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**PROJECT:** 4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT  
40 SIZER DRIVE  
WALES, MASSACHUSETTS

**TITLE:** PROPOSED SITE PLAN (SHEET 1 OF 2)

**CLIENT:** SUNPIN ENERGY SERVICES, LLC

**SUNPIN**  
Securing a brighter future through solar



**DESIGNED BY:** MJW  
**DRAWN BY:** DED

**CHECKED BY:** APV  
**SCALE:** AS SHOWN

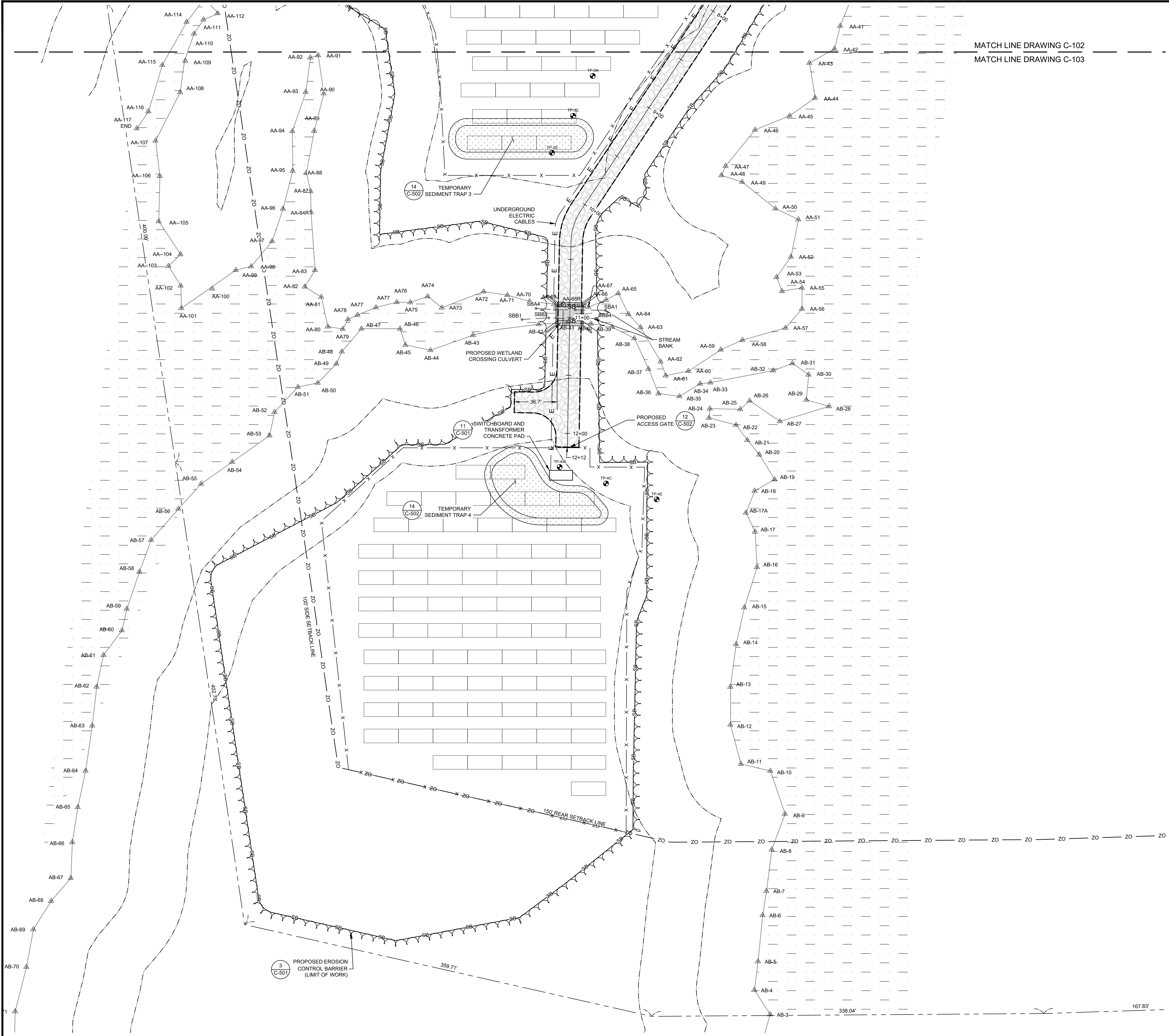
**PROJECT NUMBER:** 3652200259

**DRAWING NUMBER:** C-102

**SHEET NUMBER:** 4 OF 11



MATCH LINE DRAWING C-102  
MATCH LINE DRAWING C-103



**LEGEND:**

**EXISTING:**

- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- APPROXIMATE RIGHT-OF-WAY
- MAJOR CONTOUR
- MINOR CONTOUR
- OVERHEAD ELECTRIC LINE
- WETLAND LINE
- 50' WETLAND BUFFER
- 100' WETLAND BUFFER
- PROPERTY LINE SETBACK
- ZO
- AZO
- WETLAND AREA
- PAVEMENT
- UTILITY POLE
- GUY POLE
- WETLAND FLAG

**PROPOSED:**

- CONTOUR
- SPOT ELEVATION
- SEDIMENT BARRIER
- 7' HIGH CHAIN LINK FENCE
- TREE LINE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- CRUSHED STONE ACCESS WAY
- SOLAR PV PANEL

- NOTES:**
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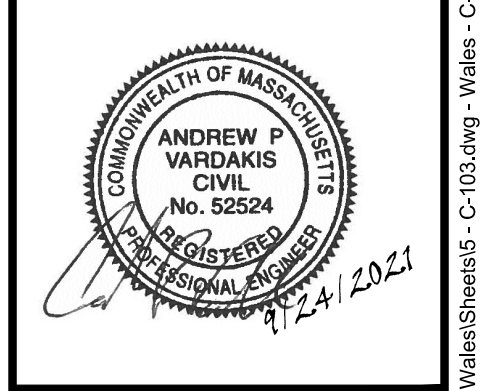
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**PROJECT:** 4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT  
40 SIZER DRIVE  
WALLES, MASSACHUSETTS

**TITLE:** PROPOSED SITE PLAN  
(SHEET 2 OF 2)

**CLIENT:** SUNPIN ENERGY SERVICES, LLC

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**DESIGNED BY:** MJW  
**CHECKED BY:** APV  
**PROJECT NUMBER:** 3652200259  
**DRAWING NUMBER:** C-103  
**SHEET NUMBER:** 5 OF 11

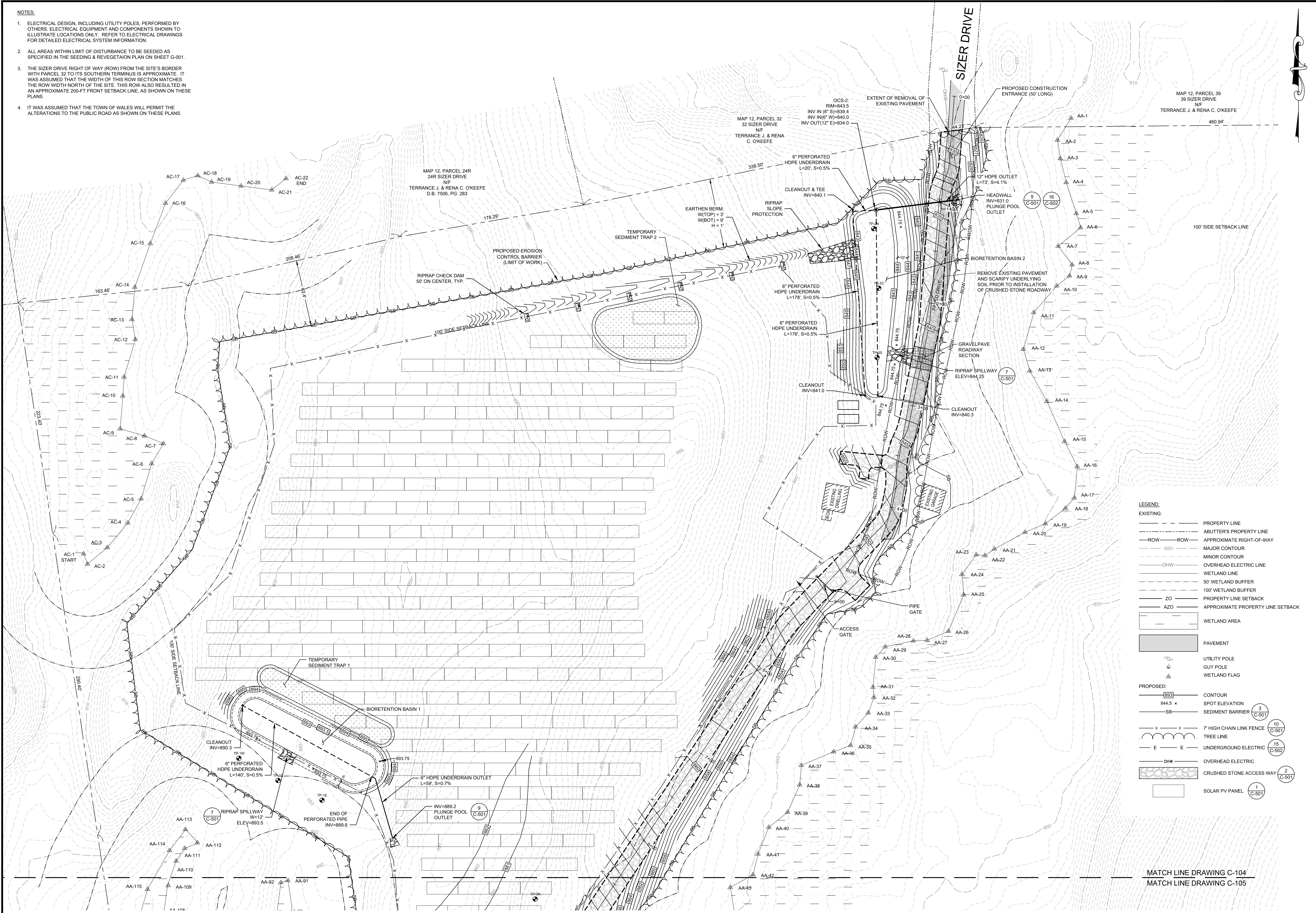
**DRAWN BY:** DED  
**SCALE:** AS SHOWN

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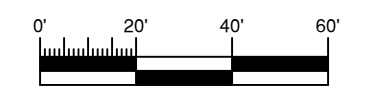
**EXISTING:**

- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- APPROXIMATE RIGHT-OF-WAY
- MAJOR CONTOUR
- MINOR CONTOUR
- OVERHEAD ELECTRIC LINE
- WETLAND LINE
- 50' WETLAND BUFFER
- 100' WETLAND BUFFER
- PROPERTY LINE SETBACK
- APPROXIMATE PROPERTY LINE SETBACK
- WETLAND AREA
- PAVEMENT
- UTILITY POLE
- GUY POLE
- WETLAND FLAG

**PROPOSED:**

- CONTOUR
- SPOT ELEVATION
- SEDIMENT BARRIER
- 7' HIGH CHAIN LINK FENCE
- TREE LINE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- CRUSHED STONE ACCESS WAY
- SOLAR PV PANEL

MATCH LINE DRAWING C-104  
MATCH LINE DRAWING C-105



**wood.**  
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MASSACHUSETTS 01864  
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WEB: WWW.WOODPLC.COM

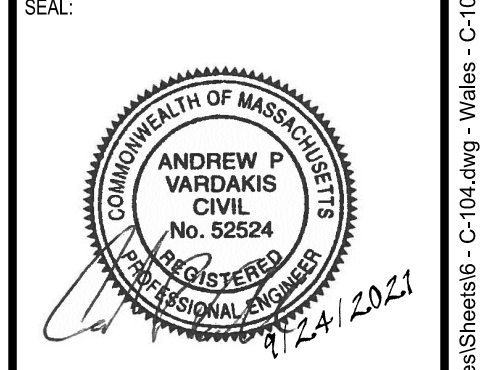
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PROJECT: **4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT**  
**40 SIZER DRIVE**  
**WALES, MASSACHUSETTS**

