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# BWC Wades Stream, LLC LSGMSPI

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**To:** Worthington Town Planning Board  
**From:** WSP USA Inc.  
**Cc:** BWC Wades Stream, LLC  
**Ref:** US-EI-3652230438  
**Date:** 2025-10-21  
**Subject:** Response to Comments for Site Plan Review Application for BWC Wades Stream, LLC LSGMSPI

Dear Members of the Planning Board:

On behalf of BWC Wades Stream, LLC, (Applicant), WSP USA Inc. respectfully submits the following responses to the Worthington Town Planning Board's review of the Site Plan Review Application for a proposed Large-Scale Ground Mounted Solar Photovoltaic Installation (LSGMSPI) (the Project) located at 190 Ridge Road, Worthington, Massachusetts in Hampshire County (the Site). The following comments were discussed during a meeting with the Planning Board on October 16<sup>th</sup> and later provided to BlueWave via email.

Information requested by the Planning Board is outlined below with WSP's comments provided in ***bold italics***.

2.6.9 (C) (3): "Location and use of all existing and proposed buildings and structures, including approximate height and floor area"

***The Issued for Permitting (IFP) Plan Set has been updated to show the approximate heights for the existing structures on site, see Sheet V-101 of the updated IFP Plan Set. The updated IFP Plan Set is included as Attachment A.***

2.6.9 (C) (7): "Location and use of buildings and structures within 300 feet of the site"

***The IFP Plan Set has been updated to show all structures within 300 feet of the site, including their use, shown on Sheet V-101. The updated IFP Plan Set is included as Attachment A.***

2.6.9 (C) (21): "Information sufficient to assess the traffic safety impacts of the proposed project on the carrying capacity of any adjacent bridge, highway or road, to include the projected number of motor vehicle trips to enter or depart from the site estimated for daily hour and peak hour traffic levels"

***During construction, the heaviest truck to enter site are typically wheelbase 67 (WB67) trucks at a typical length of 67 feet and maximum weight of 80,000lbs. These are used to deliver equipment approximately 20-35 times, spaced out over the course of a few weeks, 2-3 times per day. Other deliveries are on smaller, straight trucks (typically 10 to 26 feet long), and are typically between***

**10,000-15,000lbs. Following construction, the anticipated traffic will be one pickup truck per quarter throughout the year for regular maintenance and inspections.**

8.5.3 (A) 6 (a) (1) (e): "Documentation of the major system components to be used, including the photovoltaic panels, mounting system, and inverter;"

**Additional documentation including the mounting system and inverters is included as Attachment B.**

2.6.9 (C) (8): "Location of wetlands on site and within 300 feet of the site, according to the latest data from the National Wetlands Inventory"

**The location of all wetlands on site and within 300 feet of the site have been added to sheet V-101 in the attached IFP set. The wetland information added to the plans was generated from the United States Fish & Wildlife Service National Wetlands Inventory Mapper.**

8.5.3 (A) 6 (a) (1) (i): "The delineation of any wetlands on or near the specific portion of the parcel proposed for the LSGMSPI."

**Fleetwood Environmental Solutions, LLC visually inspected approximately 48 acres of the parcel during the field surveys (May 3, June 9, July 12, and August 1, 2023), including the footprint of the proposed solar array development and all other portions of the parcel. The acreage west of Watts Stream was not inspected since no development is proposed in this area. The presence or absence of Resource Areas was determined using both state and federal guidelines. There are no natural resource concerns (wetlands) in the northern portion of the site, including within the Water Supply Protection District. The investigation area is included as Attachment C.**

An updated plan C-103 that shows both equipment pads in their entirety, including any site work (rip rap, etc).

**Sheet C-104 has been added to the IFP set to show the proposed equipment pads in their entirety, including the site work in this area. See Attachment A.**

A hardcopy set of full sized (24x36) plans

**Three (3) copies of the full sized IFP set have been mailed to the Planning Board.**

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**Attachment A**

**Updated Issued for  
Permitting Plan Set**

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PROPRIETARY INFORMATION: THIS DRAWING IS THE PROPERTY OF WSP USA INC. AND IS NOT TO BE LOANED OR REPRODUCED IN ANY WAY WITHOUT THE PERMISSION OF WSP USA INC.

