

BLUEWAVE

To: Town of Worthington Planning Board

From: BWC Wades Stream, LLC

Date: August 12th, 2026

Subject: Response to Planning Board

Dear Mr. Niswonger and members of the Planning Board:

WSP USA Inc. ("WSP") and BWC Wades Stream, LLC ("BlueWave") received questions and comments at the 7/14/2026 Worthington Planning Board Public Hearing. WSP and BlueWave have prepared the following responses and supporting documentation for consideration by the Board. To note, an updated plan set is included as Appendix A of this submittal.

7/14/2026 Comments:

1. Prepare proposed draft conditions

Response: Proposed draft conditions are included in Appendix B of this submittal.

2. What does annual Agricultural Solar Tariff Generation Unit reporting look like?

Response: The annual reporting form, per 225 CMR 28.00, can be found on the Commonwealth's website: <https://www.mass.gov/doc/astgu-annual-report-0/download>

3. The acoustic analysis should revise the receptor location at the 140 Buffington Hill Rd Property

Response: The Acoustic Analysis has been revised accordingly, see Appendix C. There is no material impact.

4. What is the recommended distance between pile driving and wells/septic systems?

Response: There is no specific standard associated with this activity. To note, as it relates to abutter's wells and septic systems, the racking is proposed to be installed, at minimum, 50' beyond the property line.

5. Discuss the volume and discharge rates anticipated at the culvert southeast of the property line.

Response: The existing Town-owned culvert within the Ridge Road ROW, southeast of the 190 Ridge Road property, is modeled as Design Point DP-SE in the latest Stormwater

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Report dated August 5, 2026. The stormwater analysis shows that the proposed conditions, peak flow rate and runoff volume, to the existing Town culvert is less than the existing conditions, as demonstrated in Table 1.2 on page 13 of the Stormwater Report.

6. The Board of Health asked the following questions:

- a. How will noise be measured if residents complain? Who performs and pays for testing? What corrective actions are available?

Response: Per proposed condition 3 in Appendix B, we have suggested providing the Building Inspector with a pre- and post- construction noise study to verify compliance with 310 CMR 7.10 to ensure noise mitigation measures are accounted for. If there are further concerns, they may be addressed to the Asset Management team.

- b. How will concerns about well pollution be handled? Who performs and pays for testing? What chemicals are included in test protocols? What corrective actions are available and again, who supervises and who pays?

Response: As has been addressed throughout submittals, particularly the 1/2/2026 Response to Questions, solar and storage have been widely studied to ensure safety of the equipment with groundwater. Should a major event occur, the MA DEP emergency response plan will be implemented, including a state response and liability on the owner to clean up any waste.

- c. How will concerns about septic system flooding be handled? Who pays for an investigation? Who is responsible for arranging for, paying for, and assuring the completion of corrective actions?

Response: As is provided in Appendix C of the 5/26/2026 Response to Questions, the Certificate of Insurance includes liability insurance.

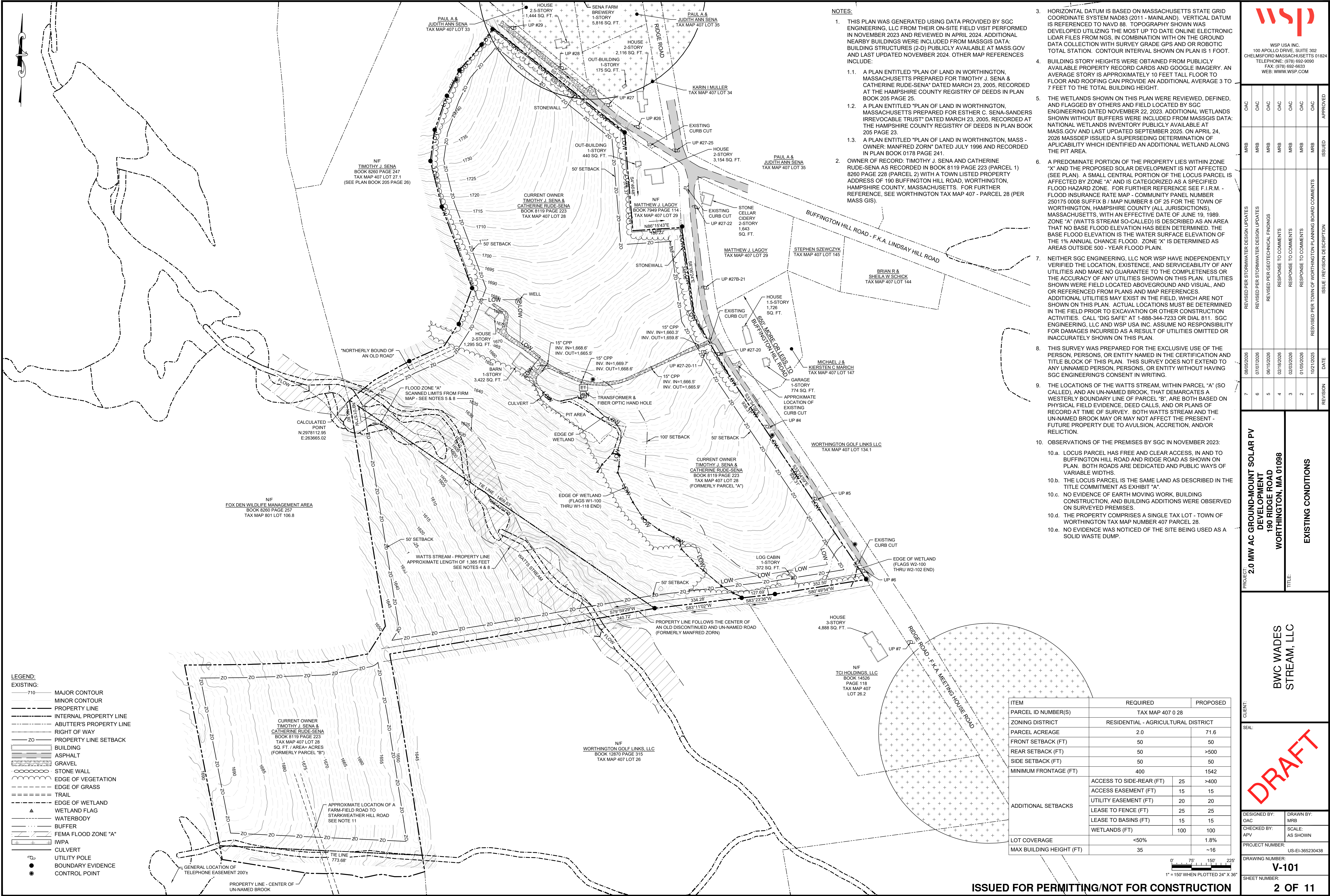
- d. How would any injuries associated with fires, maintenance, or accidents on the site be handled? Who would assure that such events were handled in accordance with legal and medical requirements? Who would pay for any needed rehab or support services?

Response: As is provided in Appendix C of the 5/26/2026 Response to Questions, the Certificate of Insurance includes liability insurance.

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Appendix A: Updated Site Plan

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION

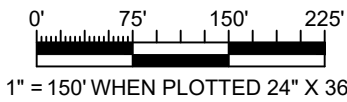


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 - MINOR CONTOUR
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 - INTERNAL PROPERTY LINE
 - ABUTTER'S PROPERTY LINE
 - RIGHT OF WAY
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 - WETLAND FLAG
 - WATERBODY
 - BUFFER
 - FEMA FLOOD ZONE "A"
 - IWPA
 - CULVERT
 - UTILITY POLE
 - BOUNDARY EVIDENCE
 - CONTROL POINT

NOTES:

- THIS PLAN WAS GENERATED USING DATA PROVIDED BY SGC ENGINEERING, LLC FROM THEIR ON-SITE FIELD VISIT PERFORMED IN NOVEMBER 2023 AND REVIEWED IN APRIL 2024. ADDITIONAL NEARBY BUILDINGS WERE INCLUDED FROM MASSGIS DATA: BUILDING STRUCTURES (2-D) PUBLICLY AVAILABLE AT MASS.GOV AND LAST UPDATED NOVEMBER 2024. OTHER MAP REFERENCES INCLUDE:
 - A PLAN ENTITLED "PLAN OF LAND IN WORTHINGTON, MASSACHUSETTS PREPARED FOR TIMOTHY J. SENA & CATHERINE RUDE-SENA" DATED MARCH 23, 2005, RECORDED AT THE HAMPSHIRE COUNTY REGISTRY OF DEEDS IN PLAN BOOK 205 PAGE 25.
 - A PLAN ENTITLED "PLAN OF LAND IN WORTHINGTON, MASSACHUSETTS PREPARED FOR ESTHER C. SENA-SANDERS IRREVOCABLE TRUST" DATED MARCH 23, 2005, RECORDED AT THE HAMPSHIRE COUNTY REGISTRY OF DEEDS IN PLAN BOOK 205 PAGE 23.
 - A PLAN ENTITLED "PLAN OF LAND IN WORTHINGTON, MASS - OWNER: MANFRED ZORN" DATED JULY 1996 AND RECORDED IN PLAN BOOK 0178 PAGE 241.
- OWNER OF RECORD: TIMOTHY J. SENA AND CATHERINE RUDE-SENA AS RECORDED IN BOOK 8119 PAGE 223 (PARCEL 1) 8260 PAGE 228 (PARCEL 2) WITH A TOWN LISTED PROPERTY ADDRESS OF 190 BUFFINGTON HILL ROAD, WORTHINGTON, HAMPSHIRE COUNTY, MASSACHUSETTS. FOR FURTHER REFERENCE, SEE WORTHINGTON TAX MAP 407 - PARCEL 28 (PER MASS GIS).
- HORIZONTAL DATUM IS BASED ON MASSACHUSETTS STATE GRID COORDINATE SYSTEM NAD83 (2011 - MAINLAND). VERTICAL DATUM IS REFERENCED TO NAVD 88. TOPOGRAPHY SHOWN WAS DEVELOPED UTILIZING THE MOST UP TO DATE ONLINE ELECTRONIC LIDAR FILES FROM NGS, IN COMBINATION WITH ON THE GROUND DATA COLLECTION WITH SURVEY GRADE GPS AND OR ROBOTIC TOTAL STATION. CONTOUR INTERVAL SHOWN ON PLAN IS 1 FOOT.
- BUILDING STORY HEIGHTS WERE OBTAINED FROM PUBLICLY AVAILABLE PROPERTY RECORD CARDS AND GOOGLE IMAGERY. AN AVERAGE STORY IS APPROXIMATELY 10 FEET TALL FLOOR TO FLOOR AND ROOFING CAN PROVIDE AN ADDITIONAL AVERAGE 3 TO 7 FEET TO THE TOTAL BUILDING HEIGHT.
- THE WETLANDS SHOWN ON THIS PLAN WERE REVIEWED, DEFINED, AND FLAGGED BY OTHERS AND FIELD LOCATED BY SGC ENGINEERING DATED NOVEMBER 22, 2023. ADDITIONAL WETLANDS SHOWN WITHOUT BUFFERS WERE INCLUDED FROM MASSGIS DATA: NATIONAL WETLANDS INVENTORY PUBLICLY AVAILABLE AT MASS.GOV AND LAST UPDATED SEPTEMBER 2025. ON APRIL 24, 2026 MASSDEP ISSUED A SUPERSEDING DETERMINATION OF APPLICABILITY WHICH IDENTIFIED AN ADDITIONAL WETLAND ALONG THE PIT AREA.
- A PREDOMINATE PORTION OF THE PROPERTY LIES WITHIN ZONE "X" AND THE PROPOSED SOLAR DEVELOPMENT IS NOT AFFECTED (SEE PLAN). A SMALL CENTRAL PORTION OF THE LOCUS PARCEL IS AFFECTED BY ZONE "A" AND IS CATEGORIZED AS A SPECIFIED FLOOD HAZARD ZONE. FOR FURTHER REFERENCE SEE F.I.R.M. - FLOOD INSURANCE RATE MAP - COMMUNITY PANEL NUMBER 250175 0008 SUFFIX B / MAP NUMBER 8 OF 25 FOR THE TOWN OF WORTHINGTON, HAMPSHIRE COUNTY (ALL JURISDICTIONS), MASSACHUSETTS, WITH AN EFFECTIVE DATE OF JUNE 19, 1989. ZONE "A" (WATTS STREAM SO-CALLED) IS DESCRIBED AS AN AREA THAT NO BASE FLOOD ELEVATION HAS BEEN DETERMINED. THE BASE FLOOD ELEVATION IS THE WATER SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD. ZONE "X" IS DETERMINED AS AREAS OUTSIDE 500 - YEAR FLOOD PLAIN.
- NEITHER SGC ENGINEERING, LLC NOR WSP HAVE INDEPENDENTLY VERIFIED THE LOCATION, EXISTENCE, AND SERVICEABILITY OF ANY UTILITIES AND MAKE NO GUARANTEE TO THE COMPLETENESS OR THE ACCURACY OF ANY UTILITIES SHOWN ON THIS PLAN. UTILITIES SHOWN WERE FIELD LOCATED ABOVEGROUND AND VISUAL, AND OR REFERENCED FROM PLANS AND MAP REFERENCES. ADDITIONAL UTILITIES MAY EXIST IN THE FIELD, WHICH ARE NOT SHOWN ON THIS PLAN. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD PRIOR TO EXCAVATION OR OTHER CONSTRUCTION ACTIVITIES. CALL "DIG SAFE" AT 1-888-344-7233 OR DIAL 811. SGC ENGINEERING, LLC AND WSP USA INC. ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN ON THIS PLAN.
- THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED IN THE CERTIFICATION AND TITLE BLOCK OF THIS PLAN. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON, PERSONS, OR ENTITY WITHOUT HAVING SGC ENGINEERING'S CONSENT IN WRITING.
- THE LOCATIONS OF THE WATTS STREAM, WITHIN PARCEL "A" (SO CALLED), AND AN UN-NAMED BROOK, THAT DEMARCATES A WESTERLY BOUNDARY LINE OF PARCEL "B", ARE BOTH BASED ON PHYSICAL FIELD EVIDENCE, DEED CALLS, AND OR PLANS OF RECORD AT TIME OF SURVEY. BOTH WATTS STREAM AND THE UN-NAMED BROOK MAY OR MAY NOT AFFECT THE PRESENT FUTURE PROPERTY DUE TO AVULSION, ACCRETION, AND/OR RELICTION.
- OBSERVATIONS OF THE PREMISES BY SGC IN NOVEMBER 2023:
 - LOCUS PARCEL HAS FREE AND CLEAR ACCESS, IN AND TO BUFFINGTON HILL ROAD AND RIDGE ROAD AS SHOWN ON PLAN. BOTH ROADS ARE DEDICATED AND PUBLIC WAYS OF VARIABLE WIDTHS.
 - THE LOCUS PARCEL IS THE SAME LAND AS DESCRIBED IN THE TITLE COMMITMENT AS EXHIBIT "A".
 - NO EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION, AND BUILDING ADDITIONS WERE OBSERVED ON SURVEYED PREMISES.
 - THE PROPERTY COMPRISES A SINGLE TAX LOT - TOWN OF WORTHINGTON TAX MAP NUMBER 407 PARCEL 28.
 - NO EVIDENCE WAS NOTICED OF THE SITE BEING USED AS A SOLID WASTE DUMP.