TITLE: **PROPOSED GRADING AND DRAINAGE PLAN**  
**(SHEET 1 OF 2)**

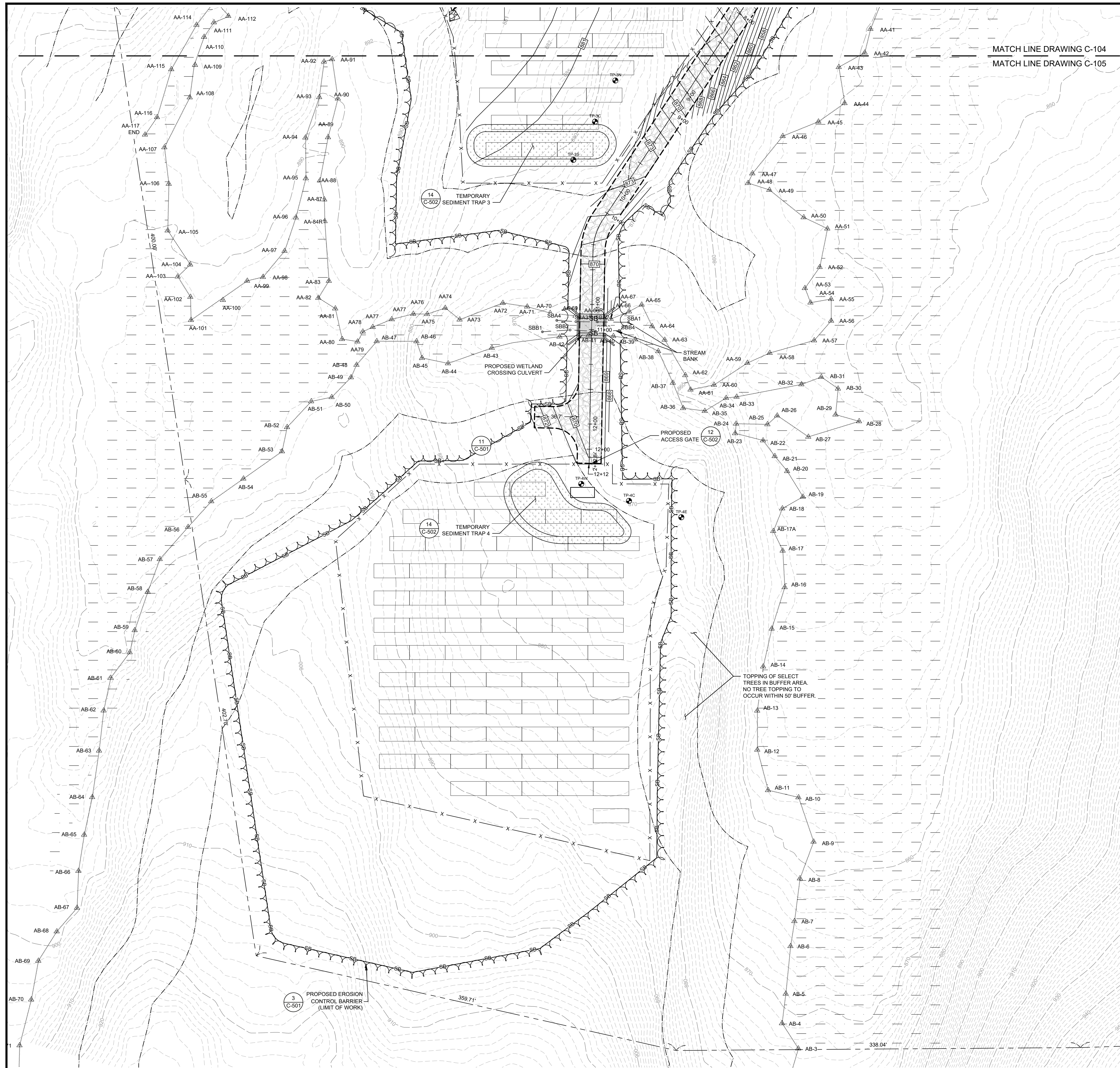
CLIENT: **SUNPIN ENERGY SERVICES, LLC**

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DESIGNED BY: MJW  
DRAWN BY: DED  
CHECKED BY: APV  
SCALE: AS SHOWN  
PROJECT NUMBER: 3652200259  
DRAWING NUMBER: **C-104**  
SHEET NUMBER: **6 OF 11**





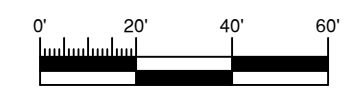
MATCH LINE DRAWING C-104  
MATCH LINE DRAWING C-105

**LEGEND:**

|                  |  |    |                                   |
|------------------|--|----|-----------------------------------|
| <b>EXISTING:</b> |  | —  | PROPERTY LINE                     |
| - - - - -        |  | —  | ABUTTER'S PROPERTY LINE           |
| —ROW—ROW—        |  | —  | APPROXIMATE RIGHT-OF-WAY          |
| - - - - -        |  | —  | MAJOR CONTOUR                     |
| - - - - -        |  | —  | MINOR CONTOUR                     |
| —OHW—OHW—        |  | —  | OVERHEAD ELECTRIC LINE            |
| - - - - -        |  | —  | WETLAND LINE                      |
| - - - - -        |  | —  | 50' WETLAND BUFFER                |
| - - - - -        |  | —  | 100' WETLAND BUFFER               |
| —ZO—ZO—          |  | —  | PROPERTY LINE SETBACK             |
| - - - - -        |  | —  | APPROXIMATE PROPERTY LINE SETBACK |
| [Pattern]        |  | —  | WETLAND AREA                      |
| [Pattern]        |  | —  | PAVEMENT                          |
| [Symbol]         |  | —  | UTILITY POLE                      |
| [Symbol]         |  | —  | GUY POLE                          |
| [Symbol]         |  | —  | WETLAND FLAG                      |
| <b>PROPOSED:</b> |  | —  | CONTOUR                           |
| 844.5 x          |  | —  | SPOT ELEVATION                    |
| —SB—             |  | 3  | SEDIMENT BARRIER (C-501)          |
| x x x            |  | 10 | 7' HIGH CHAIN LINK FENCE (C-501)  |
| —E—E—            |  | 15 | TREE LINE (C-502)                 |
| —OHW—            |  | 2  | UNDERGROUND ELECTRIC (C-502)      |
| [Pattern]        |  | 2  | CRUSHED STONE ACCESS WAY (C-501)  |
| [Symbol]         |  | 1  | SOLAR PV PANEL (C-501)            |

**NOTES:**

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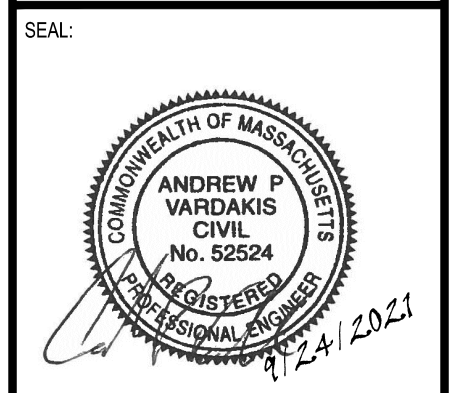
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| 3        | 05/20/2021 | ISSUED TO CONSERVATION COMMISSION          | MJW      |
| 2        | 04/29/2021 | CONSERVATION COMMISSION COMMENTS           | MJW      |
| 1        | 03/15/2021 | CONSERVATION COMMISSION COMMENTS           | MJW      |
| 0        | 01/21/2021 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION | APV      |

**PROJECT:** 4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT  
40 SIZER DRIVE  
WALLES, MASSACHUSETTS

**TITLE:** PROPOSED GRADING AND DRAINAGE PLAN (SHEET 2 OF 2)

**CLIENT:** SUNPIN ENERGY SERVICES, LLC

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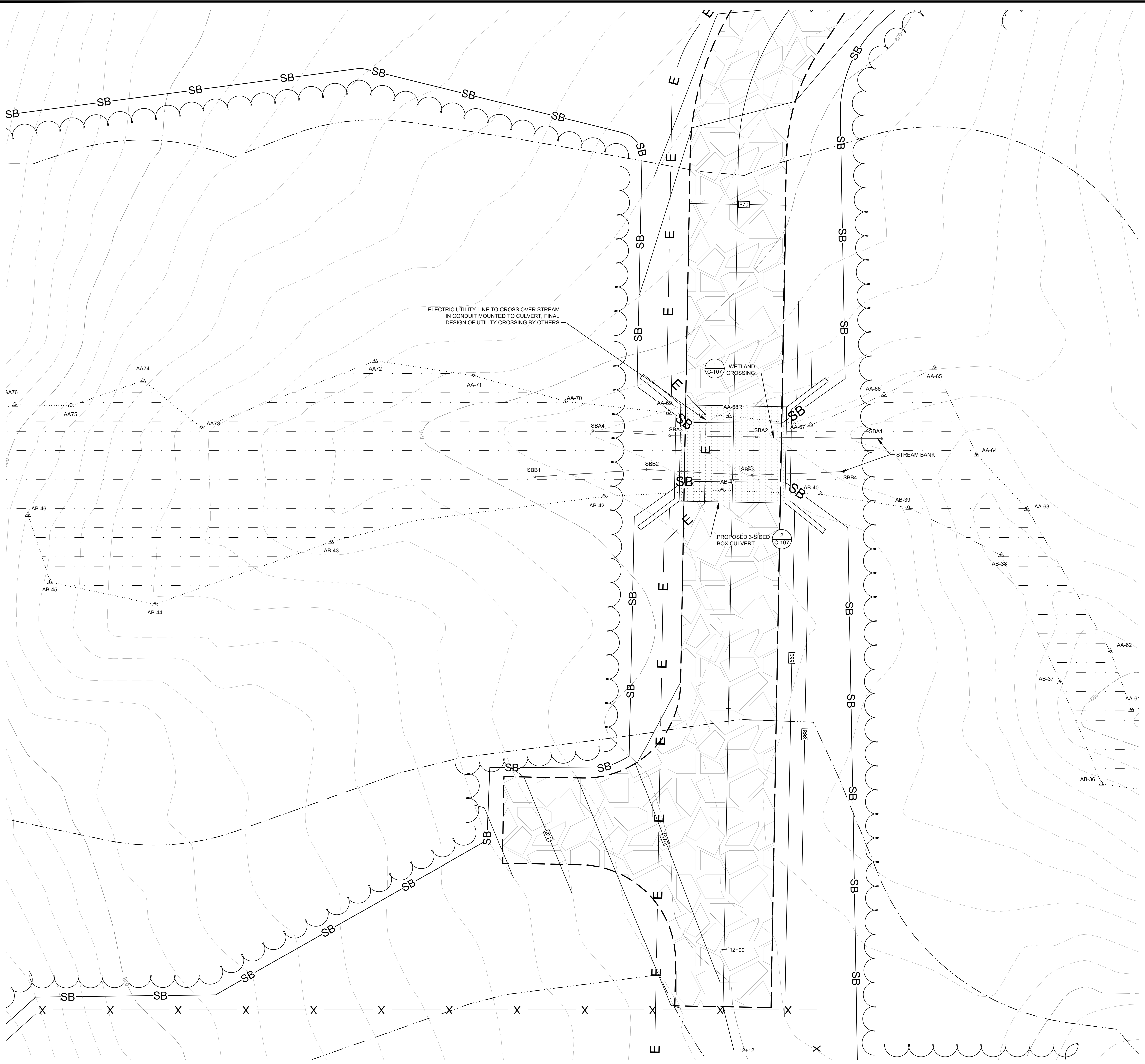


**DESIGNED BY:** MJW  
**CHECKED BY:** APV  
**PROJECT NUMBER:** 3652200259  
**DRAWING NUMBER:** C-105  
**SHEET NUMBER:** 7 OF 11

**DRAWN BY:** DED  
**SCALE:** AS SHOWN

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**





**LEGEND:**

**EXISTING:**

- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- APPROXIMATE RIGHT-OF-WAY
- MAJOR CONTOUR
- MINOR CONTOUR
- OVERHEAD ELECTRIC LINE
- WETLAND LINE
- 50' WETLAND BUFFER
- 100' WETLAND BUFFER
- PROPERTY LINE SETBACK
- APPROXIMATE PROPERTY LINE SETBACK
- WETLAND AREA

**PROPOSED:**

- CONTOUR
- SPOT ELEVATION
- SEDIMENT BARRIER
- 7' HIGH CHAIN LINK FENCE
- TREE LINE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- CRUSHED STONE ACCESS WAY
- SOLAR PV PANEL

**SYMBOLS:**

- UTILITY POLE
- GUY POLE
- WETLAND FLAG



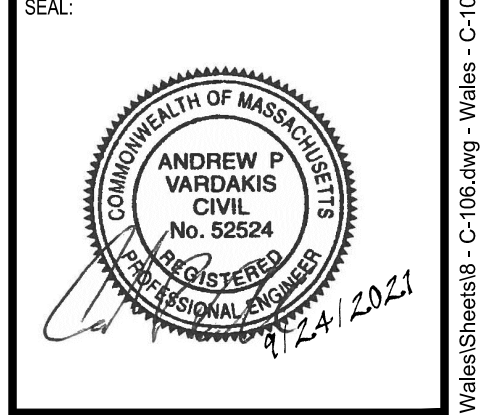
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**PROJECT:** 4.493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT  
40 SIZER DRIVE  
WALLES, MASSACHUSETTS