# BWC WADES STREAM, LLC

## 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT

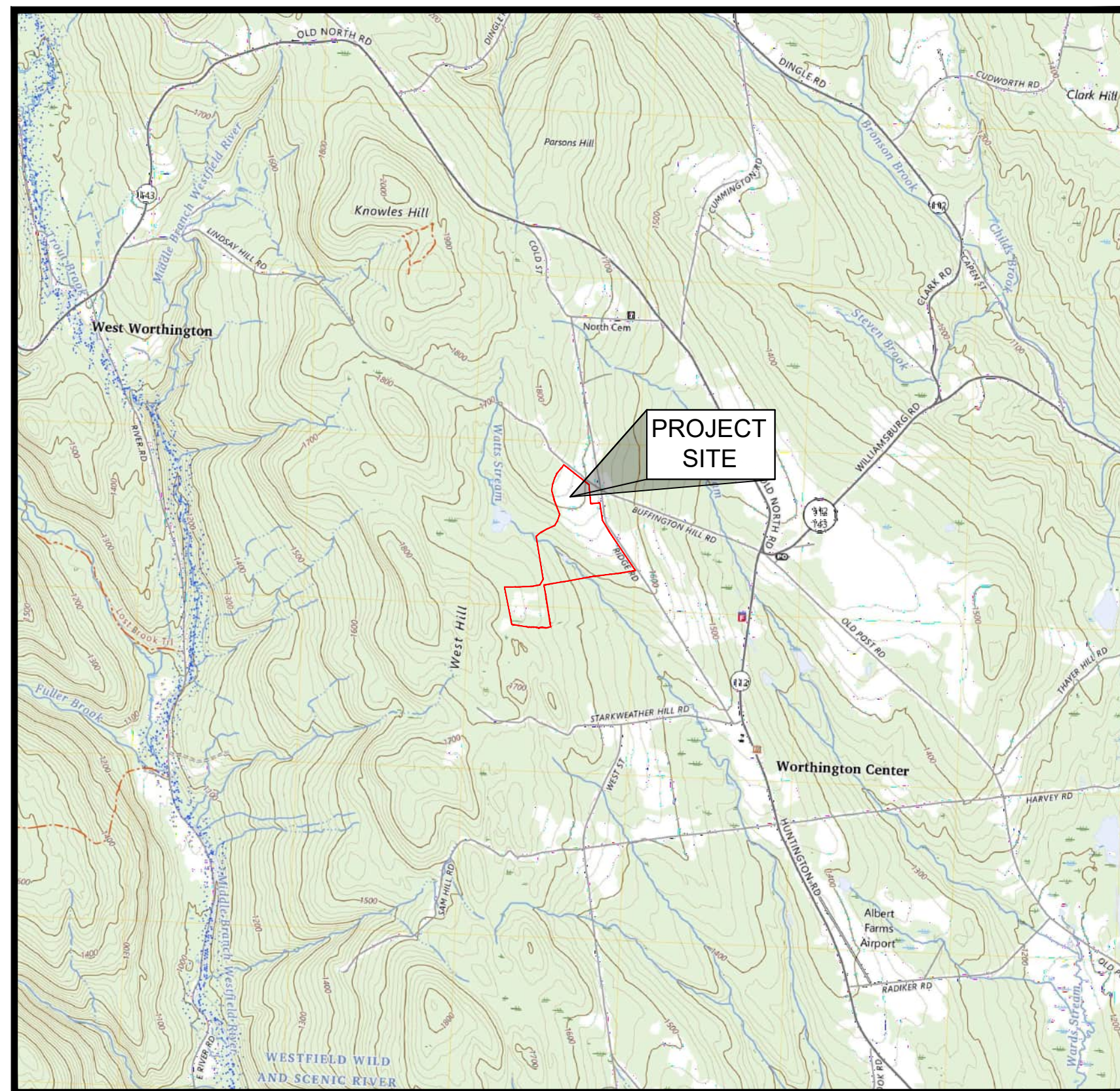
### 190 RIDGE ROAD

### WORTHINGTON, MA 01098

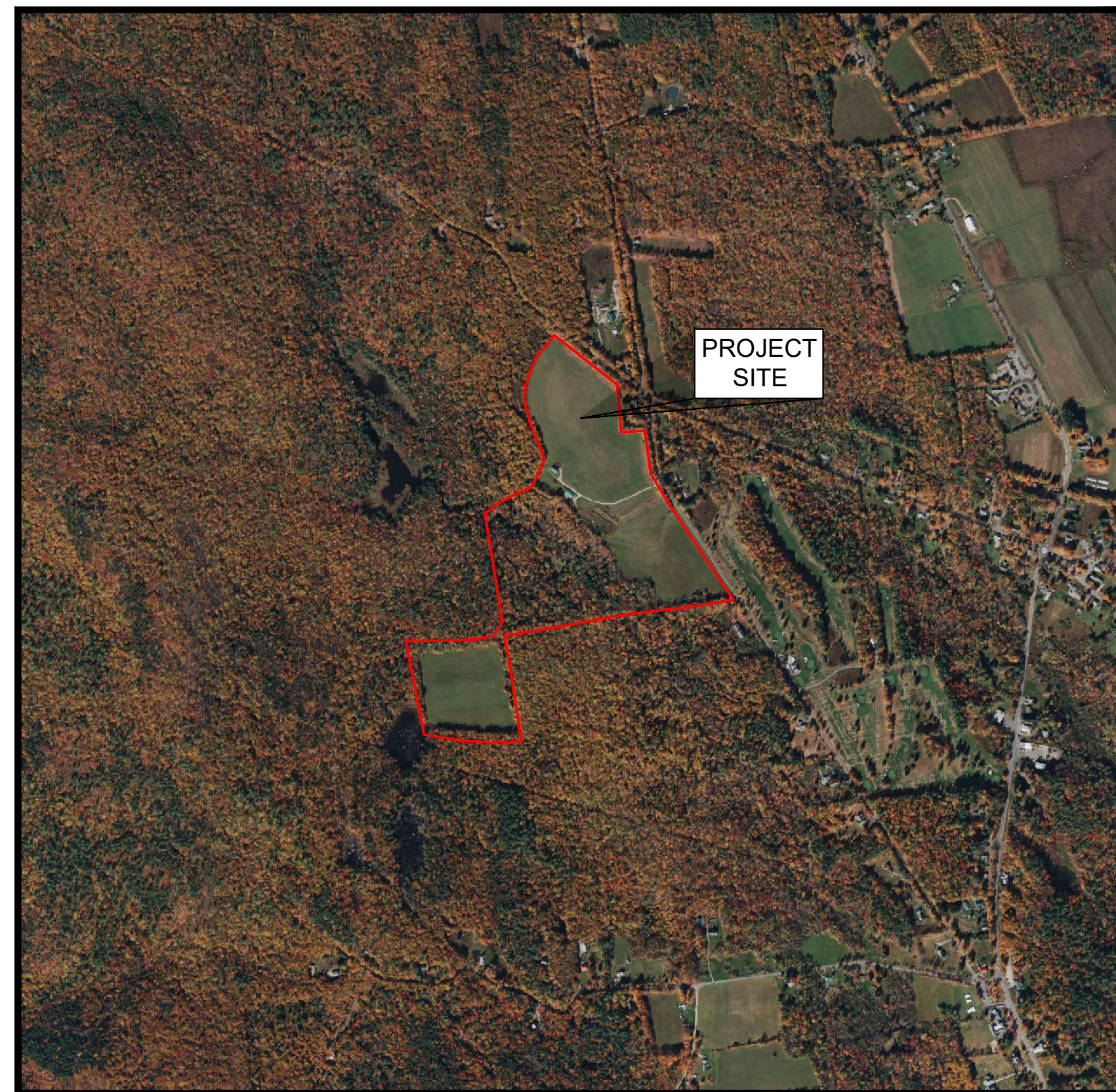
### SEPTEMBER 23, 2025

### LAST REVISED OCTOBER 21, 2025

### ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



LOCUS MAP  
1"=2500'



AERIAL IMAGE  
1"=1000'