ITEM	REQUIRED	PROPOSED
PARCEL ID NUMBER(S)	TAX MAP 407 0 28	
ZONING DISTRICT	RESIDENTIAL - AGRICULTURAL DISTRICT	
PARCEL ACREAGE	2.0	71.6
FRONT SETBACK (FT)	50	50
REAR SETBACK (FT)	50	>500
SIDE SETBACK (FT)	50	50
MINIMUM FRONTAGE (FT)	400	1542
ADDITIONAL SETBACKS	ACCESS TO SIDE-REAR (FT)	25 >400
	ACCESS EASEMENT (FT)	15 15
	UTILITY EASEMENT (FT)	20 20
	LEASE TO FENCE (FT)	25 25
	LEASE TO BASINS (FT)	15 15
LOT COVERAGE	<50%	1.8%
MAX BUILDING HEIGHT (FT)	35	~16



ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION

WSP USA INC.
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TELEPHONE: (978) 692-9090
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WEB: WWW.WSP.COM

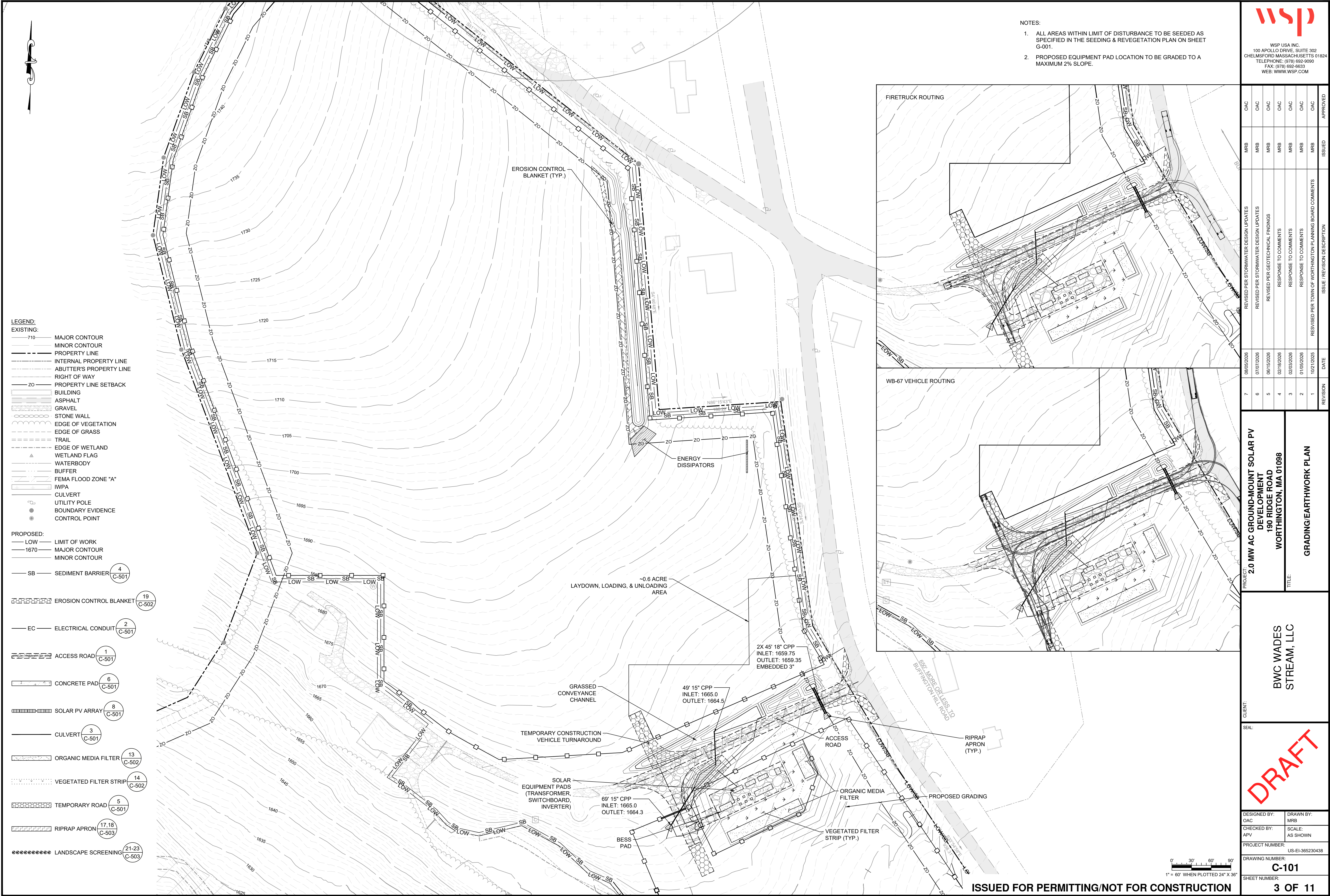
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OAC	MRB
CHECKED BY:	SCALE:
APV	AS SHOWN
PROJECT NUMBER:	US-EI-365230438
DRAWING NUMBER:	V-101
SHEET NUMBER:	2 OF 11

PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT 190 RIDGE ROAD WORTHINGTON, MA 01098

TITLE: EXISTING CONDITIONS

CLIENT: BWC WADES STREAM, LLC

REVISION	DATE	ISSUE / REVISION DESCRIPTION
7	08/02/2026	REVISED PER STORMWATER DESIGN UPDATES
6	07/07/2026	REVISED PER STORMWATER DESIGN UPDATES
5	06/16/2026	REVISED PER GEOTECHNICAL FINDINGS
4	02/18/2026	RESPONSE TO COMMENTS
3	02/03/2026	RESPONSE TO COMMENTS
2	01/05/2026	RESPONSE TO COMMENTS
1	10/27/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS
		ISSUED



- LEGEND:**
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- 710 MAJOR CONTOUR
 - MINOR CONTOUR
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 - IWPA
 - CULVERT
 - UTILITY POLE
 - BOUNDARY EVIDENCE
 - CONTROL POINT
- PROPOSED:**
- LOW LIMIT OF WORK
 - 1670 MAJOR CONTOUR
 - MINOR CONTOUR
 - SB SEDIMENT BARRIER
 - EROSION CONTROL BLANKET
 - EC ELECTRICAL CONDUIT
 - ACCESS ROAD
 - CONCRETE PAD
 - SOLAR PV ARRAY
 - CULVERT
 - ORGANIC MEDIA FILTER
 - VEGETATED FILTER STRIP
 - TEMPORARY ROAD
 - RIPRAP APRON
 - LANDSCAPE SCREENING

- NOTES:**
- ALL AREAS WITHIN LIMIT OF DISTURBANCE TO BE SEEDED AS SPECIFIED IN THE SEEDING & REVEGETATION PLAN ON SHEET G-001.
 - PROPOSED EQUIPMENT PAD LOCATION TO BE GRADED TO A MAXIMUM 2% SLOPE.

wsp

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1	10/21/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB	OAC

PROJECT:
2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT
190 RIDGE ROAD
WORTHINGTON, MA 01098

TITLE:
GRADING/EARTHWORK PLAN

CLIENT:
BWC WADES
STREAM, LLC

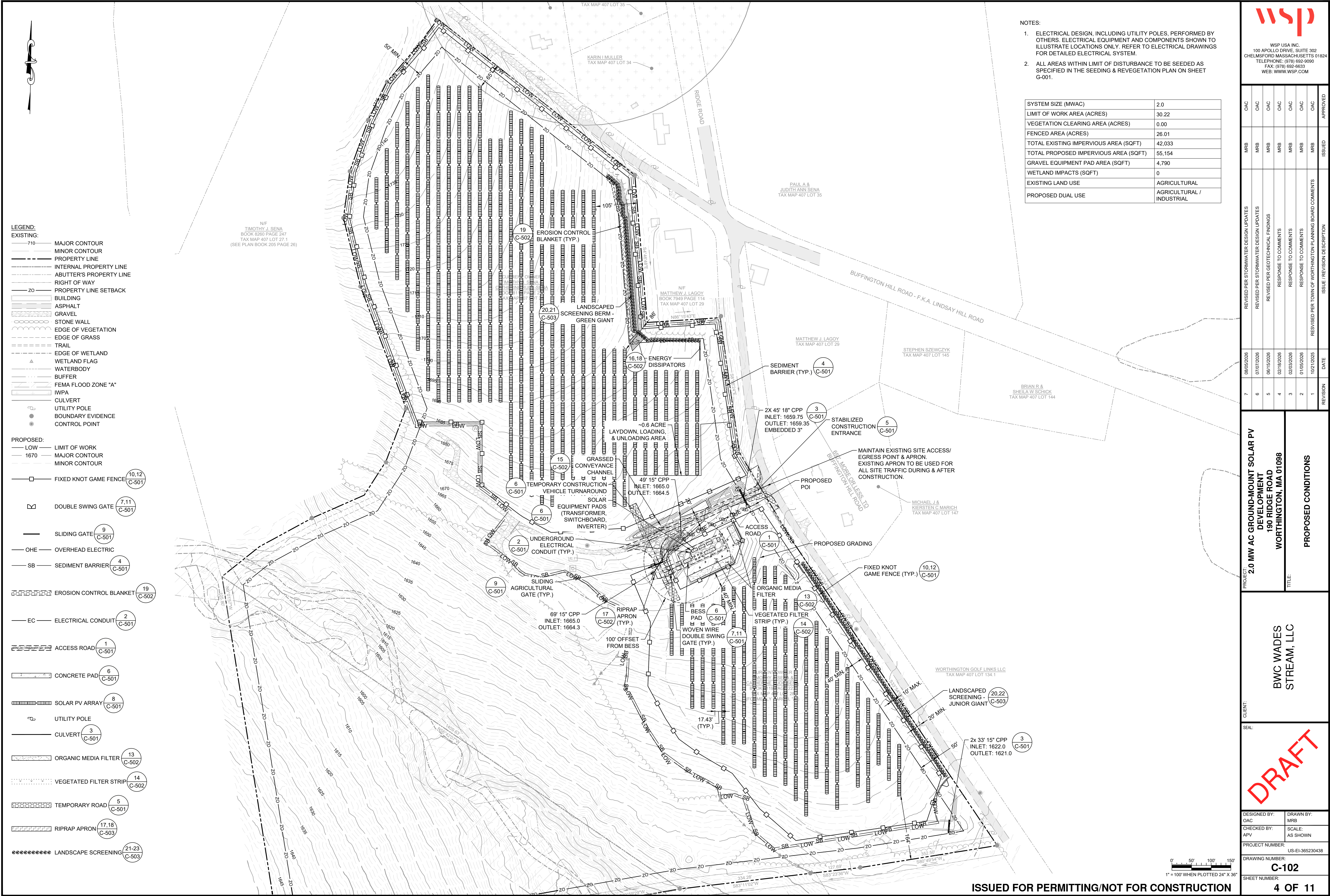
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CHECKED BY:
APV

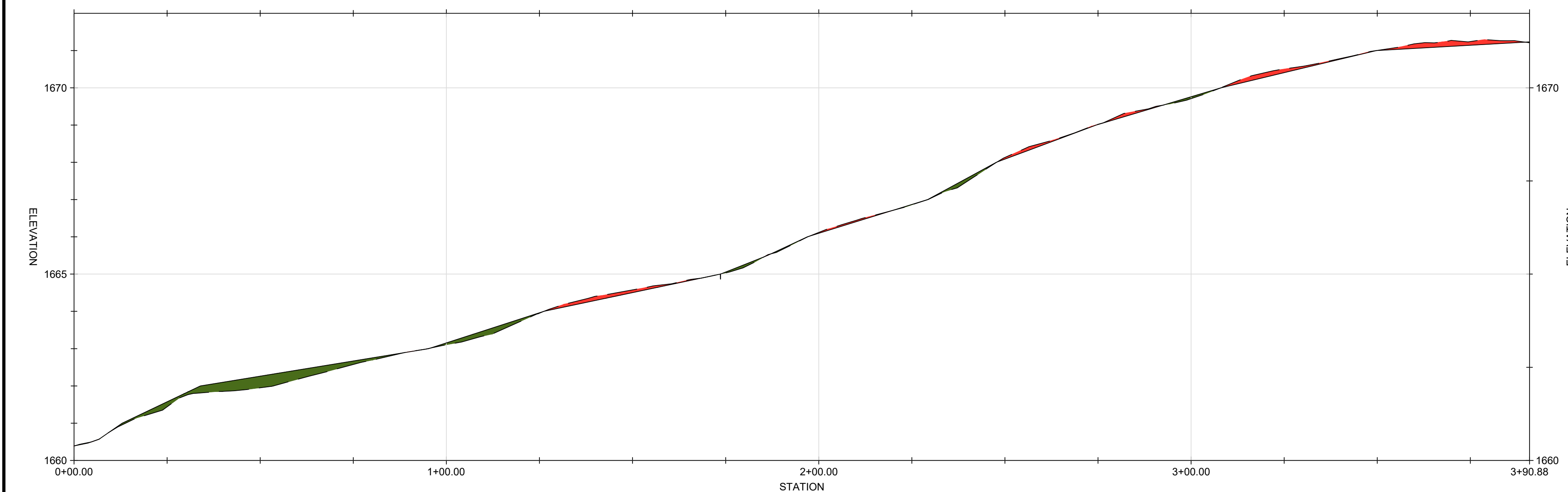
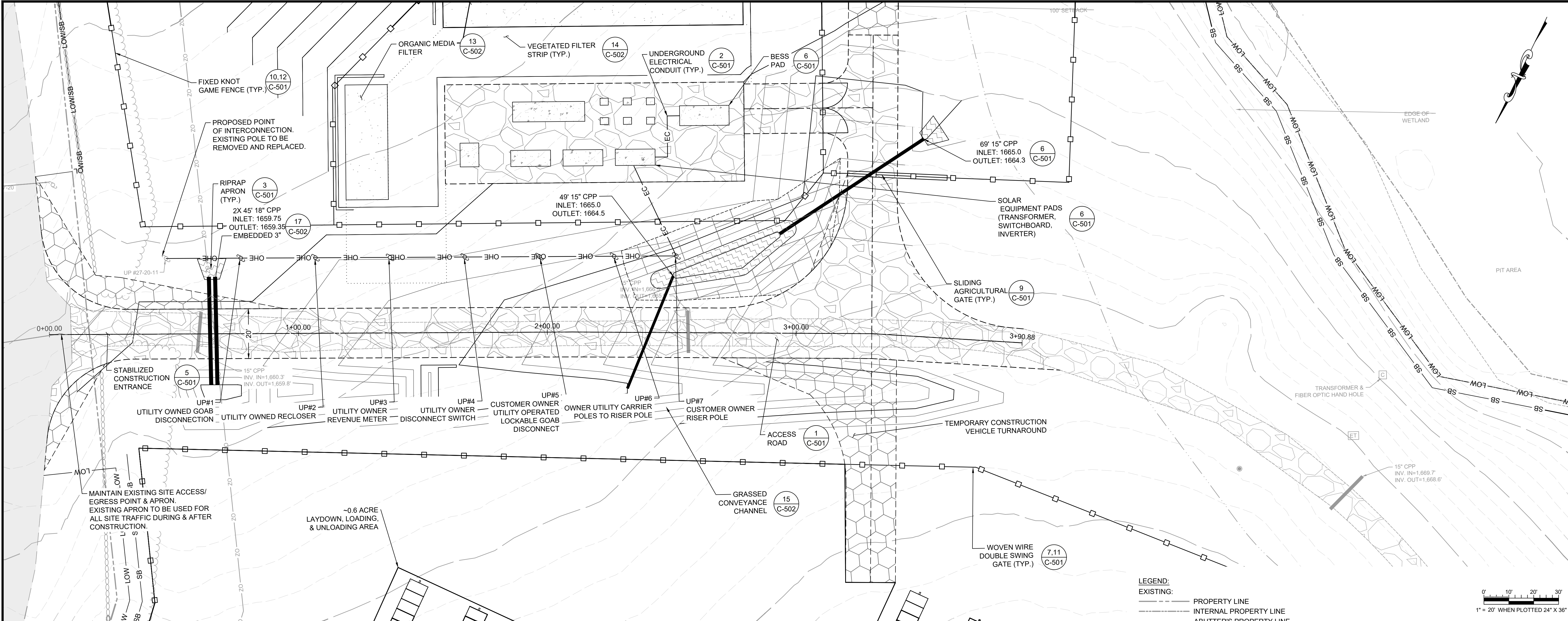
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US-EI-365230438