**TITLE:** STREAM/WETLAND CROSSING AREA

**SUNPIN ENERGY SERVICES, LLC**

**SUNPIN**  
Securing a brighter future through solar



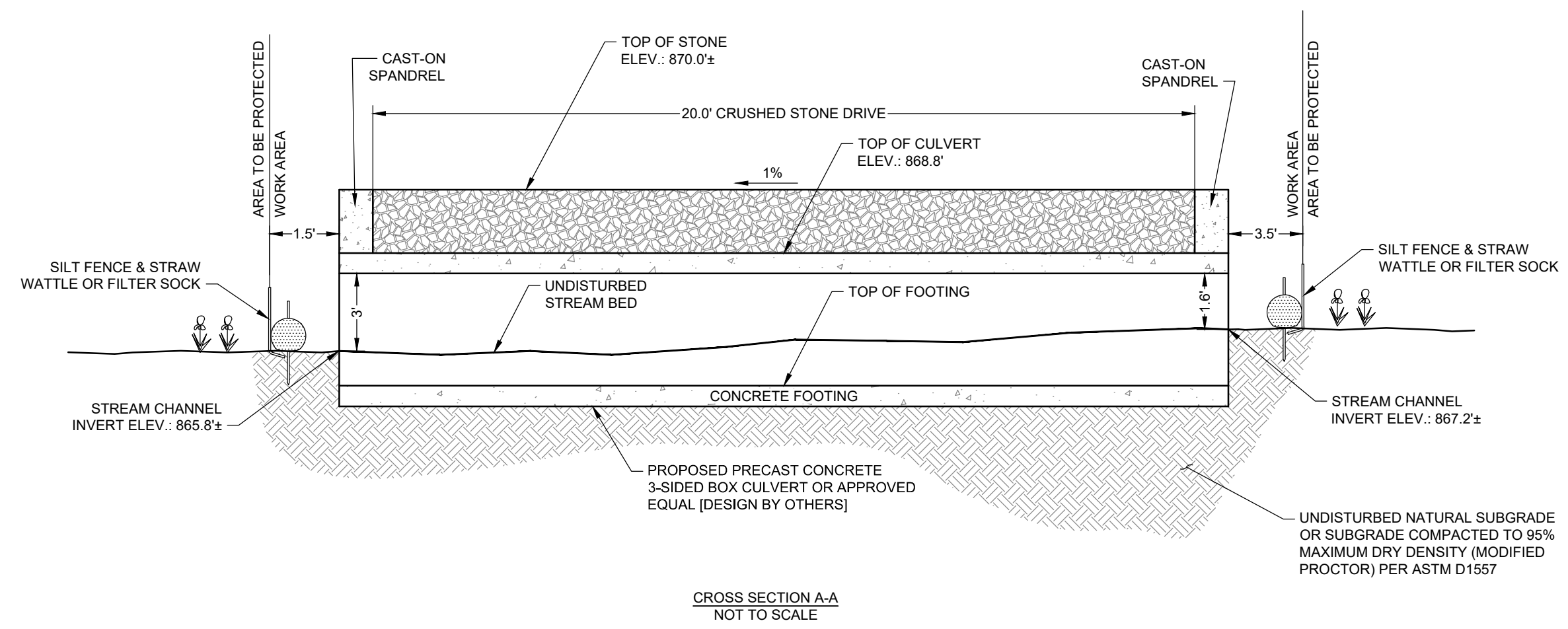
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| DESIGNED BY:<br>M JW            | DRAWN BY:<br>DED                |
| CHECKED BY:<br>APV              | SCALE:<br>AS SHOWN              |
| PROJECT NUMBER:<br>3652200259   | DRAWING NUMBER:<br><b>C-106</b> |
| SHEET NUMBER:<br><b>8 OF 11</b> |                                 |

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**



TABLE 1. STREAM CROSSING STANDARDS

| PERFORMANCE STANDARD:   | STANDARDS MET AT STREAM CROSSING:   |
|---|---|
| <p>1. TYPE OF CROSSING</p> <ul style="list-style-type: none"> <li>GENERAL: SPANS (BRIDGES, 3-SIDED BOX CULVERTS, OPEN BOTTOM CULVERTS OR ARCHES) ARE STRONGLY PREFERRED.</li> <li>OPTIMUM: USE A BRIDGE.</li> </ul>   | <p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED.</p>  |
| <p>2. EMBEDMENT</p> <ul style="list-style-type: none"> <li>ALL CULVERTS SHOULD BE EMBEDDED (SUNK INTO STREAM) A MINIMUM OF 2 FEET, AND ROUND PIPE CULVERTS AT LEAST 25%.</li> <li>IF PIPE CULVERT CANNOT BE EMBEDDED THIS DEEP, THEN THEY SHOULD NOT BE USED.</li> <li>WHEN EMBEDMENT MATERIAL INCLUDED ELEMENTS &gt; 15 INCHES IN DIAMETER, EMBEDMENT DEPTHS SHOULD BE AT LEAST TWICE THE D84 (PARTICLE WIDTH LARGER THAN 84% OF PARTICLES) OF THE EMBEDMENT MATERIAL.</li> </ul>  | <p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED. THERE IS NO EMBEDDING THAT WILL BE INCORPORATED INTO THIS STREAM CROSSING.</p>   |
| <p>3. CROSSING SPAN</p> <ul style="list-style-type: none"> <li>GENERAL: SPANS CHANNEL WIDTH (A MINIMUM OF 1.2 TIMES THE BANKFULL WIDTH OF THE STREAM).</li> <li>OPTIMUM: SPANS THE STREAMBED AND BANKS (AT LEAST 1.2 TIMES BANKFULL WIDTH) WITH SUFFICIENT HEADROOM TO PROVIDE DRY PASSAGE FOR WILDLIFE.</li> </ul>   | <p>THE EXISTING BANKFULL WIDTH OF THE STREAM IS APPROXIMATELY 8 FEET. THE PROPOSED SPAN OF THE 3-SIDED BOX CULVERT IS 18 FEET WHICH IS 2.25 TIMES THE WIDTH OF THE EXISTING BANKFULL STREAM.</p>  |
| <p>4. OPENNESS</p> <ul style="list-style-type: none"> <li>GENERAL: OPENNESS RATIO (CROSS SECTIONAL AREA/CROSSING LENGTH) OF AT LEAST 0.82 FEET (0.25 METERS). THE CROSSING SHOULD BE WIDE AND HIGH RELATIVE TO ITS LENGTH.</li> <li>OPTIMUM: OPENNESS RATIO OF AT LEAST 1.64 FEET (0.5 METERS) AND MINIMUM HEIGHT OF 6 FEET. IF CONDITION SIGNIFICANTLY REDUCE WILDLIFE PASSAGE NEAR A CROSSING (E.G. STEEP EMBANKMENTS, HIGH TRAFFIC VOLUMES, AND PHYSICAL BARRIERS), MAINTAIN A MINIMUM HEIGHT OF 8 FEET (2.4 METERS) AND OPENNESS RATIO OF 2.46 FEET (0.75 METERS).</li> </ul> | <p><u>X-SEC CULVERT AREA PRE-EMBED - EMBEDDED AREA</u><br/>CULVERT LENGTH</p> <p><math>\frac{72 \text{ S.F.} - 43 \text{ S.F.}}{22 \text{ FEET}} = 1.32</math> (UPSTREAM END)</p> <p><math>\frac{72 \text{ S.F.} - 18 \text{ S.F.}}{22 \text{ FEET}} = 2.45</math> FEET (DOWNSTREAM END)</p> <p>THE PROPOSED 3-SIDED BOX CULVERT MEETS THE GENERAL STREAM CROSSING STANDARDS.</p> |
| <p>5. CROSSING SPAN</p> <ul style="list-style-type: none"> <li>NATURAL BOTTOM SUBSTRATE SHOULD BE USED WITHIN THE CROSSING AND IT SHOULD MATCH THE UPSTREAM AND DOWNSTREAM SUBSTRATES. THE SUBSTRATE AND DESIGN SHOULD RESIST DISPLACEMENT DURING FLOWS AND MAINTAIN APPROPRIATE BOTTOM DURING NORMAL FLOWS.</li> </ul>   | <p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING STREAM HAS BEEN PROPOSED. THERE IS NO EMBEDDING THAT WILL BE INCORPORATED INTO THIS STREAM CROSSING AND THE NATURAL STREAM BED WILL BE UTILIZED. EROSION CONTROL WILL BE PLACED ON BOTH SIDES OF THE NATURAL CHANNEL FLOWS.</p>  |
| <p>6. WATER DEPTH AND VELOCITY</p> <ul style="list-style-type: none"> <li>WATER DEPTHS AND VELOCITIES ARE COMPARABLE TO THOSE FOUND IN THE NATURAL CHANNEL AT A VARIETY OF FLOWS.</li> </ul>  | <p>A 3-SIDED BOX CULVERT THAT SPANS THE EXISTING INTERMITTENT STREAM HAS BEEN PROPOSED AND THE NATURAL GRADES WILL BE UTILIZED. HOLDING CURRENT ELEVATIONS, DEPTHS AND VELOCITIES WHEN WATER IS PRESENT IS COMPARABLE.</p>  |

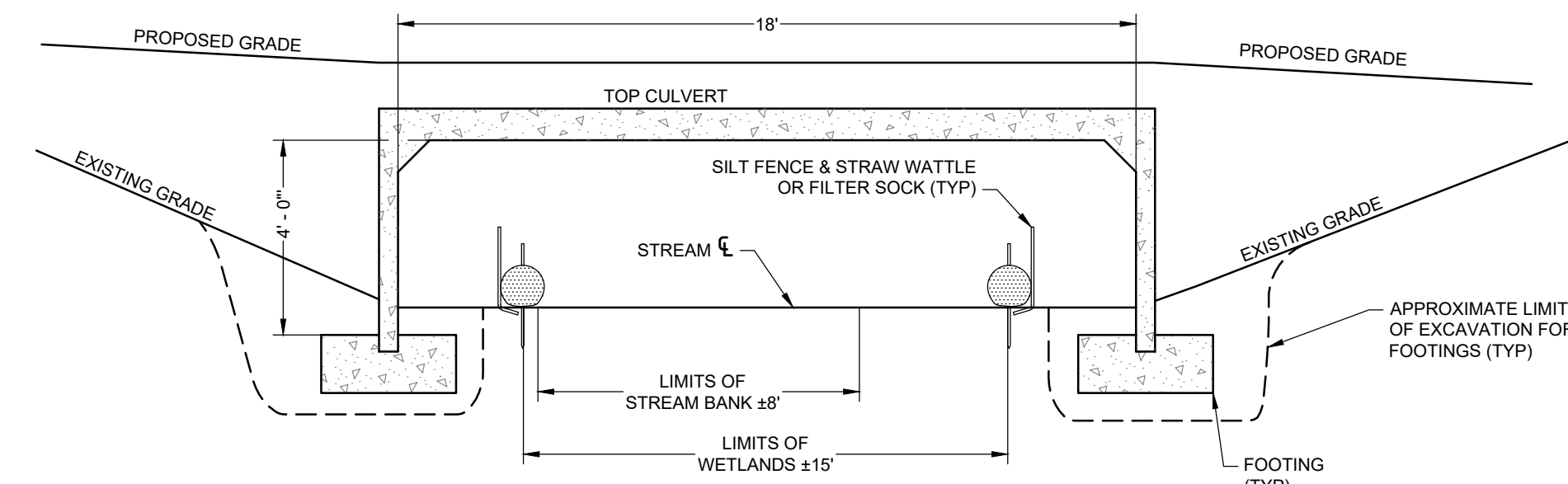


WETLAND CROSSING  
NOT TO SCALE

1

NOTES:

- CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
- DESIGN PER ASTM C1504 SPECIFICATION FOR 3-SIDED CULVERT.
- ALL REINFORCEMENT PER ASTM A-615-75.
- DESIGN AASHTO H-20 LOADING.
- TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
- STRUCTURAL DESIGN TO BE PERFORMED BY OTHERS. CROSS-SECTIONAL GEOMETRY OF CULVERT TO BE MAINTAINED AS SHOWN ON THESE PLANS.