#### DRAWING INDEX

SHEET NUMBER	DRAWING TITLE	DRAWING NUMBER
	COVER SHEET	
1	CONSTRUCTION, EROSION AND SEDIMENTATION CONTROL NOTES	G-001
2	EXISTING CONDITIONS	V-101
3	PROPOSED CONDITIONS	C-101
4	GRADING/EARTHWORK PLAN	C-102
5	ACCESS ROAD TOPOGRAPHIC PROFILE ANALYSIS	C-103
6	EQUIPMENT PADS	C-104
7	SHADOW ANALYSIS OF PROPOSED CONDITIONS	C-105
8	DETAILS (SHEET 1 OF 2)	C-501
9	DETAILS (SHEET 2 OF 2)	C-502

PROPERTY OWNER  
**TIMOTHY J. SENA &  
CATHERINE RUDE-SENA**  
PO BOX 132  
WORTHINGTON, MA 01098

PREPARED BY  
**wsp**  
**WSP USA INC.**  
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CHELMSFORD, MASSACHUSETTS 01824  
T +1 978-692-9090  
OLIVIA.CROSBY@WSP.COM

DEVELOPED BY  
**BWC WADES STREAM, LLC**

**B**  
116 HUNTINGTON AVE  
BOSTON, MA 02116  
T +1 617-209-3122  
ASSETMGMT@BLUEWAVE.ENERGY

SITE PLAN REVIEW BY  
**TOWN OF WORTHINGTON  
PLANNING BOARD**  
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WORTHINGTON, MA 01098  
T +1 413-238-5577  
PLANNING@WORTHINGTONMA.US