DRAWING NUMBER:
C-101

SHEET NUMBER:
3 OF 11







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- PROPOSED:
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 - LIMIT OF WORK
 - MAJOR CONTOUR
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- 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 TOTAL GRADING CUT VOLUME FOR THE SITE IS 1627.87 CUBIC YARDS. THE TOTAL GRADING FILL VOLUME IS 1482.78 CUBIC YARDS. THE GRADING WILL RESULT IN A NET CUT VOLUME OF 145.09 CUBIC YARDS WHICH CAN BE DISPERSED ACROSS THE SITE AT THE OWNER'S DISCRETION.

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4	02/18/2026	RESPONSE TO COMMENTS	MRB
3	02/03/2026	RESPONSE TO COMMENTS	MRB
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1	10/27/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB

PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT

190 RIDGE ROAD

WORTHINGTON, MA 01098

TITLE: ACCESS ROAD TOPOGRAPHIC PROFILE ANALYSIS

CLIENT: BWC WADES STREAM, LLC

SEAL:

DESIGNED BY: OAC

CHECKED BY: APV

PROJECT NUMBER: US-EI-365230438

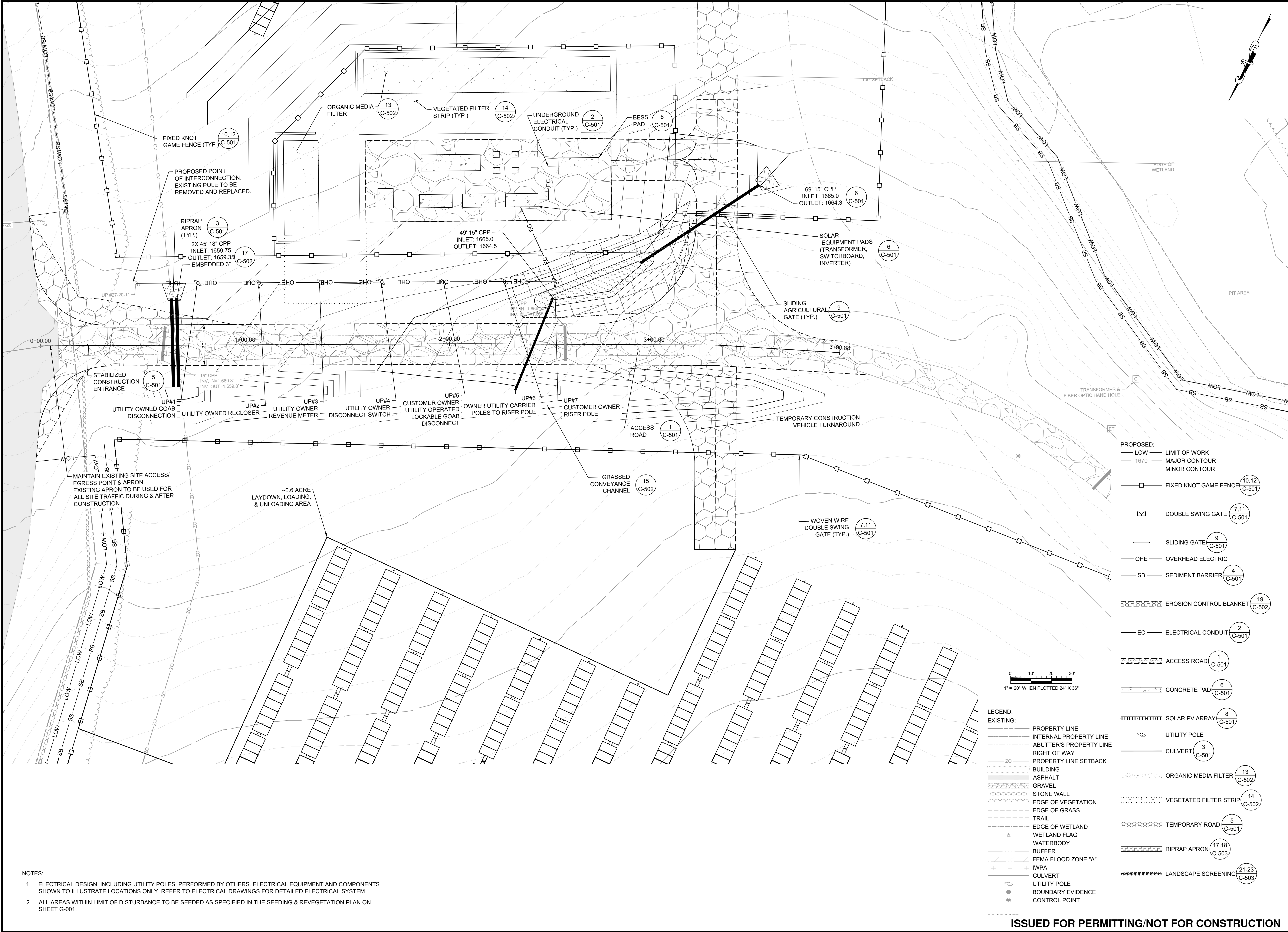
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SHEET NUMBER: 6 OF 11

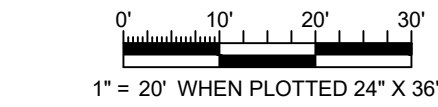
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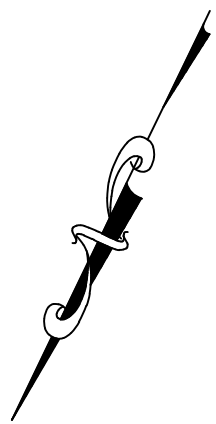
ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



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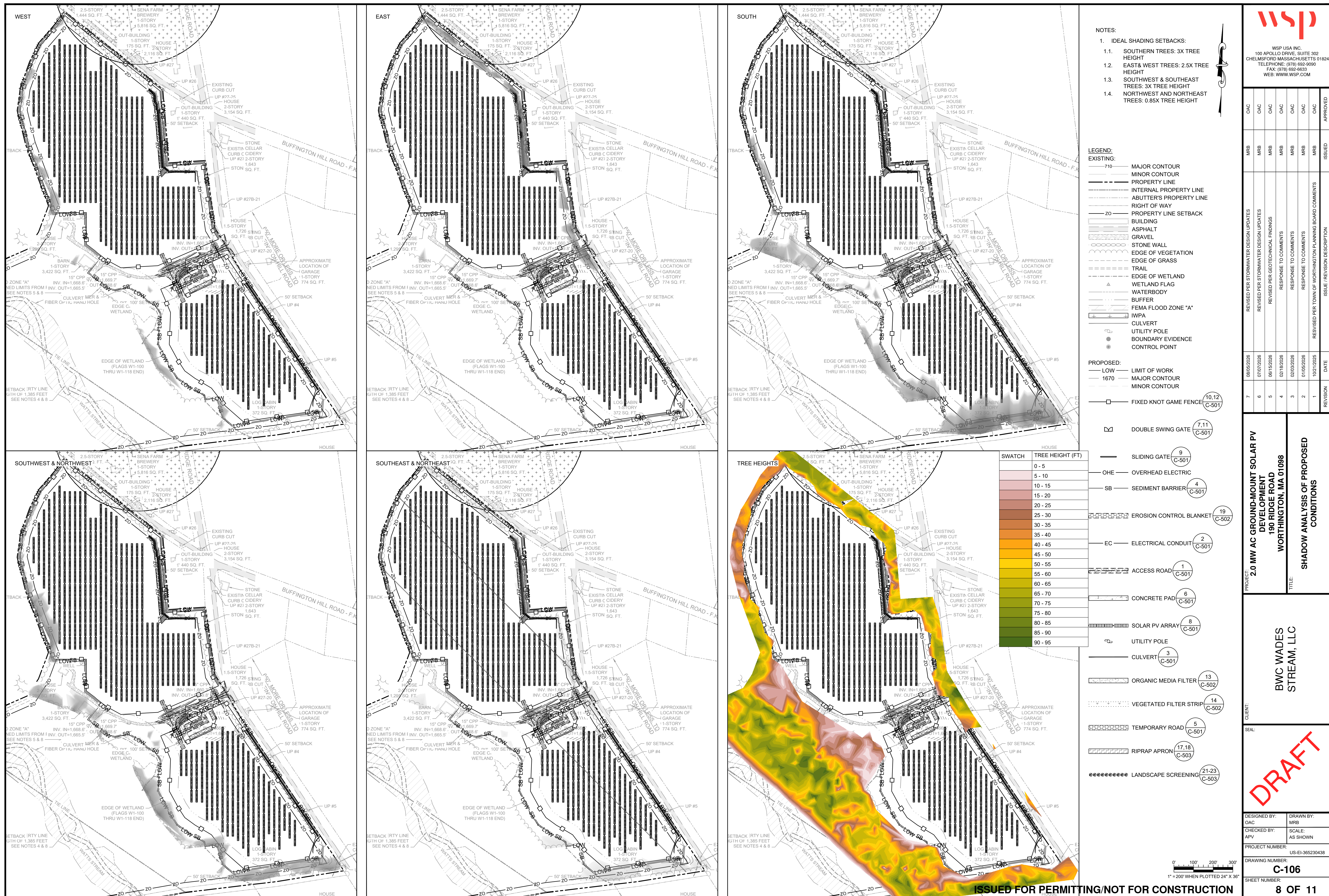
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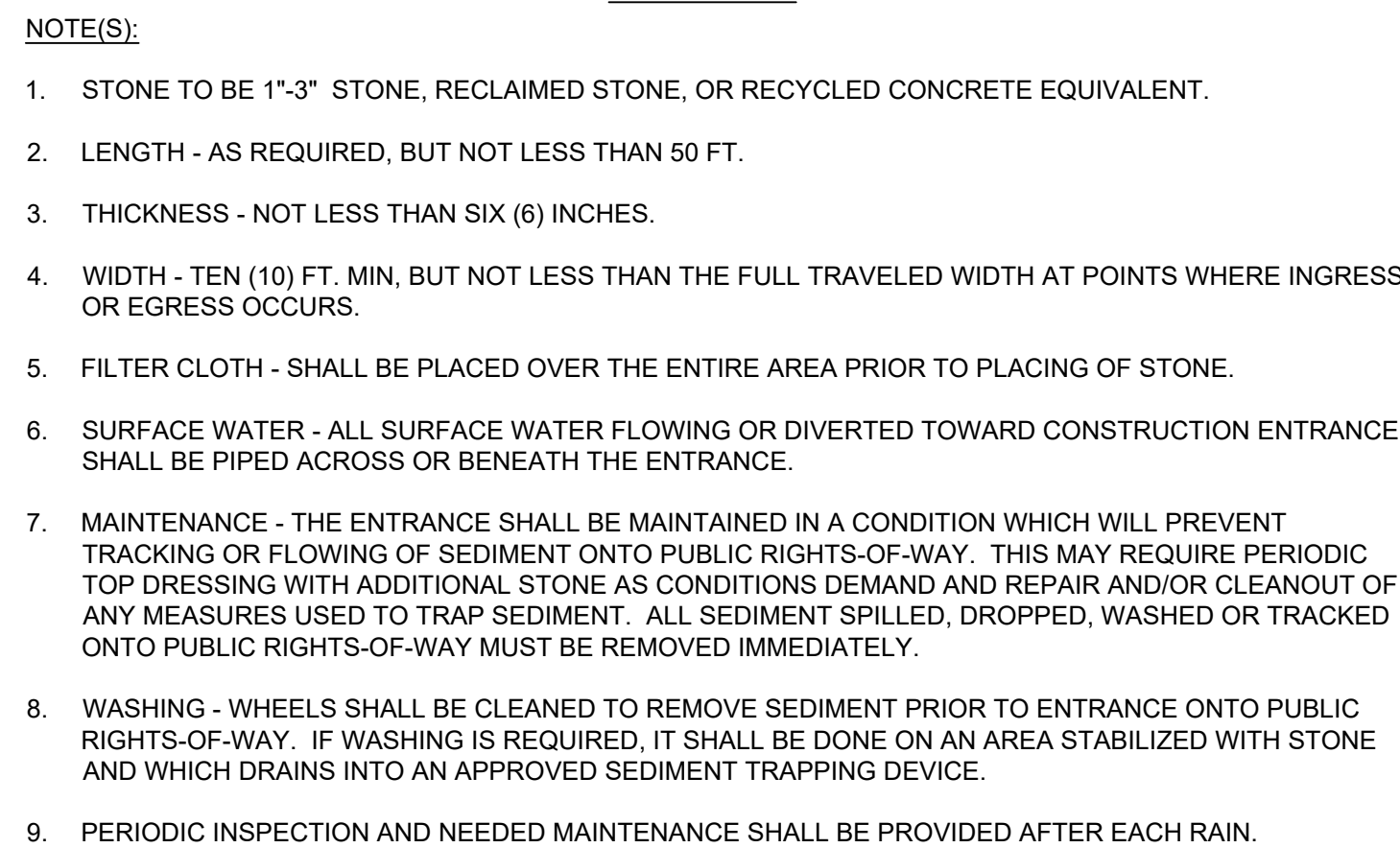
CLIENT: BWC WADES STREAM, LLC