PRECAST CONCRETE 3-SIDED BOX CULVERT  
NOT TO SCALE

2

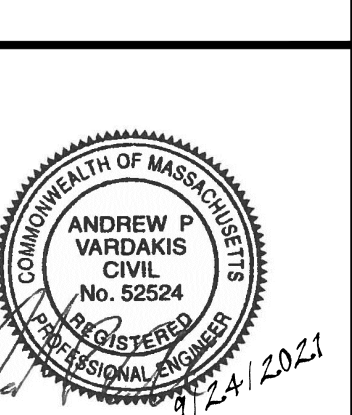


WOOD MASSACHUSETTS, INC.  
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PROJECT:  
4,493 MW DC GROUND-MOUNT SOLAR PV  
DEVELOPMENT  
40 SIZER DRIVE  
WALLES, MASSACHUSETTS

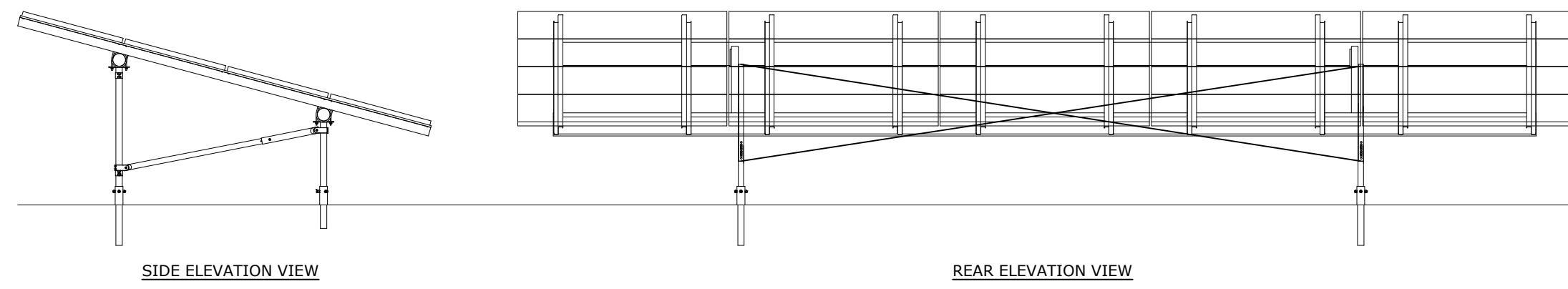
TITLE:  
STREAM/WETLAND CROSSING  
NOTES AND DETAILS



|                               |                          |
|-------------------------------|--------------------------|
| DESIGNED BY:<br>MJW           | DRAWN BY:<br>DED         |
| CHECKED BY:<br>APV            | SCALE:<br>AS SHOWN       |
| PROJECT NUMBER:<br>3652200259 | DRAWING NUMBER:<br>C-107 |
| SHEET NUMBER:<br>9 OF 11      |                          |

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION





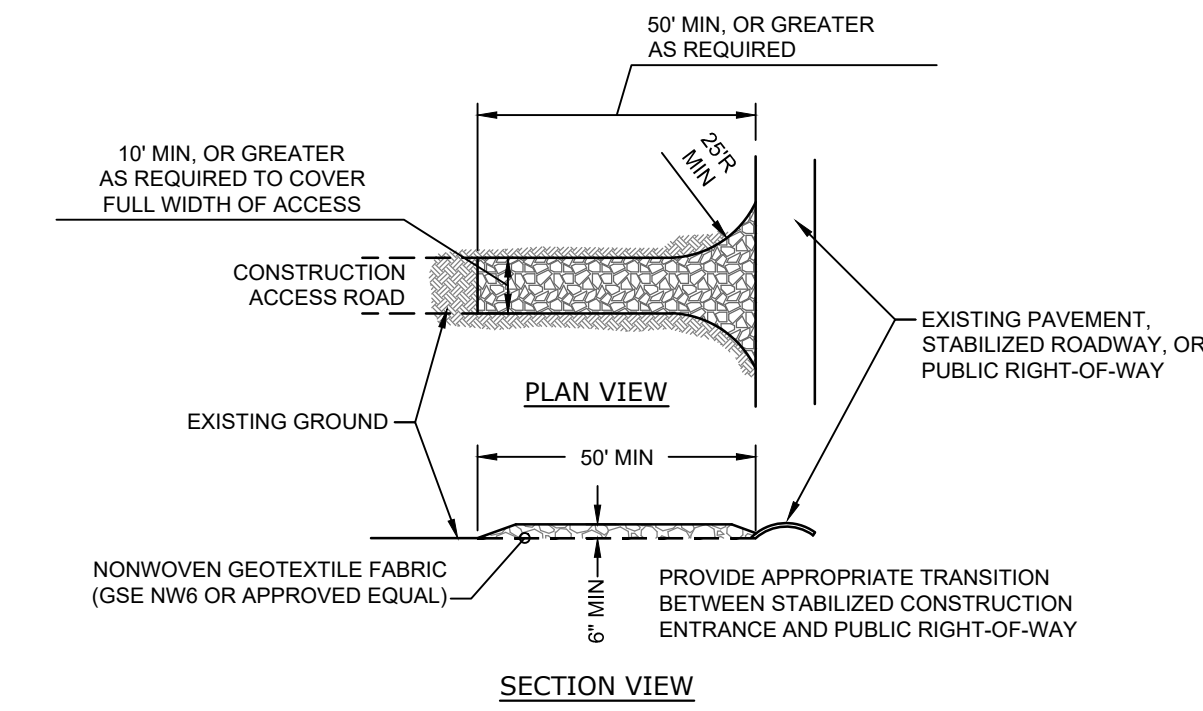
**SOLAR PV ARRAY**

NOT TO SCALE

**NOTE:**

- DESIGN FOR FOUNDATIONS, RACKING, AND MODULES BY OTHERS. DETAILS SHOWN FOR ILLUSTRATION PURPOSES ONLY.

1



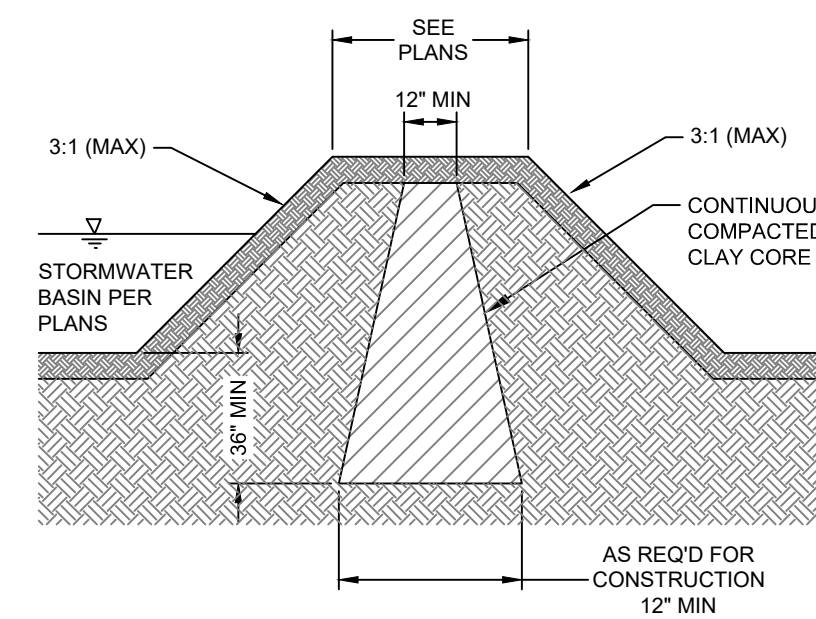
**NOTES:**

- STONE TO BE 1"-3" STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FT.
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TEN (10) FT. MIN, BUT NOT LESS THAN THE FULL TRAVELED WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- FILTER CLOTH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS OR BENEATH THE ENTRANCE.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

**STABILIZED CONSTRUCTION ENTRANCE**

NOT TO SCALE

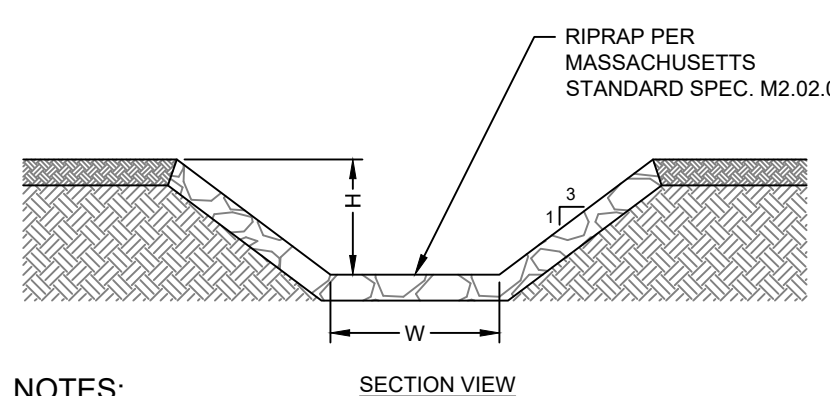
4



**STORMWATER BASIN BERM**

NOT TO SCALE

6



**NOTES:**

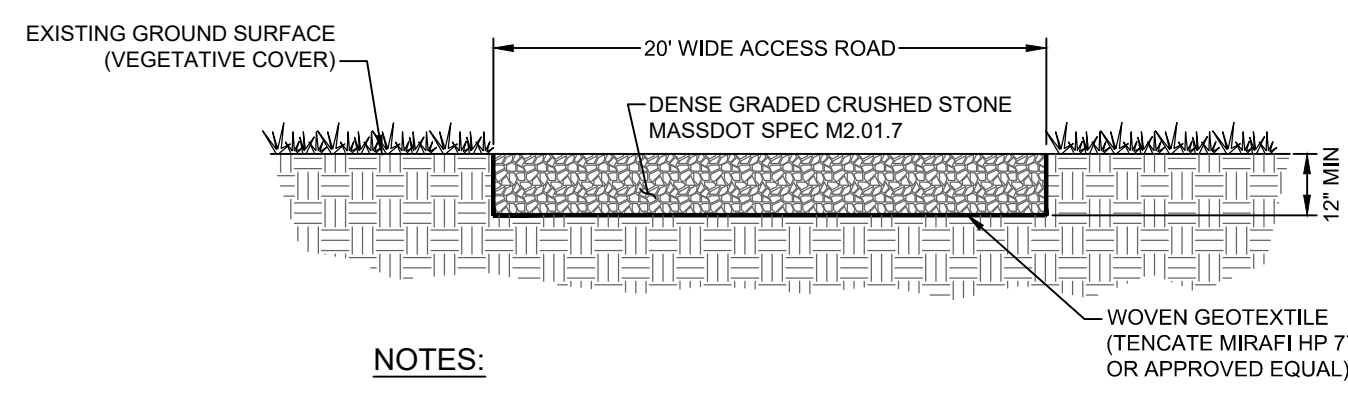
- RIPRAP TO BE INSTALLED WITHIN THE FULL WIDTH OF THE SPILLWAY AND THE FULL LENGTH OF THE BASIN BERM - FROM THE BASIN BOTTOM TO WHERE MATCHING EXISTING GRADE.
- SEE DETENTION BASIN DETAIL FOR ELEVATIONS.

**RIP RAP OVERFLOW SPILLWAY**

NOT TO SCALE

7

| WEIR DIMENSIONS (FT) |       |      |
|----------------------|-------|------|
| BMP ID               | W     | H    |
| BIORETENTION BASIN 1 | 12.00 | 0.25 |
| BIORETENTION BASIN 2 | 10.00 | 0.50 |