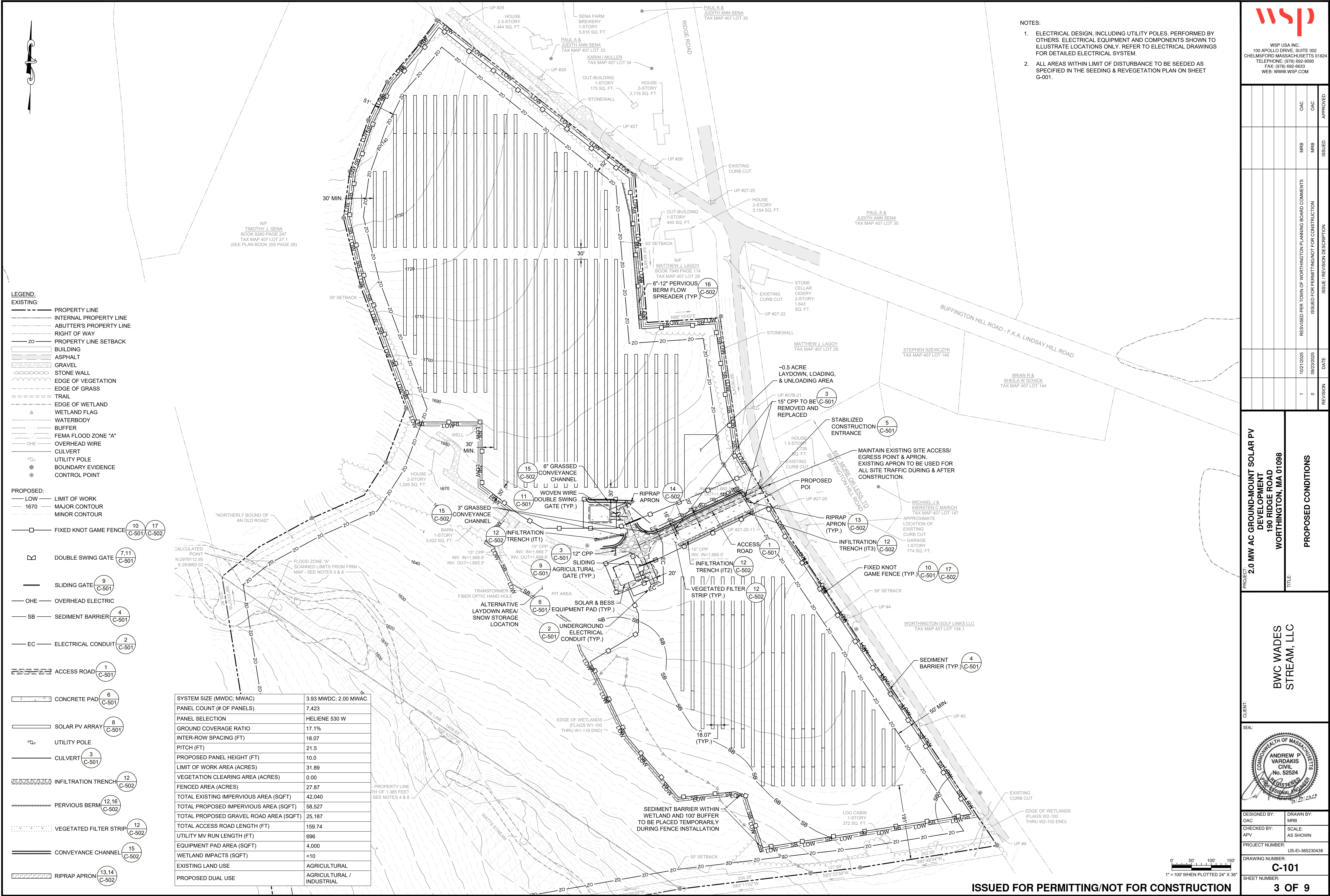