SEAL:

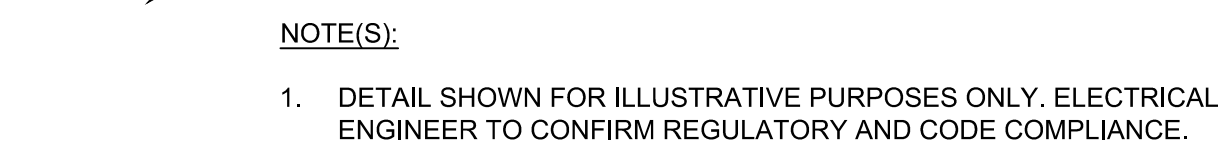
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CHECKED BY: APV
PROJECT NUMBER: US-EI-365230438

DRAWN BY: MRB
SCALE: AS SHOWN
DRAWING NUMBER: C-105
SHEET NUMBER: 7 OF 11





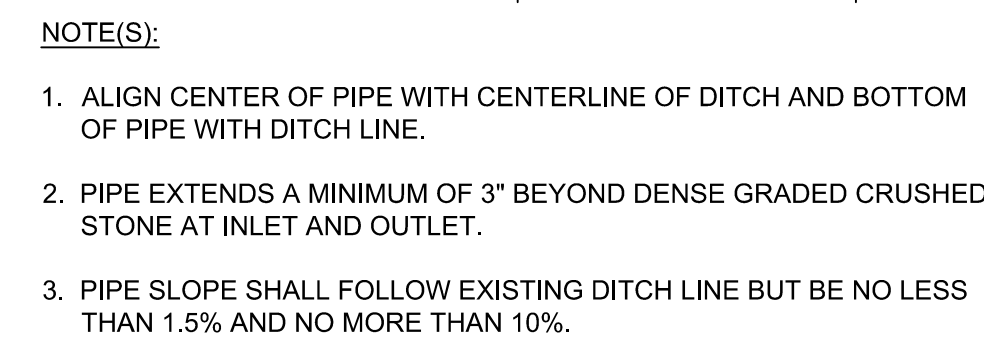
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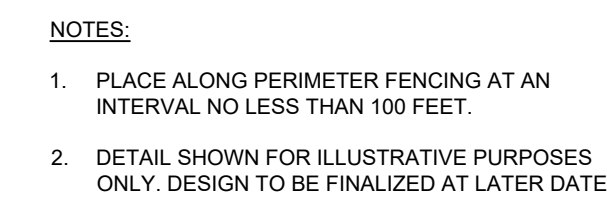
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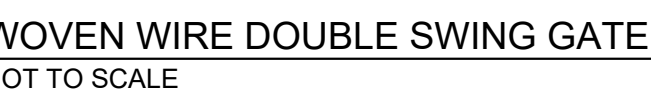
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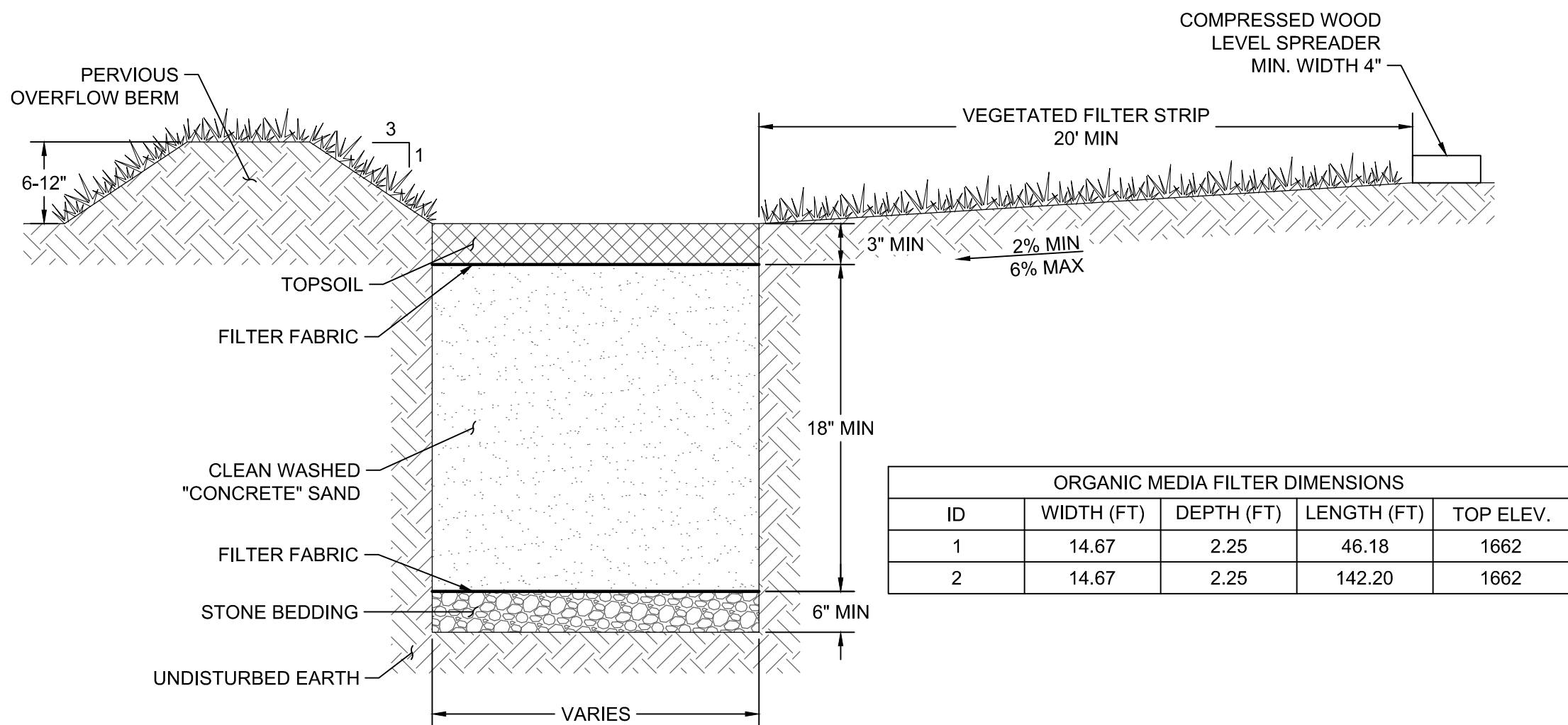
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HIGH VOLTAGE SIGN
NOT TO SCALE



ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



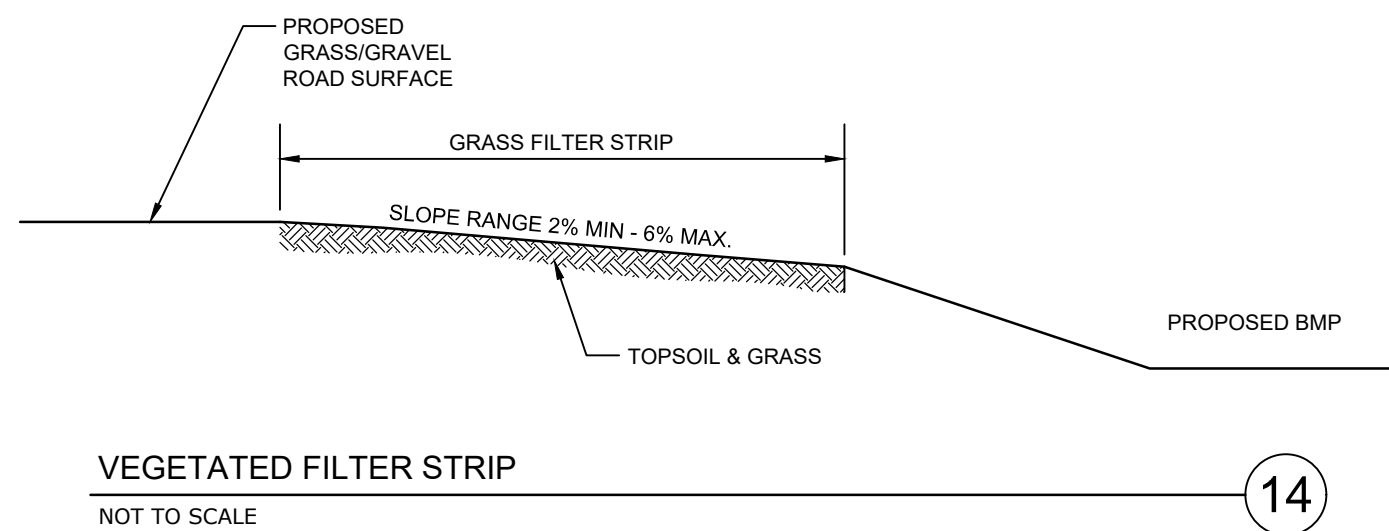
NOTE(S):

1. PERVIOUS BERM MAY VARY IN HEIGHT BETWEEN 6 TO 12 INCHES IN ORDER TO ACHIEVE A LEVEL ELEVATION ALONG THE TOP OF THE BERM TO THE MAXIMUM EXTENT POSSIBLE.

ORGANIC MEDIA FILTER

NOT TO SCALE

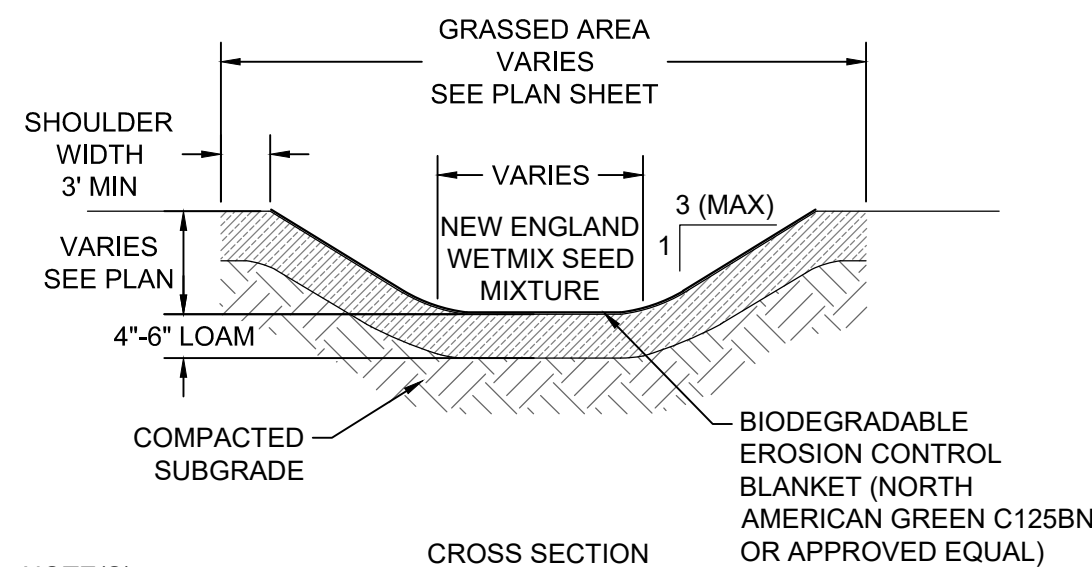
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VEGETATED FILTER STRIP

NOT TO SCALE

14



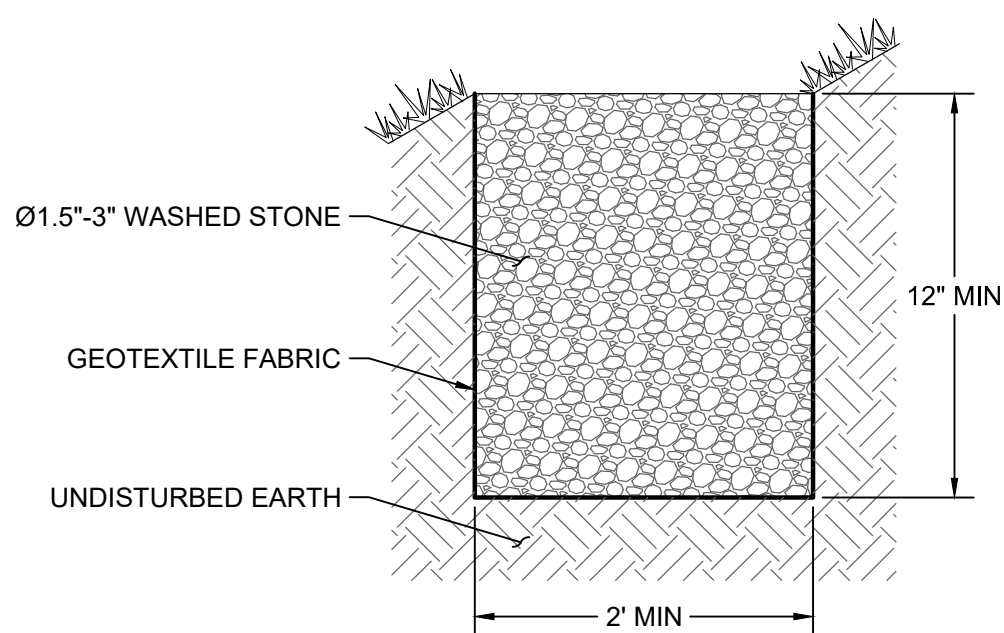
NOTE(S):

1. THE LONGITUDINAL SLOPE OF THE CHANNEL BOTTOM SHOULD BE AS FLAT AS POSSIBLE AND NO GREATER THAN 10%.
2. CHANNEL PORTIONS WITH A LONGITUDINAL SLOPE GREATER THAN 5% TO BE LINED WITH EROSION CONTROL BLANKETS OR EQUIVALENT EROSION CONTROL MEASURE AS APPROVED BY THE ENGINEER.