**NOTES:**

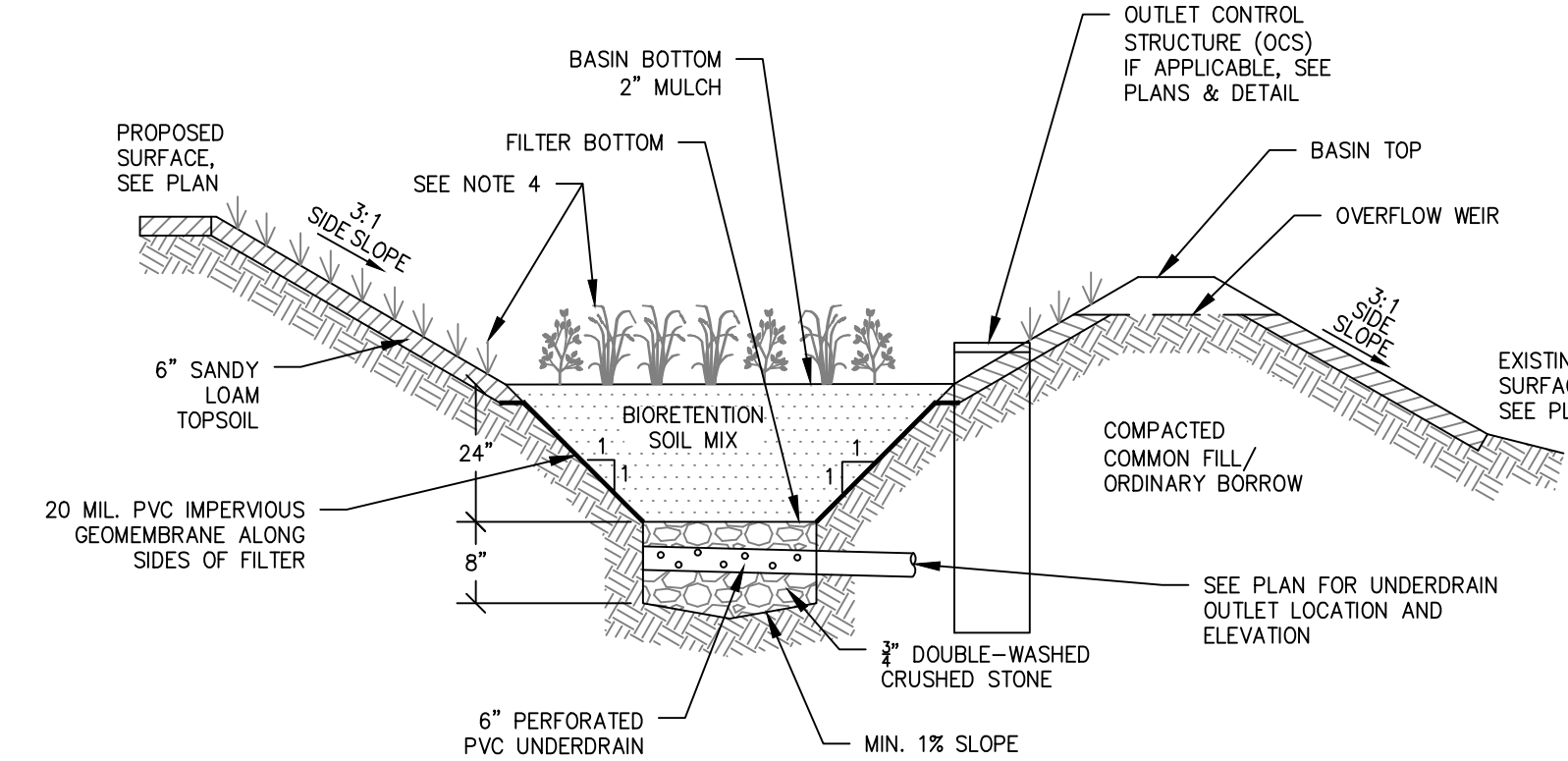
- ACCESS ROAD TO BE CONSTRUCTED OF A MINIMUM 6" OF DENSE GRADED CRUSHED STONE.
- WOVEN GEOTEXTILE TO BE PLACED BETWEEN THE GROUND SURFACE AND THE CRUSHED STONE.
- CRUSHED STONE SHALL BE COMPACTED TO A FIRM AND NON-YIELDING CONDITION.
- EXISTING PAVEMENT SHALL BE REMOVED AND UNDERLYING SOILS SHALL BE SCARIFIED PRIOR TO INSTALLATION OF FABRIC AND CRUSHED STONE.

**CRUSHED STONE ACCESS ROAD**

NOT TO SCALE

2

| BASIN ELEVATIONS (FT) |           |              |               |               |               |                      |
|-----------------------|-----------|--------------|---------------|---------------|---------------|----------------------|
| BMP ID                | BASIN TOP | BASIN BOTTOM | FILTER BOTTOM | OVERFLOW WEIR | OCS GRATE RIM | APPROX. GW ELEVATION |
| BIORETENTION BASIN 1  | 893.75    | 893.00       | 891.00        | 893.50        | N/A           | 891.50               |
| BIORETENTION BASIN 2  | 844.75    | 843.00       | 841.00        | 844.25        | 843.50        | < 840.50             |



**BIORETENTION BASIN**

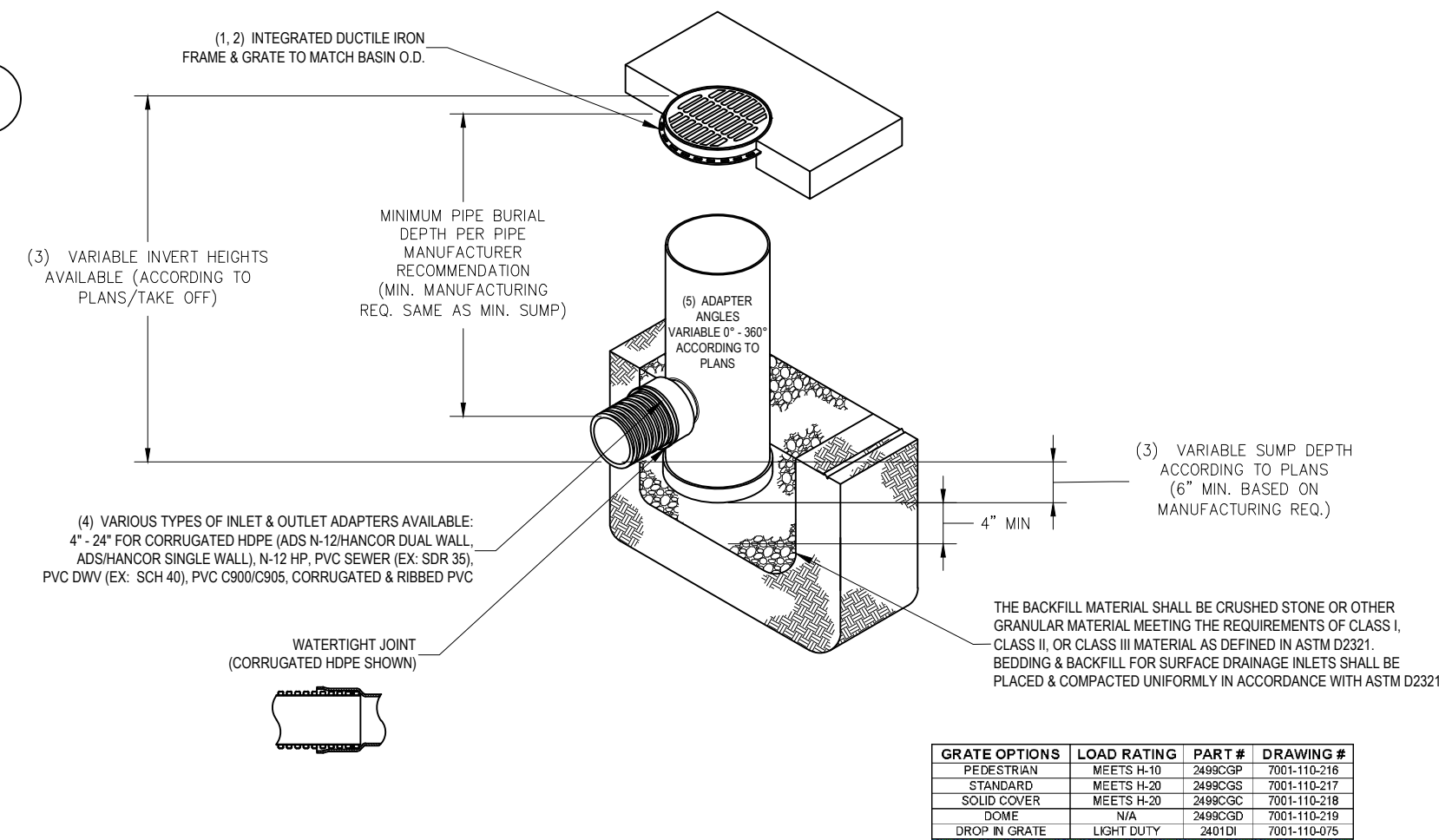
NOT TO SCALE

5

**NOTES:**

- BIORETENTION SOIL MIX SHALL BE: 40% SAND, 20-30% TOPSOIL, 30-40% COMPOST.
- SIDE SLOPES SHALL BE 3:1 MAX.
- CONTRACTOR SHALL SUBMIT A SIEVE ANALYSIS OF BIORETENTION SOIL MIX TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
- PLANTING PLAN SHALL INCLUDE A MIX OF HERBACEOUS PERENNIALS, SHRUBS, AND UNDERSTORY TREES (IF CONDITIONS PERMIT) THAT CAN TOLERATE INTERMITTENT PONDING AND EXTENDED DRY PERIODS. INCLUDE ONE TREE OR SHRUB PER 50 SQ.FT. OF BIORETENTION AREA, AND AT LEAST 3 SPECIES OF HERBACEOUS PERENNIALS AND SHRUBS. UTILIZE THE LIST OF SUITABLE PLANTS FOUND IN VOLUME 2 CHAPTER 2 OF THE MASSACHUSETTS STORMWATER HANDBOOK.

**NYLOPLAST 24" DRAIN BASIN: 2824AG \_ \_X**

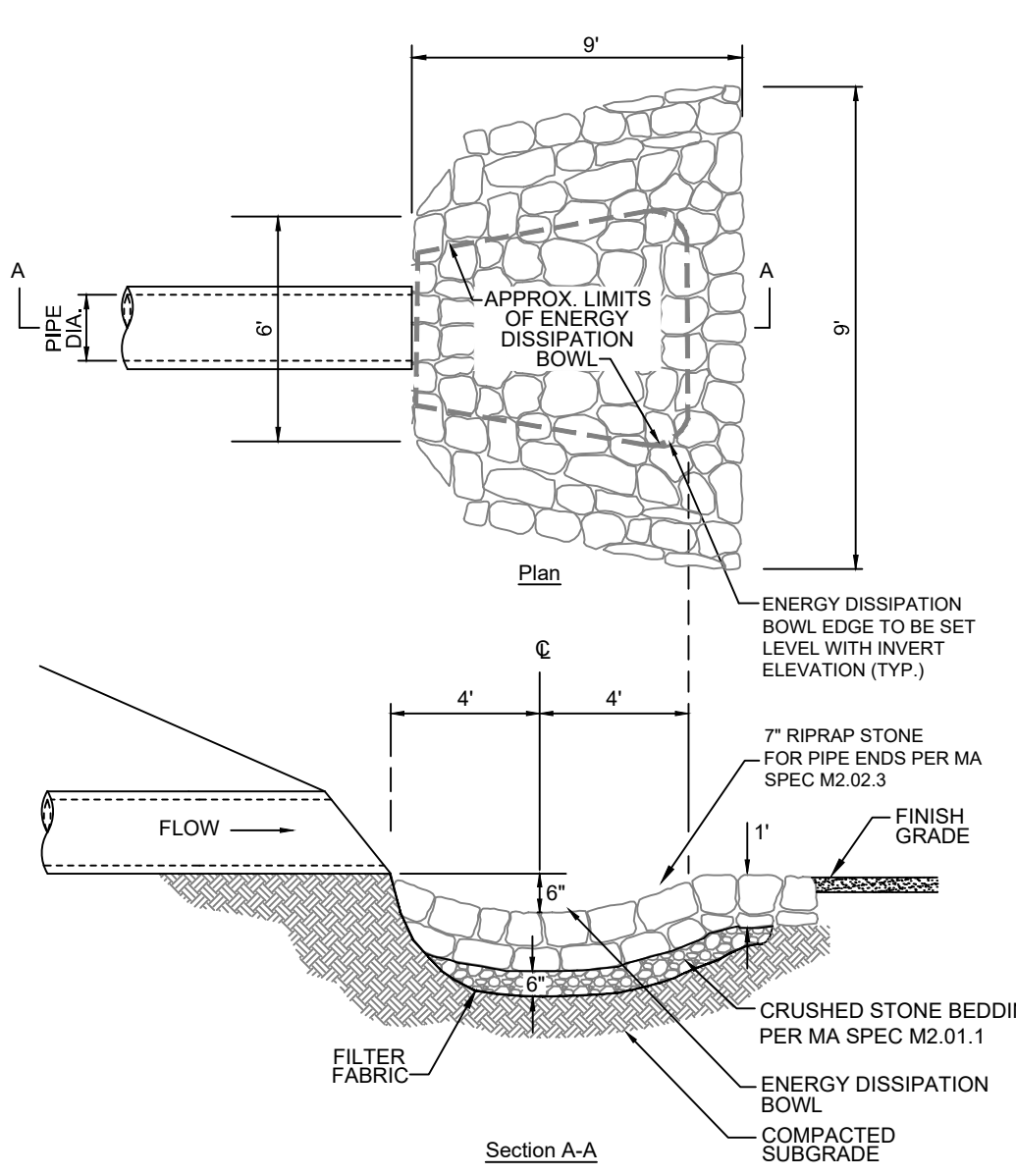


| GRATE OPTIONS | LOAD RATING | PART #  | DRAWING #   |
|---------------|-------------|---------|-------------|
| PERFORATION   | MEETS I-30  | 388000P | 700-110-010 |
| STANDARD      | MEETS I-30  | 388000S | 700-110-017 |
| SOLE COVER    | MEETS I-30  | 388000C | 700-110-018 |
| GRATE         | N/A         | 388000G | 700-110-019 |
| DROP IN GRATE | LIGHT DUTY  | 388000D | 700-110-020 |