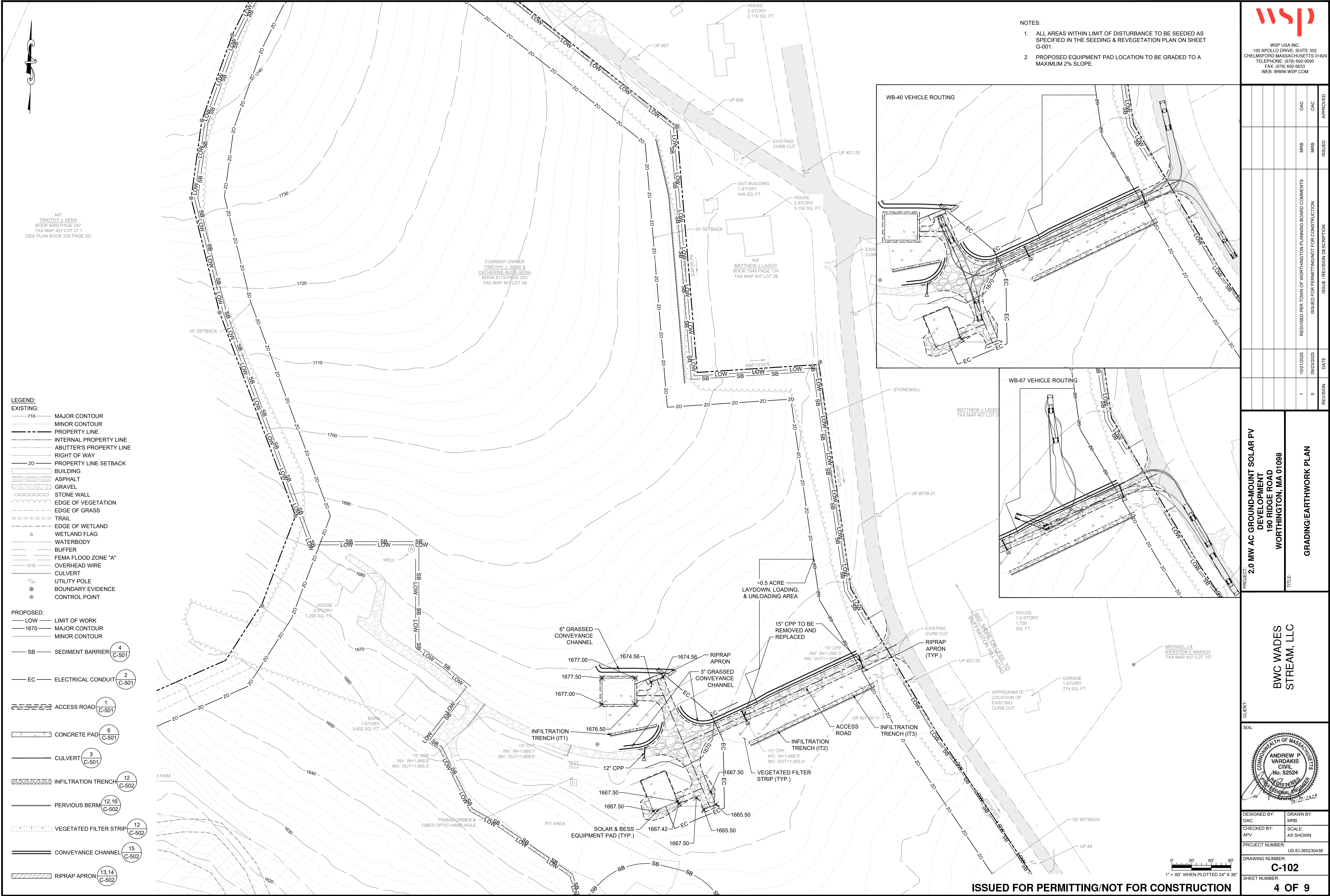






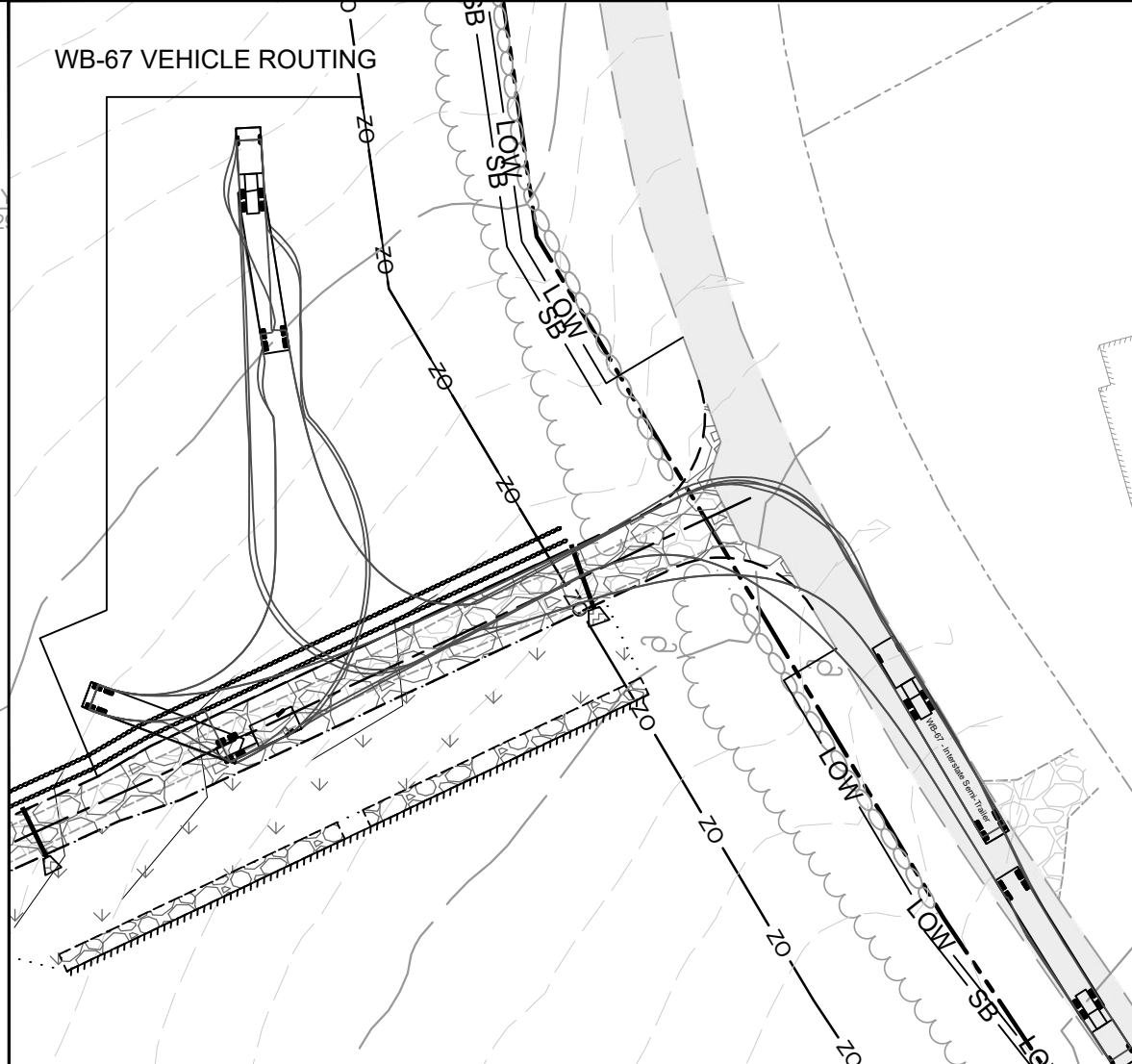