GRASSED CONVEYANCE CHANNEL

NOT TO SCALE

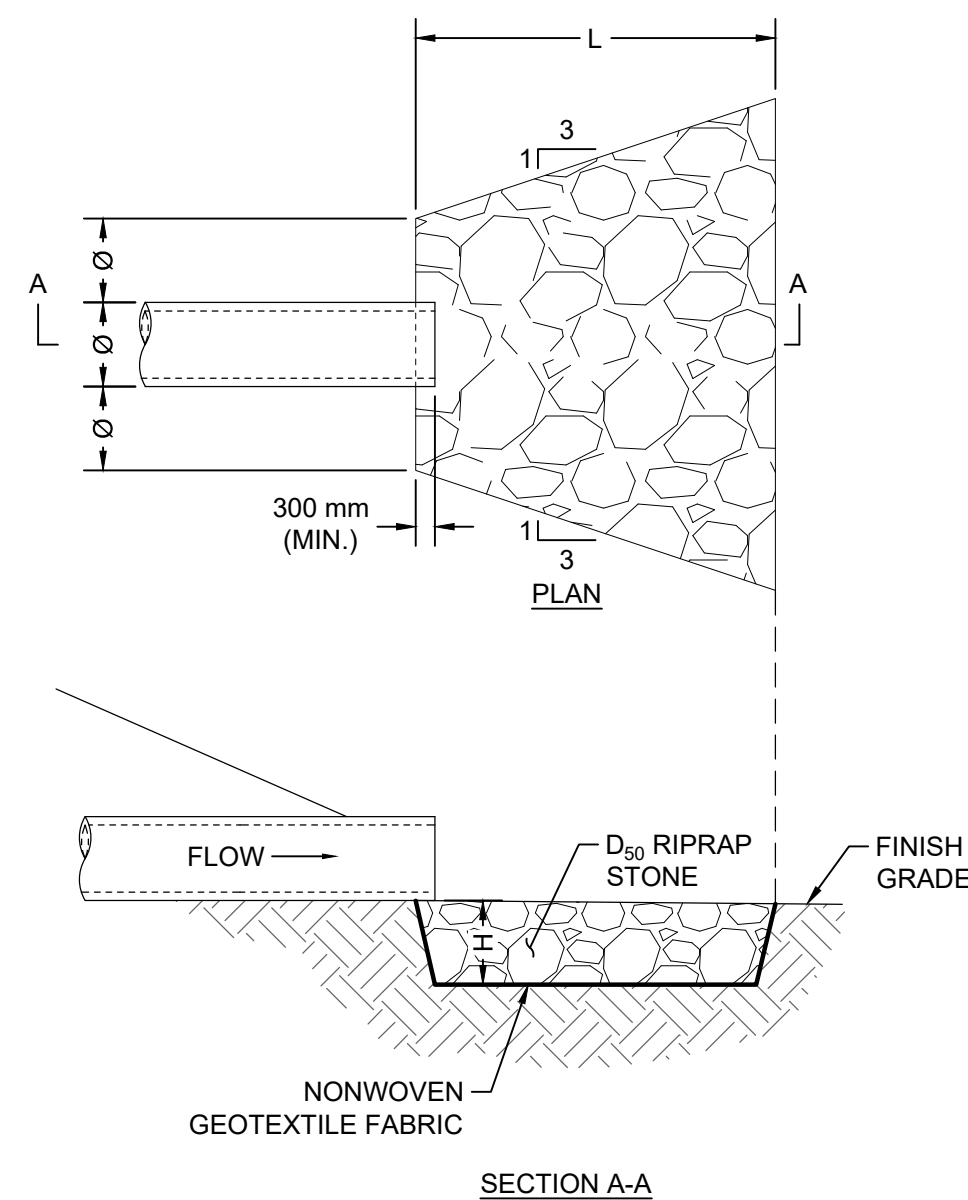
15



ENERGY DISSIPATOR TRENCH

NOT TO SCALE

16



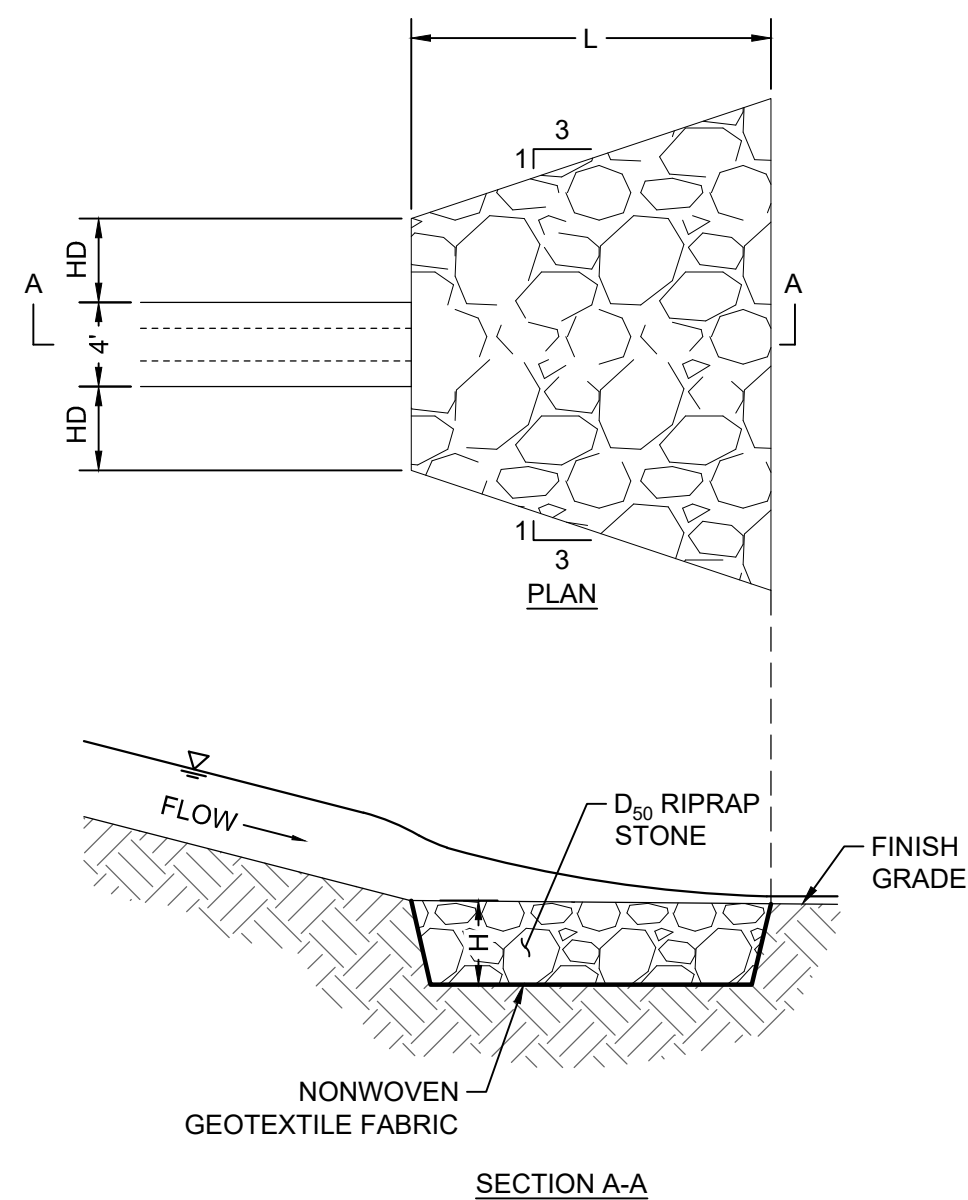
SECTION A-A

RIPRAP APRON DIMENSIONS				
PIPE Ø	CLASS	D ₅₀ (IN)	LENGTH L (FT)	HEIGHT H (IN)
12"	1	5	4	18
15"	1	5	5	18

RIPRAP APRON (PIPE)

NOT TO SCALE

17



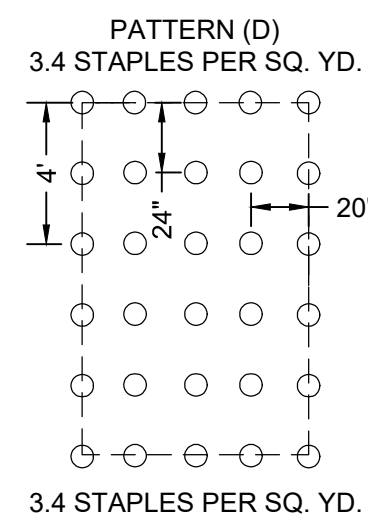
SECTION A-A

RIPRAP APRON DIMENSIONS				
HYDRAULIC DIAMETER (HD)	CLASS	D ₅₀ (IN)	LENGTH L (FT)	HEIGHT H (IN)
1.5'	4	14	9	31

RIPRAP APRON (CHANNEL)

NOT TO SCALE

18



STAPLE PATTERN GUIDE
6.67' WIDE ROLLS

NOTE(S):

1. THIS DETAIL REFERENCES PRODUCTS BY NORTH AMERICAN GREEN. EQUIVALENT PRODUCTS MAY BE USED AS APPROVED BY THE ENGINEER. EROSION CONTROL BLANKETS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
2. EROSION CONTROL MATTING TO BE NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL. INSTALL USING STAPLE PATTERN D.
3. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED (SEE DRAWING G-001).
4. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECPs BACK OVER SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPs.
5. ROLL THE RECPs DOWN THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
6. THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH AN APPROXIMATE 3" OVERLAP.
7. CONSECUTIVE RECPs SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPs WIDTH.
8. STAPLES LONGER THAN 6 INCHES SHALL NOT BE USED WITHIN THE LIMIT OF WASTE TO AVOID PENETRATION INTO THE LANDFILL CAP.

EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

19

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED	APPROVED
7	08/05/2026	REVISED PER STORMWATER DESIGN UPDATES	MRB	OAC
6	07/07/2026	REVISED PER STORMWATER DESIGN UPDATES	MRB	OAC
5	06/15/2026	REVISED PER GEOTECHNICAL FINDINGS	MRB	OAC
4	02/18/2026	RESPONSE TO COMMENTS	MRB	OAC
3	02/03/2026	RESPONSE TO COMMENTS	MRB	OAC
2	01/05/2026	RESPONSE TO COMMENTS	MRB	OAC
1	10/21/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB	OAC

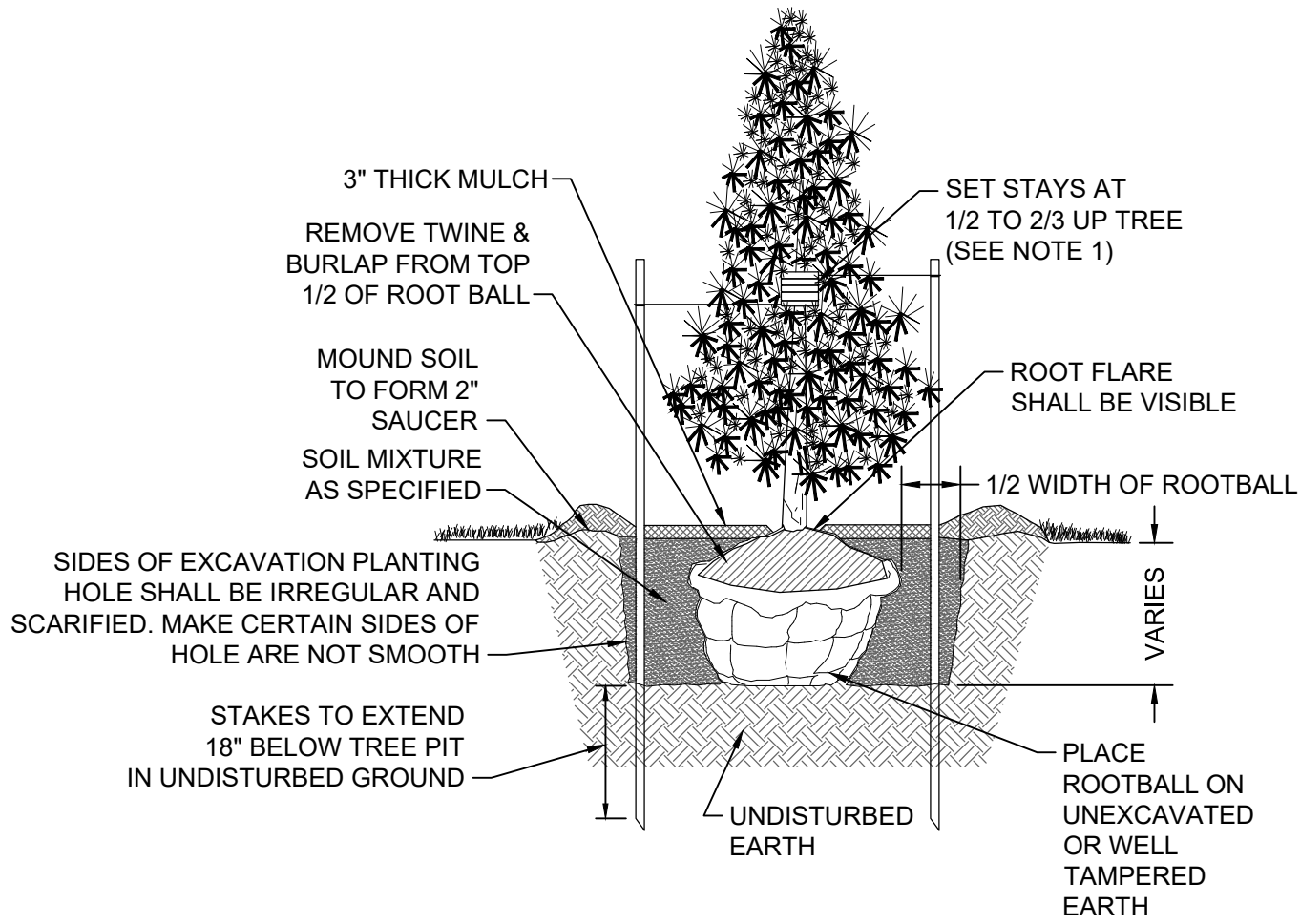
PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT
190 RIDGE ROAD
WORTHINGTON, MA 01098
TITLE:

DETAILS (SHEET 2 OF 3)

CLIENT: BWC WADES
STREAM, LLC

SEAL:

DESIGNED BY: OAC	DRAWN BY: MRB
CHECKED BY: APV	SCALE: AS SHOWN
PROJECT NUMBER: US-EI-365230438	
DRAWING NUMBER: C-502	
SHEET NUMBER: 10 OF 11	

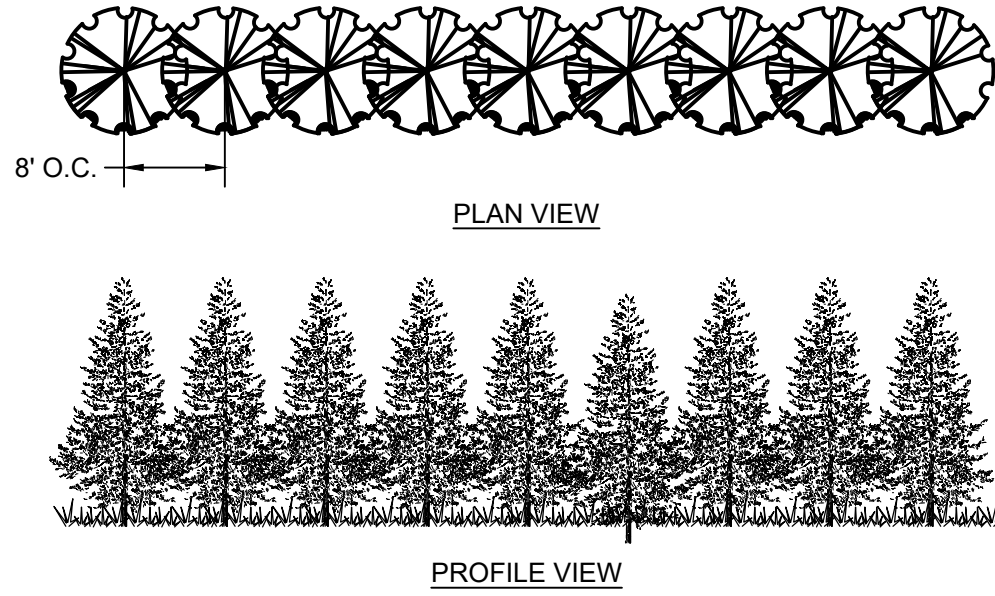


NOTE(S):

1. STAKE ALL TREES OVER 6 FEET TALL.
2. TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE (OR SLIGHTLY ABOVE).
3. NEVER CUT LEADERS.
4. PRUNE ONLY TO REMOVE DAMAGED OR BROKEN BRANCHES.
5. REMOVE ALL WIRE BRACKETS FROM ROOTBALL.
6. REMOVE ALL STAKES 1 YEAR AFTER PLANTING.