**OUTLET CONTROL STRUCTURE (OCS)**

NOT TO SCALE

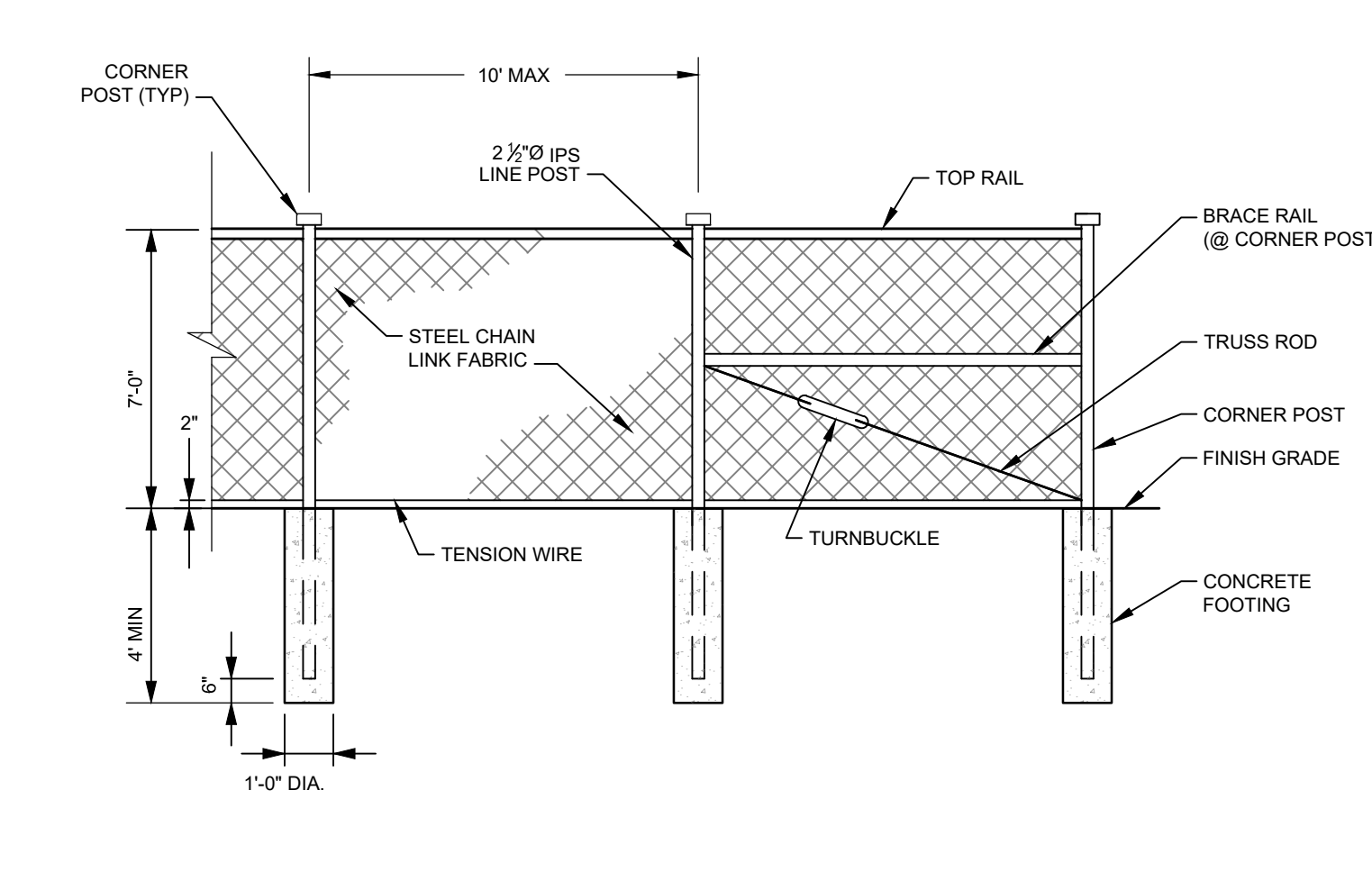
8



**PLUNGE POOL**

NOT TO SCALE

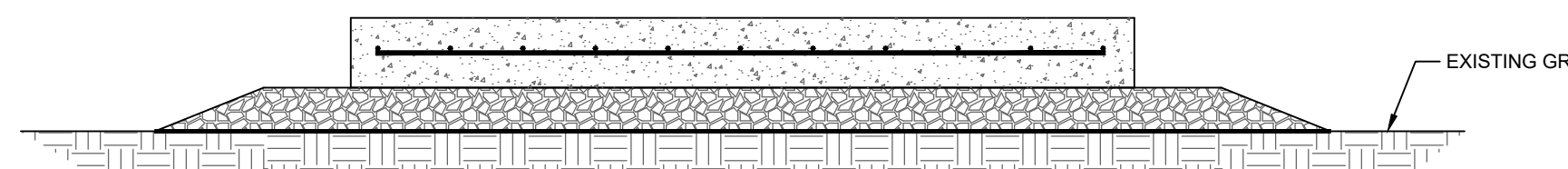
9



**CHAIN LINK FENCE**

NOT TO SCALE

10



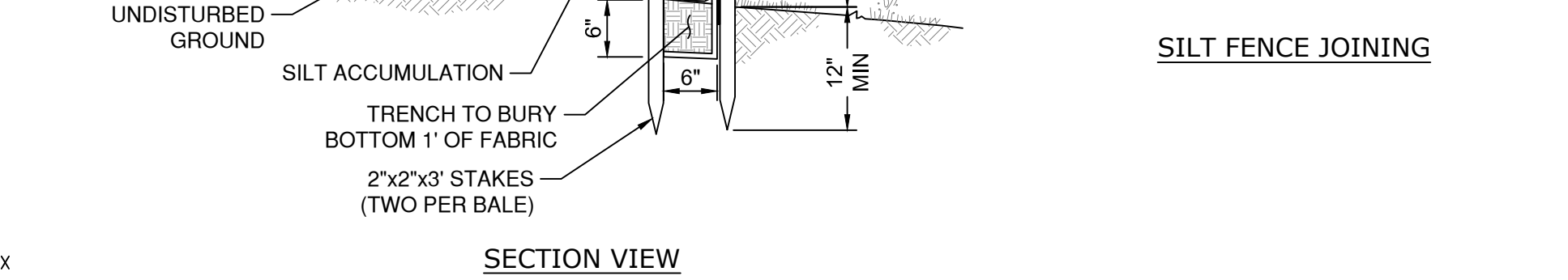
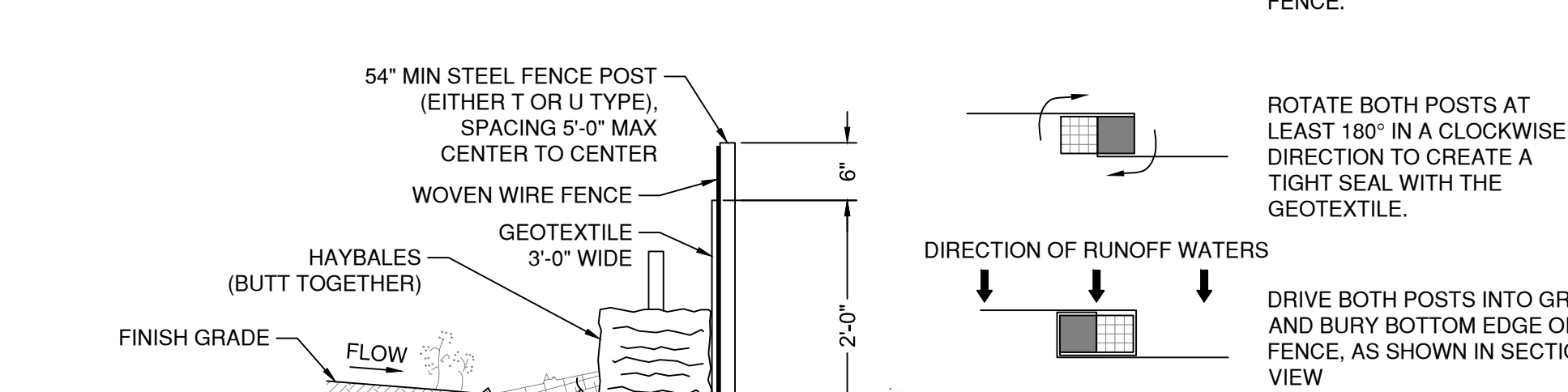
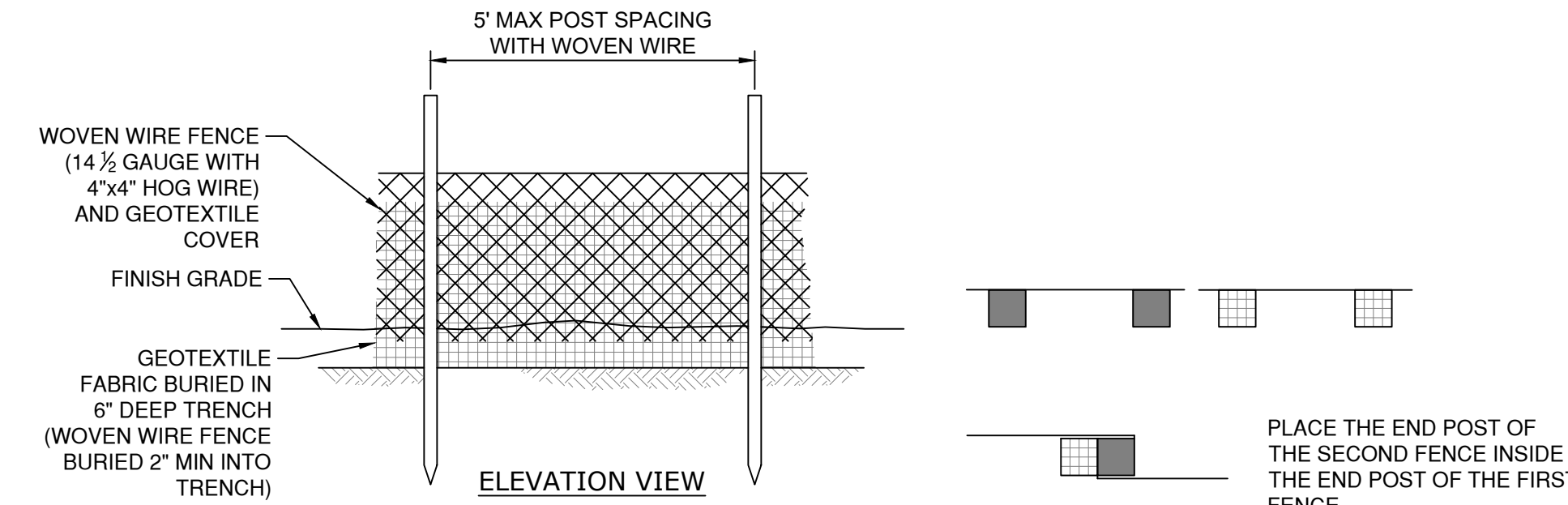
**NOTE:**

- CONCRETE PAD SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. DESIGN TO BE FINALIZED AT LATER DATE.

**TYPICAL CONCRETE EQUIPMENT PAD SECTION**

NOT TO SCALE

11



**NOTES:**

- GEOTEXTILE TO BE FASTENED SECURELY TO FENCE POST BY USE OF WIRE TIES.
- GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- BURY BOTTOM 1'-0" OF GEOTEXTILE IN TRENCH (6" DEEP x 6" WIDE) REPLACE SOIL AND TAMP IN PLACE.
- ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE SHALL BE SECURELY FASTENED TOGETHER AS SHOWN. FASTENERS SHALL BE PROVIDED AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
- MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN. COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- ALL SILT FENCE SHALL INCLUDE WOVEN WIRE FENCE SUPPORT UNLESS INDICATED OTHERWISE.