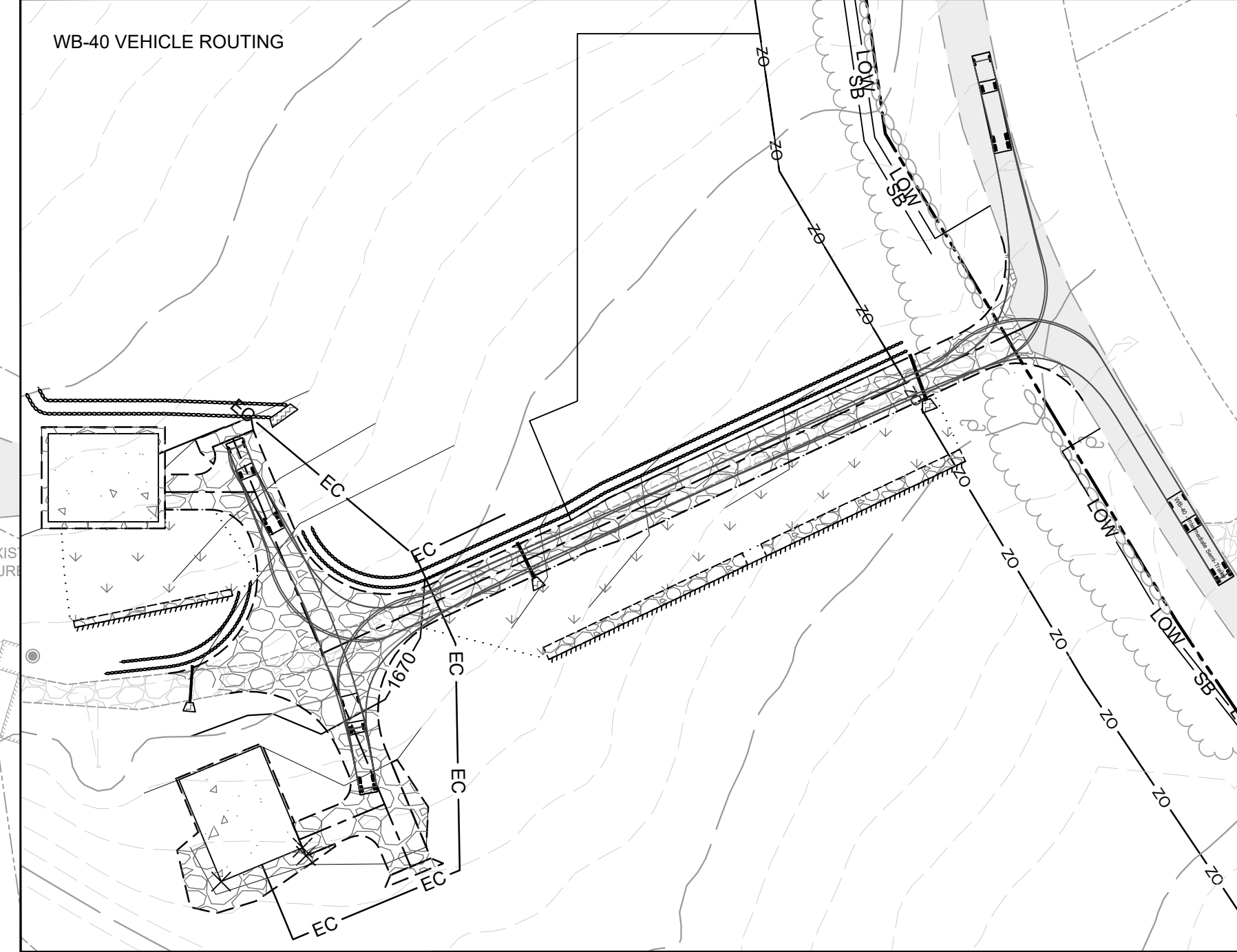