VEGETATIVE SCREENING PLANTING
NOT TO SCALE

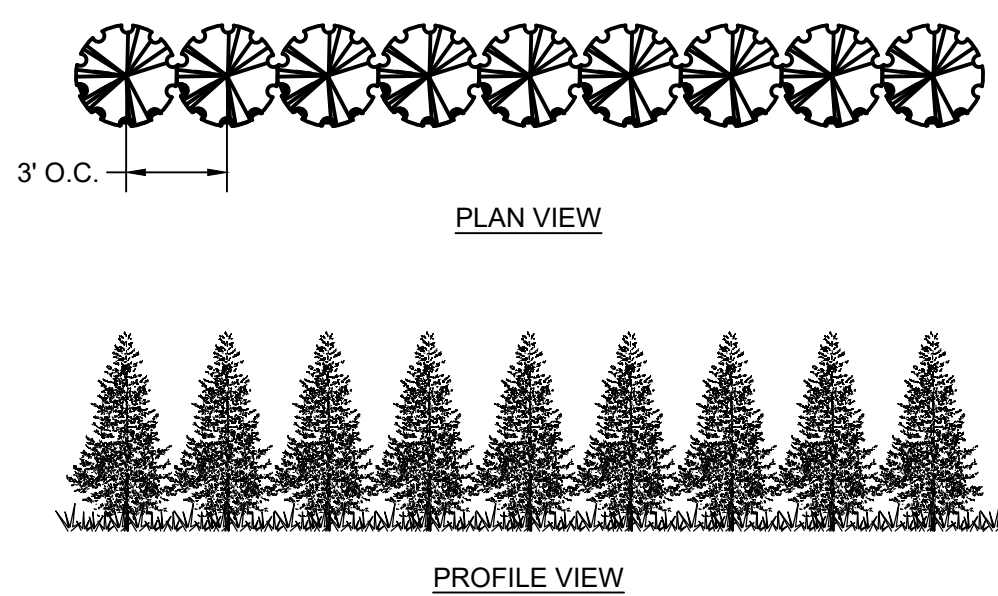
20



SPECIES	COMMON NAME	HEIGHT WHEN PLANTED	MATURE HEIGHT	MATURE WIDTH	ROOT
THUJA PLICATA X STANDISHII 'GREEN GIANT'	GREEN GIANT ARBORVITAE	6'-7'	30'-50'	10'-15'	BALLED & BURLAPED (B&B)

VEGETATIVE SCREENING PLANTING PLAN - NORTHERN PLANTING
NOT TO SCALE

21



SPECIES	COMMON NAME	HEIGHT WHEN PLANTED	MATURE HEIGHT	MATURE WIDTH	ROOT
THUJA X PLICATA 'JUNIOR GIANT'	JUNIOR GIANT ARBORVITAE	6'-7'	15'-20'	3'-5'	BALLED & BURLAPED (B&B)

VEGETATIVE SCREENING PLANTING PLAN - SOUTHERN PLANTING
NOT TO SCALE

22

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED	APPROVED
7	08/05/2026	REVISED PER STORMWATER DESIGN UPDATES	MRB	OAC
6	07/07/2026	REVISED PER STORMWATER DESIGN UPDATES	MRB	OAC
5	06/19/2026	REVISED PER GEOTECHNICAL FINDINGS	MRB	OAC
4	02/18/2026	RESPONSE TO COMMENTS	MRB	OAC
3	02/03/2026	RESPONSE TO COMMENTS	MRB	OAC
2	01/05/2026	RESPONSE TO COMMENTS	MRB	OAC
1	10/27/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB	OAC

PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT 190 RIDGE ROAD WORTHINGTON, MA 01098	TITLE: DETAILS (SHEET 3 OF 3)
--	----------------------------------

CLIENT: BWC WADES STREAM, LLC



DESIGNED BY: OAC	DRAWN BY: MRB
CHECKED BY: APV	SCALE: AS SHOWN
PROJECT NUMBER: US-EI-365230438	DRAWING NUMBER: C-503
SHEET NUMBER: 11 OF 11	

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION

BLUEWAVE

Appendix B: Proposed Draft Conditions

BWC Wades Stream, LLC Proposed Conditions

Definitions

“Commercial Operation Date” means the date that (a) completion of the construction and successful testing of the facility has occurred, (b) the facility has obtained final approval for interconnected operation by the Utility, (c) the facility has been interconnected to the utility electric grid, and (d) sale of energy on a commercial basis has commenced.

Proposed Conditions

1. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector and the Board with the specification sheet of the selected (a) Battery Energy Storage System, (b) inverter, (c) Single Axis Tracker, (d) racking, and (e) transformer with bio-based fuel.
2. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with (a) the dimensional information of the Battery Energy Storage System, (b) the specification sheet of the climate control system within the Battery Energy Storage System, if any, (c) documentation of the Battery Energy Storage System’s compliance with 527 CMR 12.00 (Electrical Code), 527 CMR 1.00 (Fire Code), NFPA 855, and applicable UL listings, and (d) Safety Data Sheets associated with the Battery Energy Storage System.
3. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with a final, equipment-specific pre-construction baseline noise study. Within 6 months following the Commercial Operation Date, the Applicant shall provide the Building Inspector with a post-construction noise study, verifying compliance with 310 CMR 7.10.
4. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with documentation of (a) all requests for comments on this project made by the Applicant to the Worthington Fire-Rescue Department, (b) any responses received from the Worthington Fire-Rescue Department, and (c) a summary of actions taken by the Applicant in response to concerns or requirements identified by the Worthington Fire-Rescue Department.
5. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with the name of the proposed Engineering, Procurement, and Construction (“EPC”) contractor. Should the EPC contractor change prior the Commercial Operation Date, the Applicant shall inform the Building Inspector either prior to or within thirty days after such change having occurred.
6. The Building Inspector is authorized to approve modifications to the plans and application materials approved under this Special Permit that do not alter the intent

or impacts of the approved project. Any significant changes in equipment selection or the addition of more than three additional interconnection poles, shall be remanded to the Planning Board for review and approval

7. Prior to or with its application for the Building Permit, the Applicant shall submit to the Building Inspector a construction reporting plan establishing the frequency, format, and content of periodic construction progress reports to be provided throughout the construction period.
8. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with a Structural Engineer's report on racking, including design loads and calculations.
9. Prior to or with its application for the Building Permit, the Applicant shall provide the Building Inspector with the Phase II or borings Geotechnical Report.
10. At minimum 90 days prior to or with its application for the Building Permit, the Applicant shall provide the Worthington Fire-Rescue Department Chief with (a) NFPA 855 compliance documentation, and (b) applicable BESS UL listings.
11. At minimum 45 days prior to or with its application for the Building Permit, the Applicant shall provide the Worthington Fire-Rescue Department Chief with (a) fire alarm and notification systems configuration, (b) a draft final Emergency Response Plan addressing solar technology, and (c) a draft final Hazard Mitigation Analysis.
12. Prior to the Commercial Operation Date, the Applicant shall offer emergency response training based on the finalized Emergency Response Plan to the Worthington Fire-Rescue Department. Following the initial training, the Applicant shall offer annual refresher emergency response training to the Worthington Fire-Rescue Department.
13. Prior to the Commercial Operation Date, the Applicant shall contribute \$7,500 to the Worthington Fire-Rescue Department to procure detection equipment, such as combustible gas detectors, toxic gas detectors, multi-gas meters, or thermal imaging cameras if the Worthington Fire-Rescue Department states in writing to the Applicant within 45 days after receiving the finalized Emergency Response Plan that its existing equipment is insufficient.
14. Prior to the Commercial Operation Date, the Applicant shall procure and install three 20-pound Class B and three 20-pound Class C fire extinguishers on site.
15. Prior to the Commercial Operation Date, the Applicant shall install vegetative screening on the southern portion of the parcel along Ridge Road, as depicted in the Site Plan. For three years following the date of installation of the vegetative screening, the Applicant shall maintain an annually renewing irrevocable tree performance bond with the Town of Worthington as the named bondholder in the amount of \$20,000 for the purpose of warranting this screening.

16. Prior to the Commercial Operation Date, the Applicant shall provide a form of surety of removal of the Project not to exceed more than 125 percent of the cost of removal, pursuant to Worthington Protective Zoning Bylaw Section 8.5.6(E)(3).
17. Following the Commercial Operation Date, the Applicant shall provide the Board with copies of annual reports filed with MDAR and DOER in compliance with SMART Program qualifications.
18. Following the Commercial Operation Date, the Applicant shall limit storage of debris on site. Any waste generated shall not be stored on site for more than 30 days.
19. Following the Commercial Operation Date, the Applicant shall provide a report to the Board of Health via email every six months identifying whether any health or environmental complaints have been filed with the Applicant during the preceding six month period, and the status of the same.
20. Following the Commercial Operation Date, the Applicant shall provide an annual inspection report to the Board of Health via email.
21. Should the ownership of the equipment, project, or BWC Wades Stream, LLC change during the lifetime of the project, the Applicant shall provide the Board with 30 days' written notice.
22. In the event of any sale or lease of the parcel, the Applicant shall provide the subsequent purchaser or lessee with a copy of the current agricultural plan, decommissioning requirements, and surety provisions, and shall provide evidence to the Board of having provided such materials.
23. Prior to decommissioning the project, the Applicant shall provide the Board with a list of licensed recycling or disposal facilities anticipated to be used during the decommissioning process.

BLUEWAVE

Appendix C: Updated Acoustic Analysis

July 30, 2026

Ms. Brie Fortmuller
BlueWave Energy
116 Huntingdon Avenue, Suite 601
Boston, MA 02116

SUBJECT: Acoustic Analysis - Proposed Solar Facility (revision 2)
Ridge Road, Worthington, MA

Dear Ms. Fortmuller,

Cavanaugh Tocci Associates has evaluated the environmental sound impact associated with the proposed 2 MWAC solar installation located at 190 Ridge Road in Worthington, Massachusetts. The objectives of this evaluation were:

- To define acoustic design goals based on applicable noise regulations, and the results of a baseline sound survey.
- To estimate and evaluate the acoustic impact of the proposed project in the surrounding community.
- To provide sound control concepts as needed to mitigate acoustic impacts.

Results of the evaluation are summarized herein. Appendix A provides a glossary of acoustic terminology used in this report.

Baseline Sound Survey

Sound is a feature of all environments. Sound is only objectionable when it is inconsistent with its environment; by being either too loud or by being distinctive in character (i.e. tonally or temporally varying). The goal of acoustic design is to render facility noise consistent with the level and character of other sounds in the environment. To this end, the following environmental noise analysis evaluates sound produced by the proposed Project in light of existing environmental sound levels.

In order to document typical background sound levels in the project area, we performed continuous sound monitoring at the Project site for a weeklong period (March 11 through March 17, 2026). Figure 1 is an aerial photograph indicating the Project area and the location of the sound monitors SM-1 and SM-2. The results of the survey allow both quantitative and qualitative analyses of the acoustic environment surrounding the Project.

Figures 2 and 3 present the results of the continuous sound monitoring. Due to weather events during the monitoring period, we calculated background sound levels by averaging the sound level during periods of relatively low wind speed and precipitation rate. The calculated levels were 30 dBA during daytime hours (7 AM – 7 PM, when inverters are likely to be active), and 25 dBA during the remaining hours.

Applicable Environmental Noise Regulations

Massachusetts Department of Environmental Protection (MADEP)

Commonwealth of Massachusetts requirements under 310 CMR Section 7.10 qualitatively prohibit noise under some circumstances. Interpretation is provided in the Massachusetts Department of Environmental Quality Engineering's Policy 90-001¹ dated February 1, 1990; and in the Department of Environmental Protection (DEP) Form BWP AQ Sound. The Massachusetts policy limits new noise intrusions to 10 dBA over the existing ambient (L_{90}) sound level. Tonal sound, defined as any octave band level which exceeds the levels in adjacent octave bands by 3 dB or more, is also not allowed. These DEP noise guidelines are applicable both at the property lines and at the nearest inhabited buildings.

The DEP noise policy enumerated above is strictly applied to protect residences, other sensitive receptors (e.g. schools, hospitals), and land that could be developed for acoustically sensitive use. However, a new noise source that would be located in an area that is not likely to be developed for residential use in the future, or in a commercial or industrial area with no sensitive receptors may not be required to mitigate noise impacts on those areas, even if projected to cause noise levels at the facility's property line to exceed existing background sound levels by more than 10 dBA.

Town of Worthington Zoning By-law

The Zoning By-law of the Town of Worthington² specifically regulates large-scale ground-mounted solar photovoltaic installations (LSCMSPI) in section 8.5. Safety and Environmental Standards are presented in 8.5.6. Standard D states "The sound levels under normal operating conditions, measured at the boundary of the lot on which the installation is sited, shall not be more than 10 decibels greater than would otherwise exist in the absence of such a facility." The standard does not provide a metric for establishing existing sound levels. We conservatively use L_{90} in our evaluation, consistent with the above MADEP policy.

Project Acoustic Design Goals

To fully comply with the MADEP noise policy and the Town of Worthington Zoning By-law, sound from the project may not exceed the lowest measured background sound level L_{A90} by 10 dBA, as measured at nearby residential properties or facility property boundaries. In addition, a pure-tone condition may not exist at these locations. Table 1 provides a summary of measured sound levels and resulting project sound level limits.

Table 1
Measured Sound Levels and Limits (dBA)

Sound Monitor	Nominally Lowest L_{A90} (day/night)	MADEP Limit (day/night)
SM-1	30 / 25	40 / 35
SM-2	30 / 25	40 / 35

¹ <https://www.mass.gov/doc/massdep-noise-policy/download>

² <https://worthington-ma.us/wp-content/uploads/2024/08/Worthington-ZBL-5-4-24.pdf>

Project Sound Analysis

Project-related sound impacts that are associated with facility equipment have been calculated using CadnaA environmental sound modeling software (Version 2026 MR1 DataKustic GmbH). The CadnaA sound modeling software uses algorithms and procedures described in International Standard ISO 9613-2:1996 “Acoustics- Attenuation of sound during propagation outdoors – Part 2: General method of calculation”. This standard and its associated methodology are the most universally accepted approach for environmental sound modeling of industrial and transit sound sources. The methodology described in this standard provides estimates of A-weighted sound levels for meteorological conditions that are favorable for the propagation of sound (downwind with a wind speed of 1-5 meters/sec). This methodology is also valid for sound propagation under well-developed moderate ground-based temperature profile inversions, which commonly occur on clear calm nights.