**SEDIMENT BARRIER - DOUBLE STAKED HAY BALE WITH HOG WIRE BACKED SILT FENCE**

NOT TO SCALE

3

WOOD MASSACHUSETTS, INC.  
271 MILL ROAD CHELMSFORD  
MASSACHUSETTS 01864  
TELEPHONE: (978) 692-9090  
FAX: (978) 692-6633  
WEB: WWW.WOODPLC.COM

| REVISION | DATE       | ISSUE / REVISION DESCRIPTION               |
|----------|------------|--|
| 5        | 09/24/2021 | CC PEER REVIEW                             |
| 4        | 06/29/2021 | REVISED PER CONSERVATION COMMISSIONS       |
| 3        | 05/20/2021 | ISSUED TO CONSERVATION COMMISSION          |
| 2        | 04/29/2021 | CONSERVATION COMMISSION COMMENTS           |
| 1        | 03/15/2021 | CONSERVATION COMMISSION COMMENTS           |
| 0        | 01/21/2021 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION |

PROJECT: 4,493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT 40 SIZER DRIVE WALES, MASSACHUSETTS

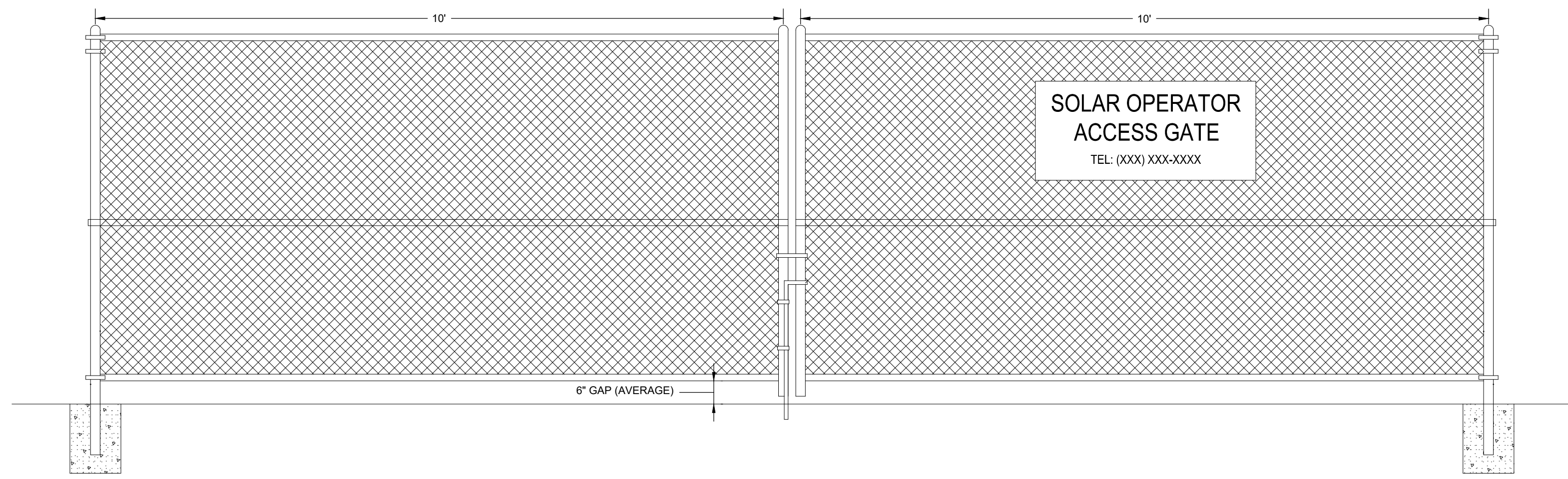
CLIENT: SUNPIN ENERGY SERVICES, LLC

DETAILS SHEET (1 OF 2)

Securing a brighter future through solar

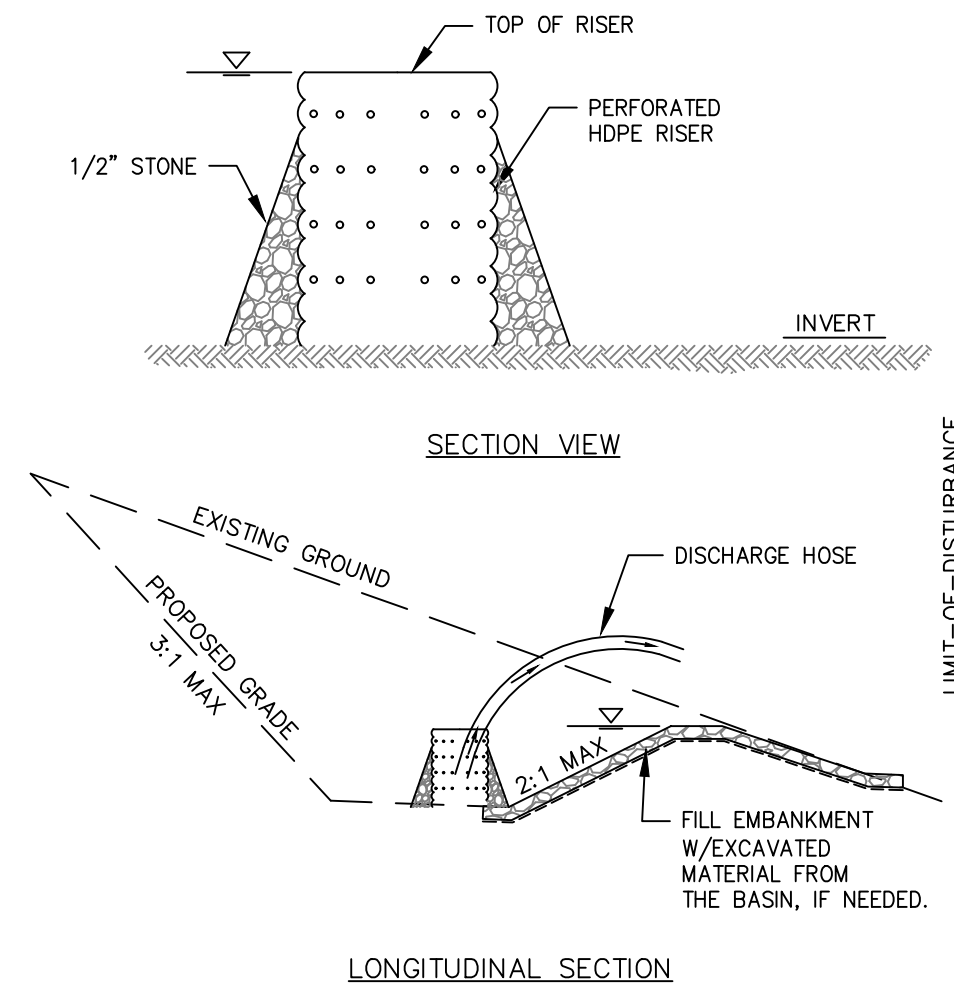
|                            |                 |
|----------------------------|-----------------|
| DESIGNED BY: MJW           | DRAWN BY: DED   |
| CHECKED BY: APV            | SCALE: AS SHOWN |
| PROJECT NUMBER: 3652200259 |                 |
| DRAWING NUMBER: C-501      |                 |
| SHEET NUMBER: 10 OF 11     |                 |





- NOTES:**
1. A "KNOX BOX" SHALL BE PROVIDED AT EVERY GATE LOCATION FOR EMERGENCY ACCESS.

**ACCESS GATE DETAIL**  
NOT TO SCALE



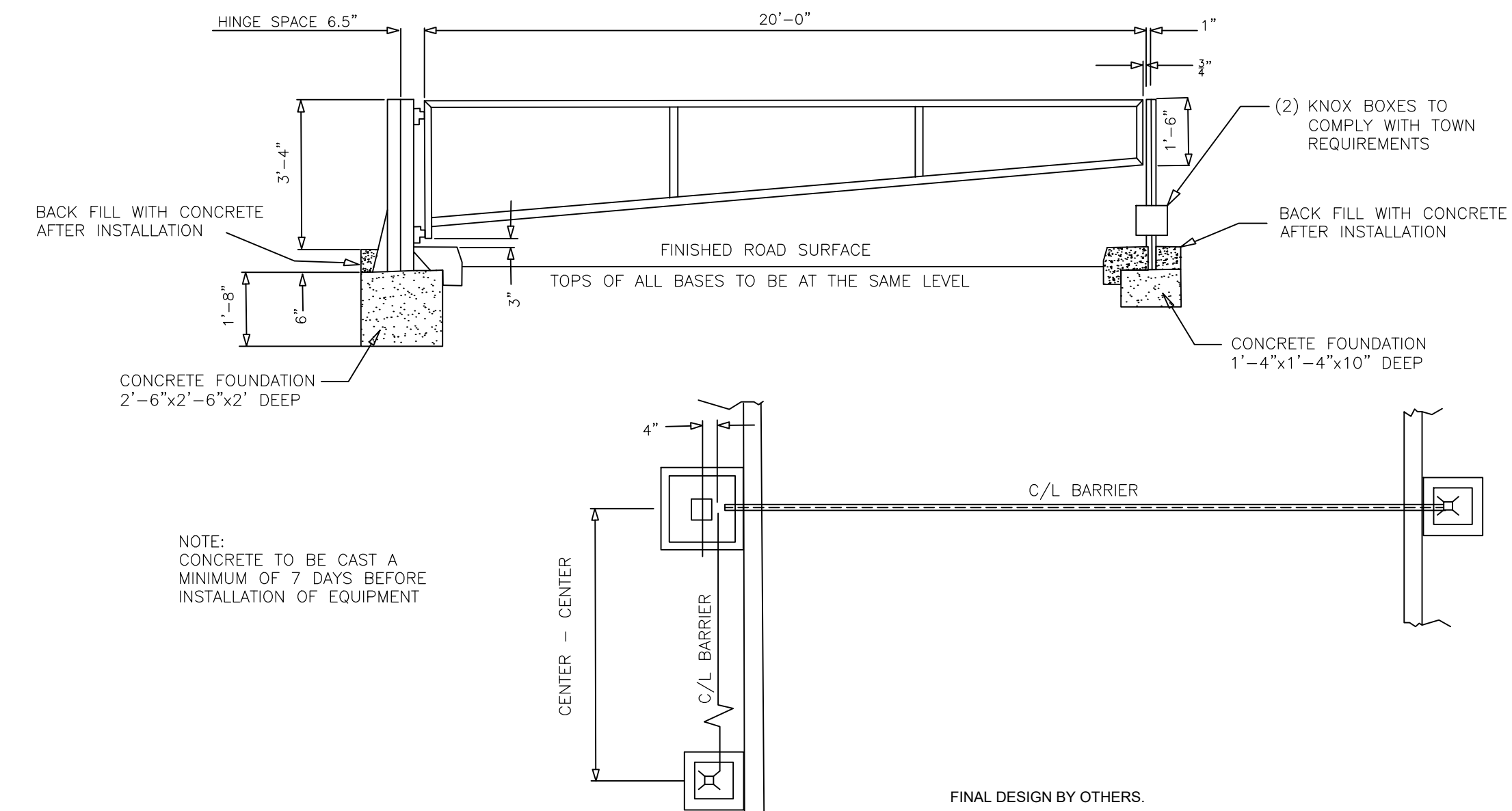
- NOTES:**
1. TOTAL MIN STORAGE VOLUME = 3' X CONTRIBUTING AREA PER MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS.
  2. SEDIMENT SHALL BE REMOVED WHEN THE TRAP IS 1/2 FULL AT A MINIMUM.
  3. THE BASIN SHALL REMAIN IN PLACE UNTIL THE SITE HAS BEEN STABILIZED WITH BUILDINGS, PAVEMENT, OR ESTABLISHED VEGETATION, AS APPLICABLE.
  4. PUMP DISCHARGE WILL BE DIRECTED TO A SILT BAG IN UPLANDS IN A WELL-VEGETATED AREA, AS NEEDED.