Our analysis includes the following equipment:

- Fourteen Solectria XGI-1500 125 kW inverters, with field measurement data provided by Acentech (daytime operation only).
- Two WEG 2.5 MVA transformers, with sound data provided by the manufacturer.
- Two e-STORAGE SolBank-3 BESS modules, with sound data provided by the manufacturer.
- Ninety FlexRack tracking drives, with sound data provided by the manufacturer.

Equipment layouts have not yet been determined, but all inverters, transformers, and BESS units will be located on the three equipment pads, while tracking drives will be located throughout the photovoltaic array.

Figure 4 presents the results of the acoustic modeling for the proposed Project. Table 2 provides a summary of our estimates of Project A-weighted sound levels at relevant receptors. Daytime sound levels exceed MADEP limits at one of the modeled receivers. For compliance with the applicable regulations, sound mitigation measures are warranted.

TABLE 2
Estimate of Project Sound Levels at Surrounding Properties (dBA)

Location	Description	Facility Sound Level (day/night)	MADEP Limit (day/night)
R1	Landowner Residence	37 / 28	40 / 35
R2	Residence North	33 / 25	40 / 35
R3	Residence East	41 / 30	40 / 35
R4	Residence Southeast	29 / 25	40 / 35
C1	Commercial (clubhouse)	25 / 20	-

Noise Control

Full compliance with the applicable noise regulations will require mitigation. We recommend implementing sound barriers as shown in Figure 5. The barriers on the east side of the central and south inverter banks, with height 2 feet above the top of the inverter units.

Inverter bank configuration has not yet been determined, but the barrier segments should be located on the sides of the inverter bank indicated, and positioned as close to inverters as allowed by equipment clearance requirements. We will provide updated barrier configuration when equipment pad layout is determined.

Modeling results are presented in Table 3 and Figure 6. Facility sound levels are compliant with MADEP limits at all modeled locations. In addition, sound levels are compliant with the Worthington Zoning By-Law at all facility property boundaries.

TABLE 3
Estimate of Project Sound Levels at Surrounding Properties (dBA)
With Noise Controls

Location	Description	Facility Sound Level (day/night)	MADEP Limit (day/night)
R1	Landowner Residence	37 / 28	40 / 35
R2	Residence North	33 / 25	40 / 35
R3	Residence East	39 / 30	40 / 35
R4	Residence Southeast	29 / 25	40 / 35
C1	Commercial (clubhouse)	25 / 20	-

Conclusion

Based on our review of the data presented in Table 3, it is our professional opinion that sound produced by the proposed solar facility on Ridge Road in Worthington, Massachusetts will comply with the most stringent requirements of the state and local noise regulations with implementation of barriers as recommended. Furthermore, with implementation of these measures, sound emitted by the project would not produce a noticeable impact on the acoustic environment and would not have an unreasonable adverse effect at any surrounding properties.

Sincerely,
CAVANAUGH TOCCI



Bradley M. Dunkin, Associate Principal Consultant
25050/BlueWave Solar Ridge Road Worthington MA Sound Study.docx

FIGURES





Aerial Photograph of Project Area Indicating Location of Sound Monitors

Figure 1

Sound Levels Measured North Property Line (SM-1)

Worthington, MA (March 11 - March 17, 2026)

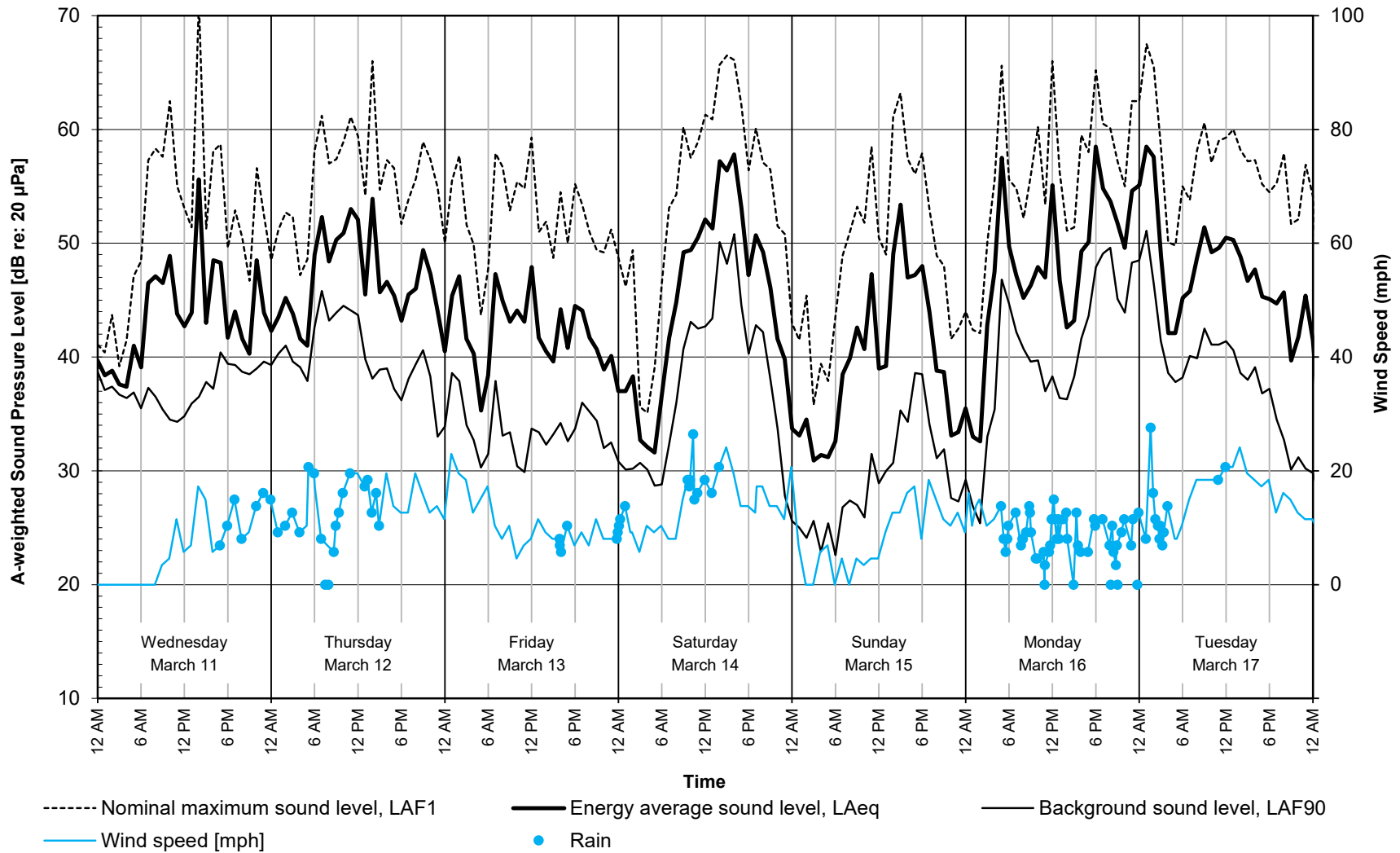


Figure 2

Sound Levels Measured Southeast Property Corner (SM-2)

Worthington, MA (March 11 - March 17, 2026)

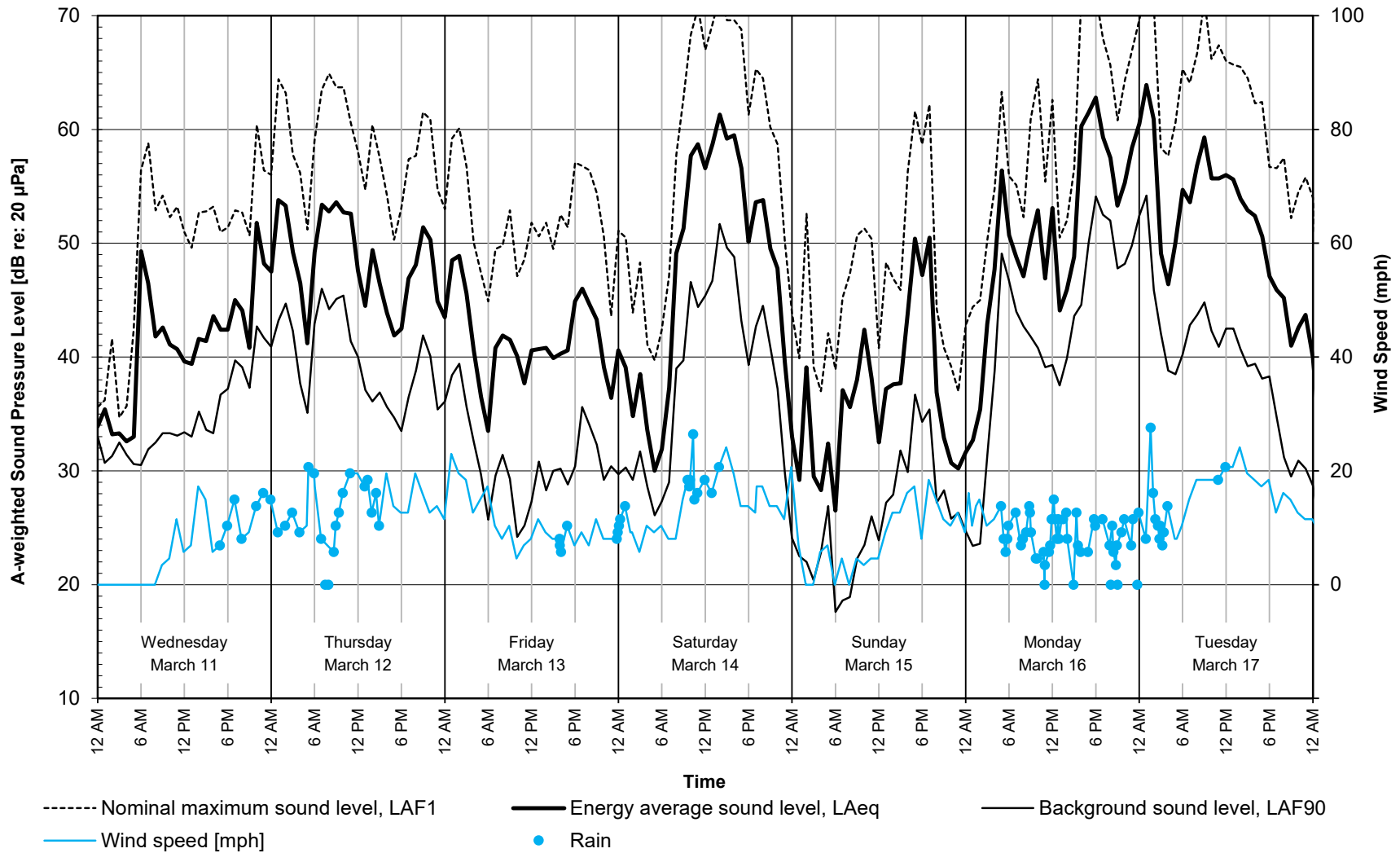
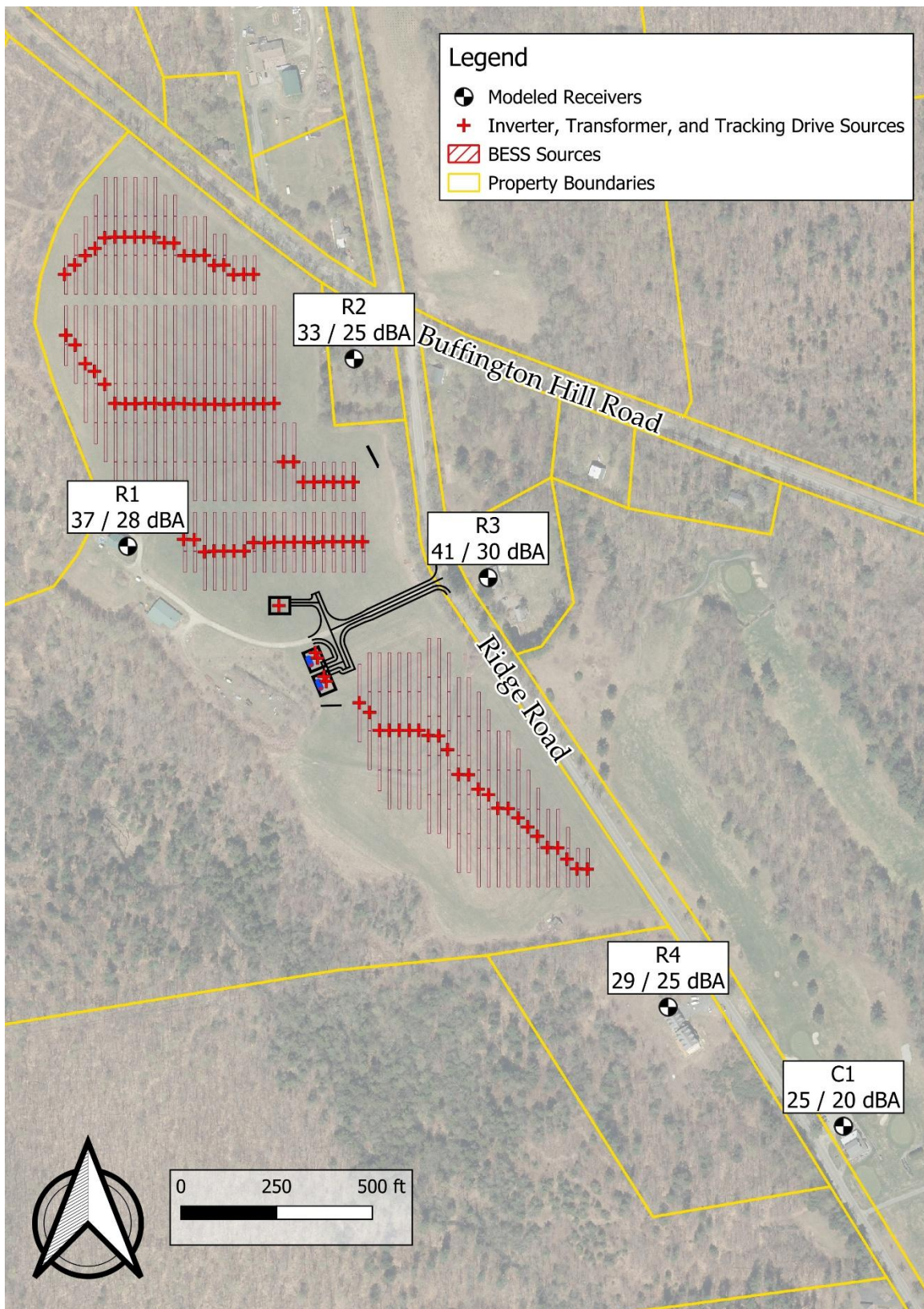
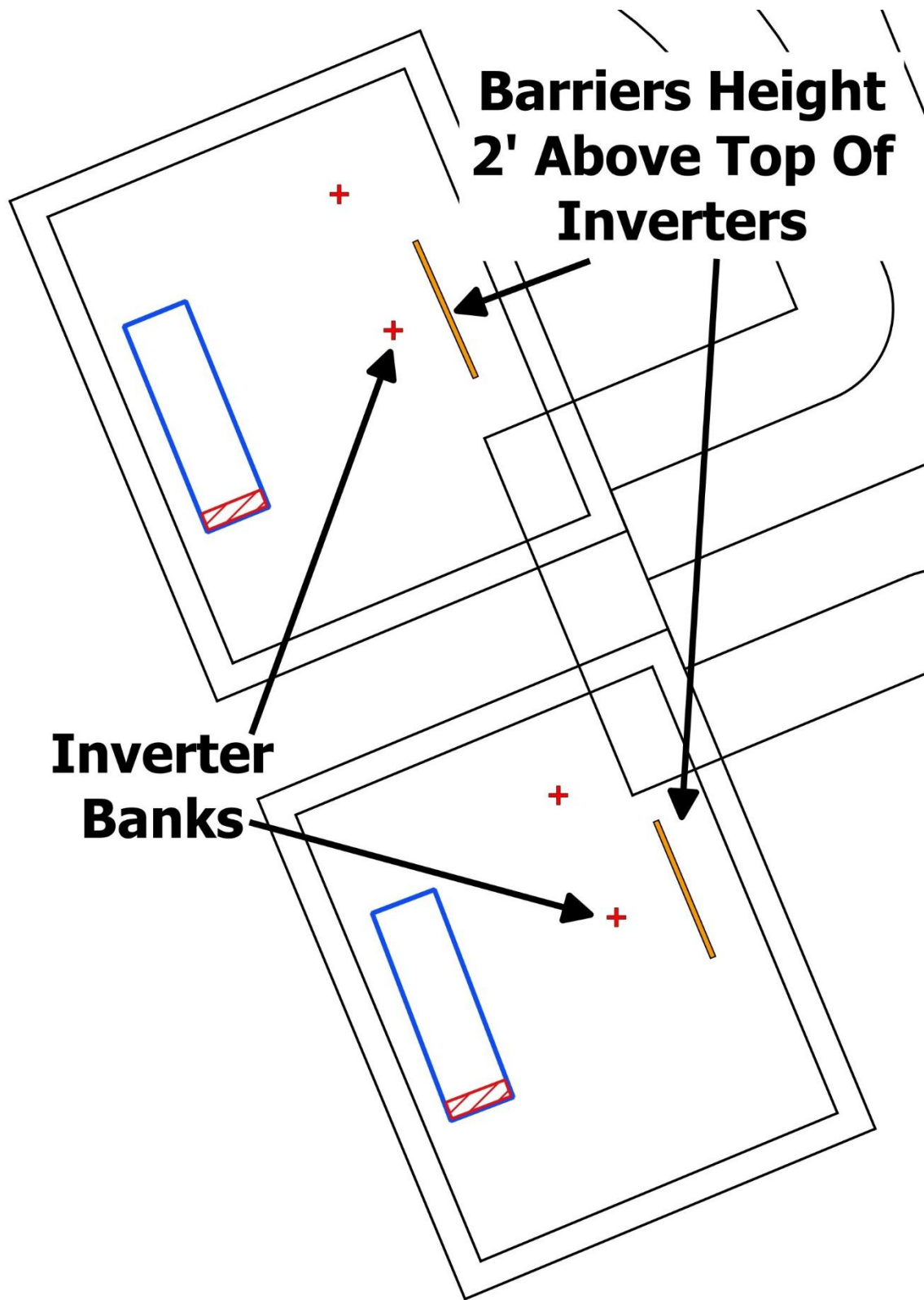


Figure 3



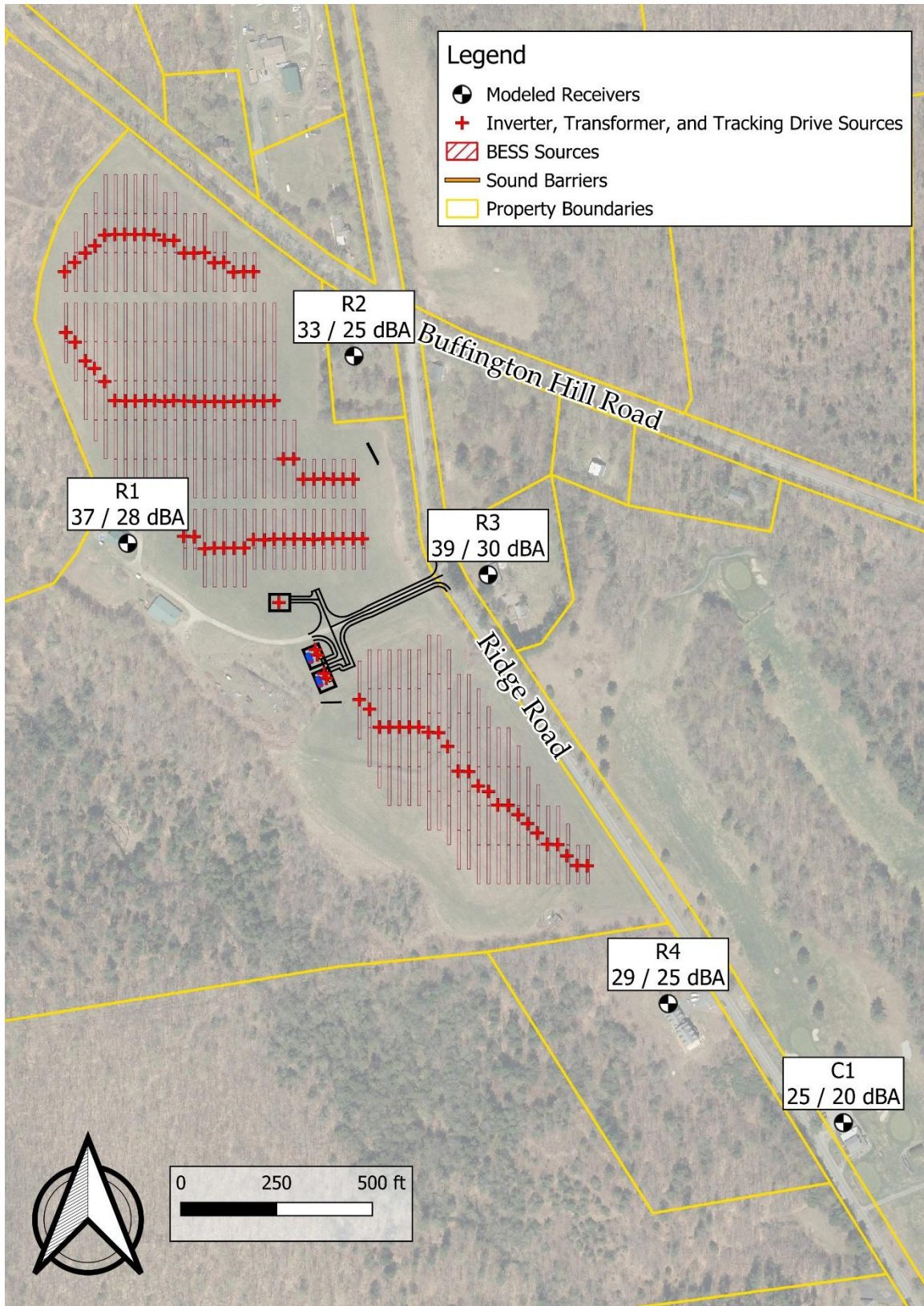
Estimated Sound Levels (day/night) Produced by the Project at Nearest Properties

Figure 4



Recommended Sound Barrier Design

Figure 5



Estimated Sound Levels (day/night) Produced by the Project at Nearest Properties With Sound Barriers

Figure 6



Appendix A

Sound Measurement Terminology

SOUND MEASUREMENT TERMINOLOGY

In order to quantify the amplitude, frequency, and temporal characteristics of sound, various acoustical descriptors are used. The following is an introduction to acoustic terminology that is used in this report.

Sound Level

Sound levels are typically quantified using a logarithmic decibel (dB) scale. The use of a logarithmic scale helps to compress the wide range of human sensitivity to sound amplitude into a scale that ranges from approximately 0 to 180 dB. Note however, that the use of the logarithmic scale prevents simple arithmetic operations when combining the cumulative impact of sources. For example, two sources of equal sound level operated simultaneously results in a combined sound level that is only 3 dB higher than if only one source was operated alone. An important feature of the human perception of continuous sound is that an increase or decrease in sound pressure level by 3 dB or less is barely perceptible, and an increase or decrease by 10 dB is perceived as a doubling or halving of noise level.

A-weighting

Generally, the sensitivity of human hearing is restricted to the frequency range of 20 Hz to 20,000 Hz. However, the human ear is most sensitive to sound in the 500 Hz to 5,000 Hz frequency range. Above and below this range, the ear becomes progressively less sensitive. To account for this feature of human hearing, sound level meters incorporate filtering of acoustic signals that corresponds to the varying sensitivity of the human ear to sound at different frequencies. This filtering is called A-weighting. Sound level measurements that are obtained using this filtering are referred to as A-weighted sound levels and are signified by the identifier, dBA. A-weighted sound levels are widely used for evaluating human exposure to environmental sounds. To help place A-weighted sound levels in perspective, Figure A-1 contains a scale showing typical sound levels for common interior and environmental sound sources.

Spectral Characteristics – Octave and 1/3 Octave Band Sound Levels

To characterize a sound, it is often necessary to evaluate the frequency distribution of the sound energy. As mentioned before, the frequencies of most interest where human exposure is concerned range between 20 Hz and 20,000 Hz. This frequency range is commonly divided into octave bands, where an octave band is a range of frequencies. Each octave band is referred to by its center frequency and has a bandwidth of one octave (a doubling of frequency). To cover the full range of human hearing, it is necessary to measure sound in 10 separate octave bands. Typically, the lowest frequency band measured has a center frequency of 31.5 Hz. The next frequency band has a center frequency of 63 Hz. This geometric series continues to the highest frequency band that has a center frequency of 16,000 Hz. A set of octave band sound levels to describe a particular sound is called an octave band spectrum. Covering the full range of hearing, an octave band spectrum would have 10 values, one for each band. Under certain

Appendix A – 1

circumstances, more frequency resolution in acoustical data is needed to identify the presence of tonal sounds. A 1/3 octave band spectrum uses filters that divide each octave band into 3 separate frequency bands. Note that octave band and 1/3 octave band sound levels are not usually A-weighted, with their units being dB.

Environmental Noise Descriptors

Sound levels in the environment are continuously fluctuating and it is difficult to quantify these time-varying levels with single number descriptors. Statistical approaches, which use *percentile sound levels* and *equivalent sound levels*, are often used to quantify the temporal characteristics of environmental sound.

Percentile sound levels (L_n) are the A-weighted sound levels that are exceeded for specific percentages of time within a noise measurement interval. For example if a measurement interval is one hour long, the 50th percentile sound level (L_{50}) is the A-weighted sound level that is exceeded for 30 minutes of that interval.

- L_{90} is the sound level in dBA exceeded 90 percent of the time during the measurement period. The 90th percentile sound level represents the nominally lowest level reached during the monitoring interval and is typically influenced by sound of relatively low level, but nearly constant duration, such as distant traffic or continuously operating industrial equipment. The L_{90} is often used in standards to quantify the existing background or residual sound level.
- L_{50} is the median sound level: the sound level in dBA exceeded 50 percent of the time during the measurement period.
- L_{10} is the sound level exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles or aircraft.

By using percentile sound levels, it is possible to characterize the sound environment in terms of the steady-state background sound (L_{90}) and occasional transient sound (L_{10}).

The equivalent sound level (L_{eq}) is the energy average of the A weighted sound level for the measurement interval. Sounds of low level and long duration, as well as sounds of high level and short duration influence this sound level descriptor.

Noise levels at night generally produce greater annoyance than do the same levels which occur during the day. It is generally agreed that a given level of environmental noise during the day would appear to be 10 dBA louder at night – at least in terms of potential for causing community concern. The day night average sound level (L_{dn}) is a 24 hour average A-weighted sound level where a 10 dB “penalty” is applied to sound occurring between the hours of

Appendix A – 2

10:00 p.m. and 7:00 a.m. The 10 dB penalty accounts for the heightened sensitivity of a community to noise occurring at night.

When a steady continuous sound is measured, the L_{10} , L_{50} , L_{90} and L_{eq} are all equal. For a constant sound level, such as from a power plant operating continuously for a 24-hour period, the L_{dn} is approximately 6 dBA higher than the directly measured sound level.

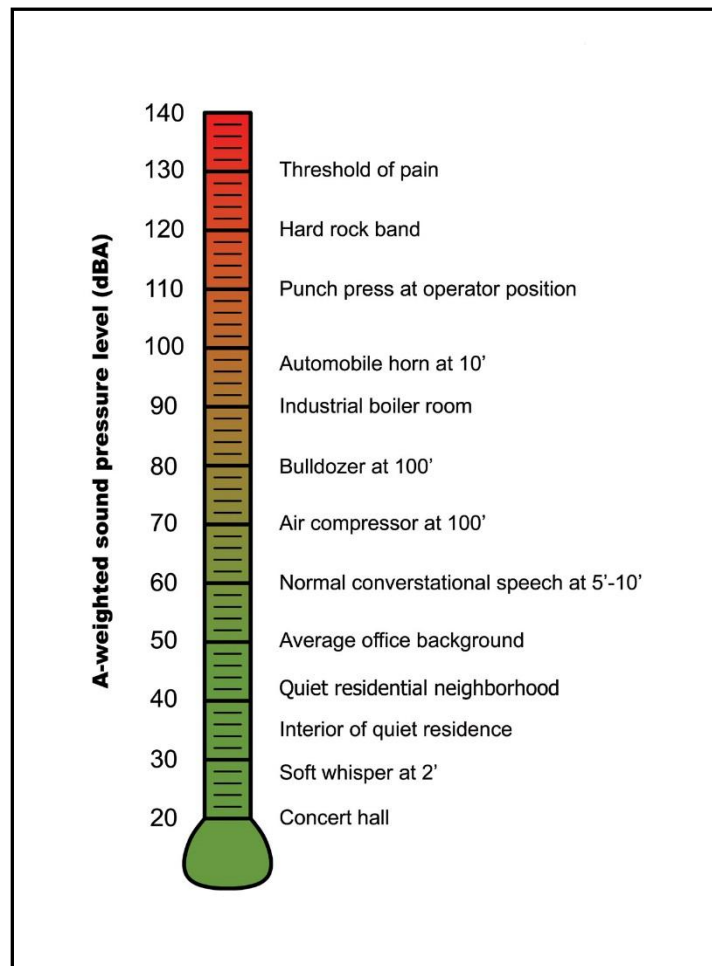


Figure A-1
Typical Sound Levels for Common Interior and Environmental Sources