**TEMPORARY SEDIMENT TRAP**  
NOT TO SCALE

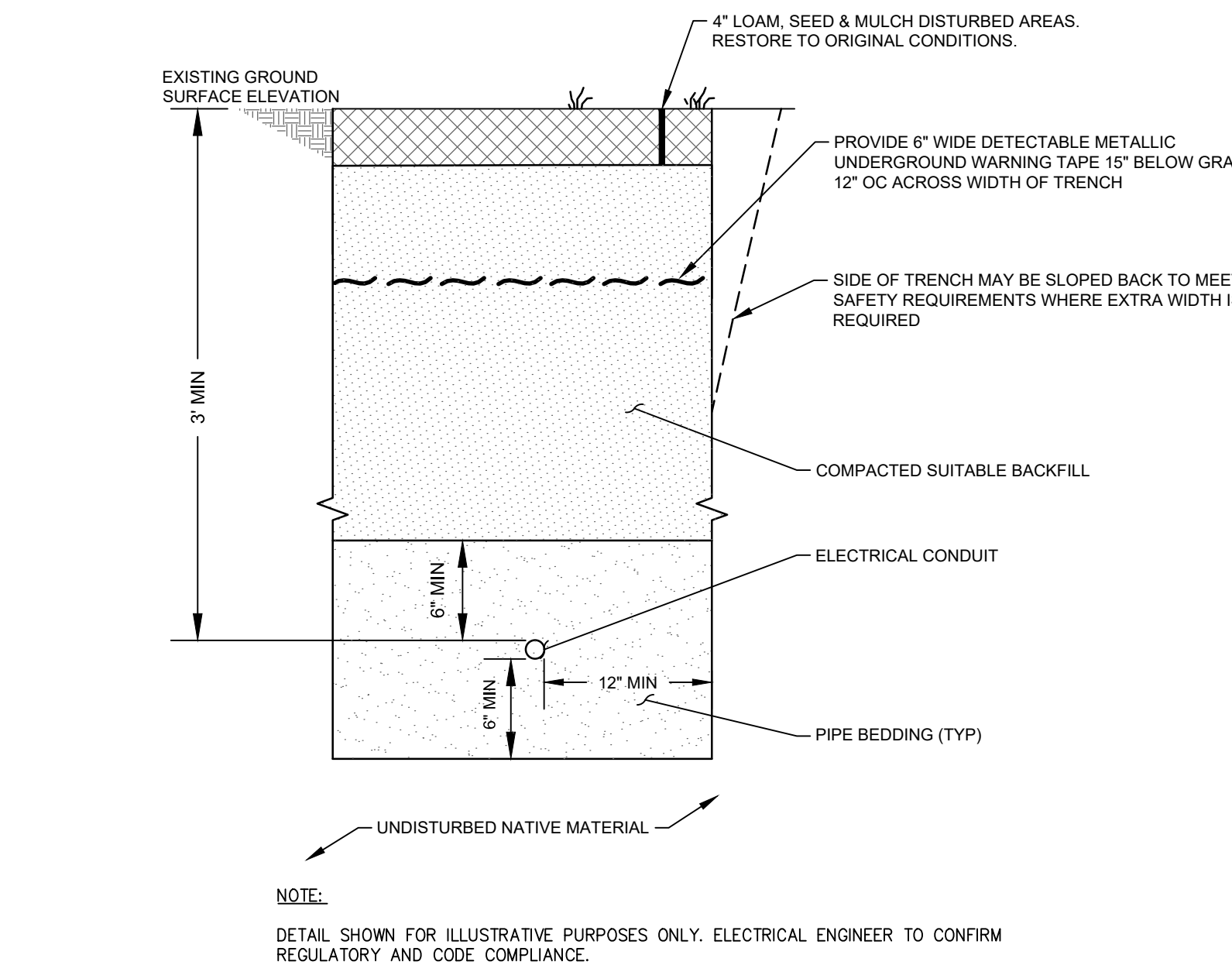
| SEDIMENT TRAP ID  | SEDIMENT TRAP 1 | SEDIMENT TRAP 2 | SEDIMENT TRAP 3 | SEDIMENT TRAP 4 |
|---|-----------------|-----------------|-----------------|-----------------|
| DRAINAGE AREA, SQ.FT.   | 61,304          | 110,975         | 148,463         | 172,321         |
| DRAINAGE AREA, AC.  | 1.41            | 2.55            | 3.41            | 3.96            |
| REQUIRED STORAGE VOLUME, CU.FT. (12-INCH PER ACRE OF DRAINAGE AREA) | 2,554           | 4,624           | 6,445           | 7,180           |
| PROPOSED TEMPORARY SEDIMENT TRAP BOTTOM AREA, SQ.FT.                | 2,553           | 4,767           | 2,488           | 2,845           |
| PROPOSED TEMPORARY SEDIMENT TRAP TOP AREA, SQ.FT.                   | 3,478           | 5,576           | 4,120           | 4,415           |
| PROPOSED TEMPORARY SEDIMENT TRAP DEPTH, FT.                         | 1               | 1               | 2               | 2               |
| PROPOSED TEMPORARY SEDIMENT TRAP STORAGE VOLUME, CU.FT.             | 3,016           | 5,172           | 6,608           | 7,260           |

\*MAX ALLOWED DRAINAGE AREA TO A SEDIMENT TRAP IS 5 ACRES, PER MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS

14

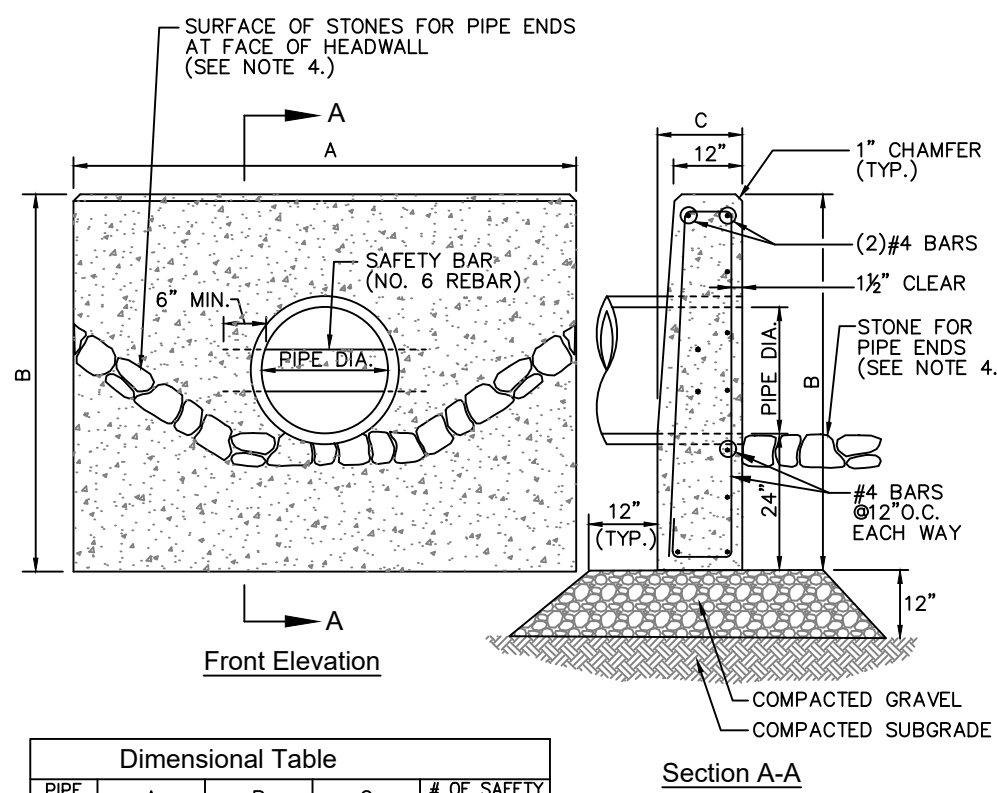


**PIPE GATE DETAIL**  
NOT TO SCALE



**ELECTRICAL CONDUIT UTILITY TRENCH**  
NOT TO SCALE

15

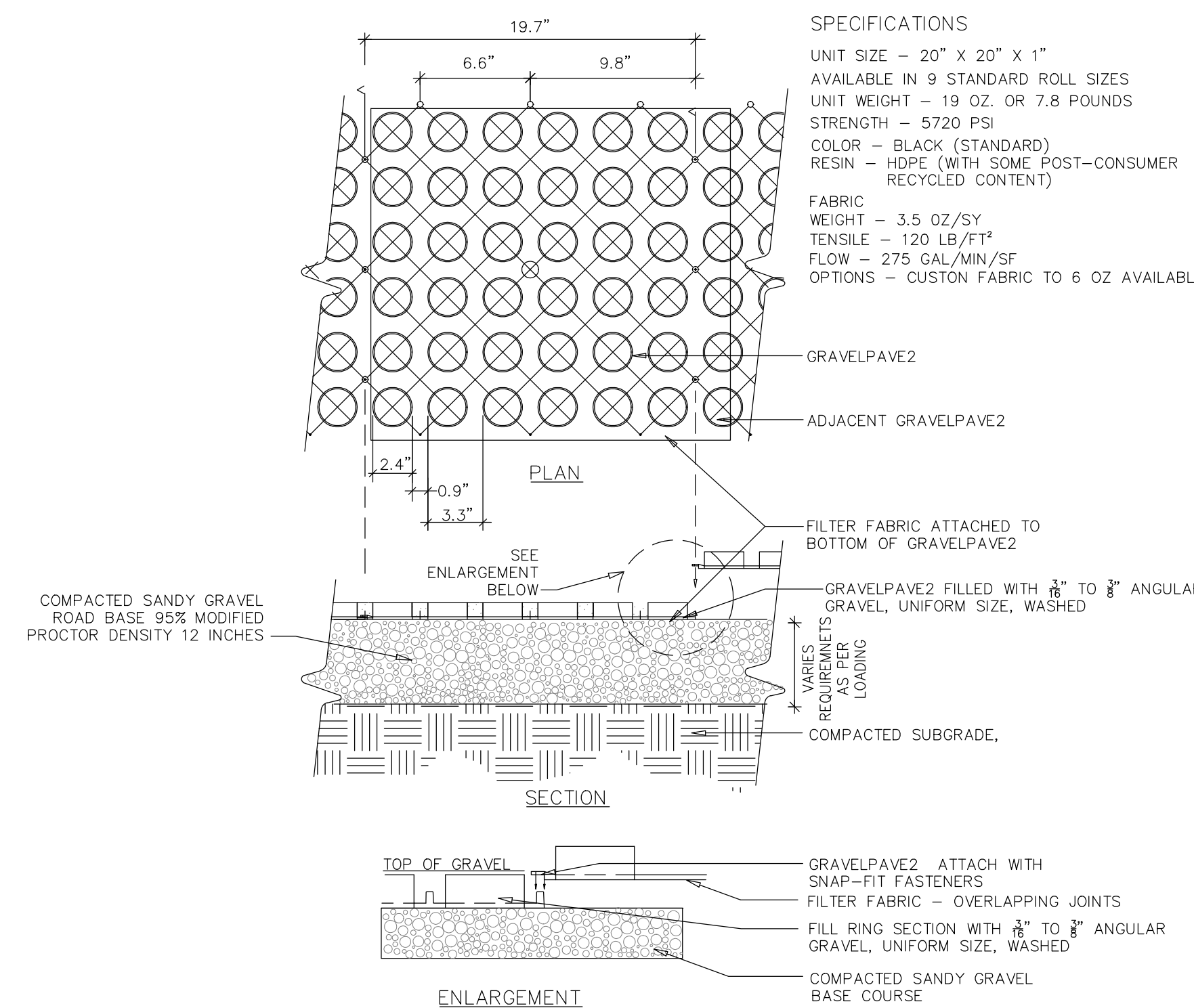


| PIPE DIA. | A      | B      | C     | # OF SAFETY BARS |
|-----------|--------|--------|-------|------------------|
| 12"       | 5'-6"  | 4'-2"  | 1'-6" | -                |
| 15"       | 6'-6"  | 4'-5"  | 1'-6" | -                |
| 18"       | 7'-6"  | 4'-9"  | 1'-6" | 1                |
| 24"       | 9'-0"  | 5'-3"  | 1'-6" | 1                |
| 30"       | 11'-0" | 5'-10" | 1'-6" | 2                |
| 36"       | 13'-0" | 6'-4"  | 1'-9" | 2                |
| 42"       | 15'-9" | 6'-11" | 1'-9" | 3                |
| 48"       | 17'-9" | 7'-5"  | 2'-0" | 3                |
| 60"       | 21'-9" | 8'-6"  | 2'-6" | 4                |
| 72"       | 25'-9" | 9'-7"  | 3'-0" | 5                |

- Notes:**
1. CONCRETE SHALL BE MINIMUM COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
  2. SAFETY BARS TO BE OMITTED WHERE INDICATED ON PLANS.
  3. SAFETY BARS SHALL BE SET TO CREATE EQUAL OPENING DIMENSIONS.
  4. SEE PLUNGE POOL DETAIL.

**CONCRETE HEADWALL**  
NOT TO SCALE

16



**TYPICAL GRAVELPAVE2**  
NOT TO SCALE

17

| REVISION | DATE       | ISSUE / REVISION DESCRIPTION               | APPROVED |
|----------|------------|--|----------|
| 5        | 09/24/2021 | CC PEER REVIEW                             | APV      |
| 4        | 06/29/2021 | REVISED PER CONSERVATION COMMISSION        | MJW      |
| 3        | 05/20/2021 | ISSUED TO CONSERVATION COMMISSION          | MJW      |
| 2        | 04/29/2021 | CONSERVATION COMMISSION COMMENTS           | MJW      |
| 1        | 03/15/2021 | CONSERVATION COMMISSION COMMENTS           | APV      |
| 0        | 01/21/2021 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION | MJW      |

PROJECT: **4,493 MW DC GROUND-MOUNT SOLAR PV DEVELOPMENT 40 SIZER DRIVE WALES, MASSACHUSETTS**

CLIENT: **SUNPIN ENERGY SERVICES, LLC**

TITLE: **DETAILS (SHEET 2 OF 2)**

**SUNPIN**  
Securing a brighter future through solar

SEAL: **ANDREW P. VARDOLAKIS**  
No. 52524  
REGISTERED PROFESSIONAL ENGINEER  
9/24/2021

DESIGNED BY: MJW  
DRAWN BY: DED  
CHECKED BY: APV  
SCALE: AS SHOWN  
PROJECT NUMBER: 3652200259  
DRAWING NUMBER: **C-502**  
SHEET NUMBER: **11 OF 11**