- LEGEND:**
- EXISTING:**
- 710 MAJOR CONTOUR
  - MINOR CONTOUR
  - PROPERTY LINE
  - INTERNAL PROPERTY LINE
  - ABUTTER'S PROPERTY LINE
  - RIGHT OF WAY
  - PROPERTY LINE SETBACK
  - BUILDING
  - ASPHALT
  - GRAVEL
  - STONE WALL
  - EDGE OF VEGETATION
  - EDGE OF GRASS
  - TRAIL
  - EDGE OF WETLAND
  - WETLAND FLAG
  - WATERBODY
  - BUFFER
  - FEMA FLOOD ZONE "A"
  - OVERHEAD WIRE
  - CULVERT
  - UTILITY POLE
  - BOUNDARY EVIDENCE
  - CONTROL POINT
- PROPOSED:**
- LOW LIMIT OF WORK
  - 1670 MAJOR CONTOUR
  - MINOR CONTOUR
  - SB SEDIMENT BARRIER (4 C-501)
  - EC ELECTRICAL CONDUIT (2 C-501)
  - ACCESS ROAD (1 C-501)
  - CONCRETE PAD (6 C-501)
  - CULVERT (3 C-501)
  - INFILTRATION TRENCH (12 C-502)
  - PERVIOUS BERM (12,16 C-502)
  - VEGETATED FILTER STRIP (12 C-502)
  - CONVEYANCE CHANNEL (15 C-502)
  - RIPRAP APRON (13,14 C-502)

- 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.



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100 APOLLO DRIVE, SUITE 302  
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FAX: (978) 692-6633  
WEB: WWW.WSP.COM

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED	OAC	MRB	APPROVED
1	10/21/2025	REVISED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB	OAC		
0	09/23/2025	ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION	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**

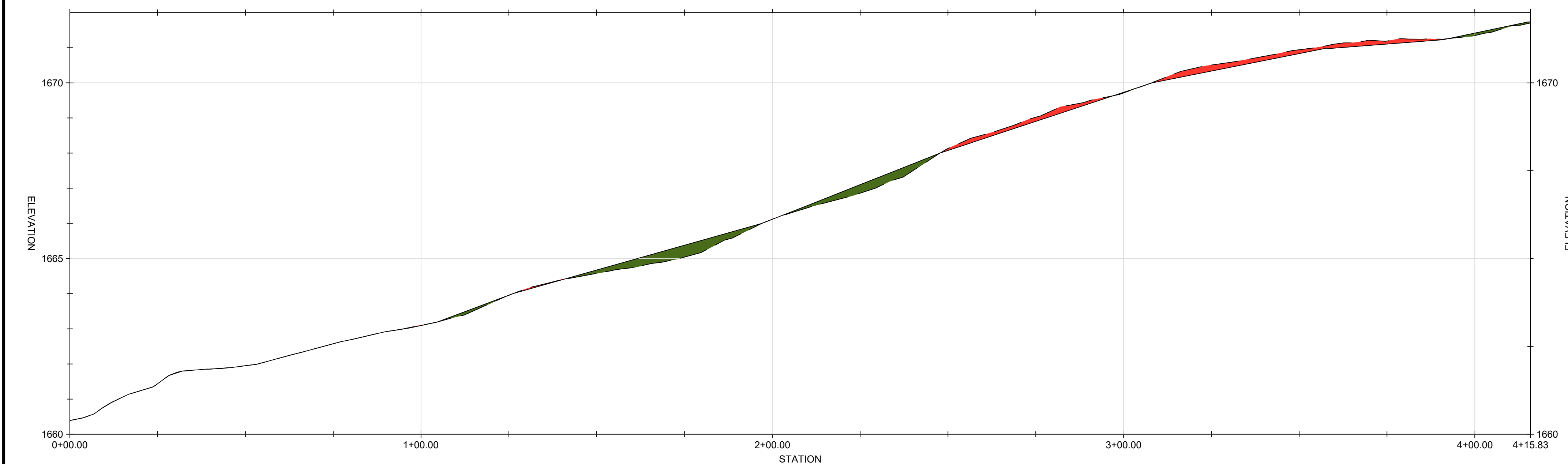
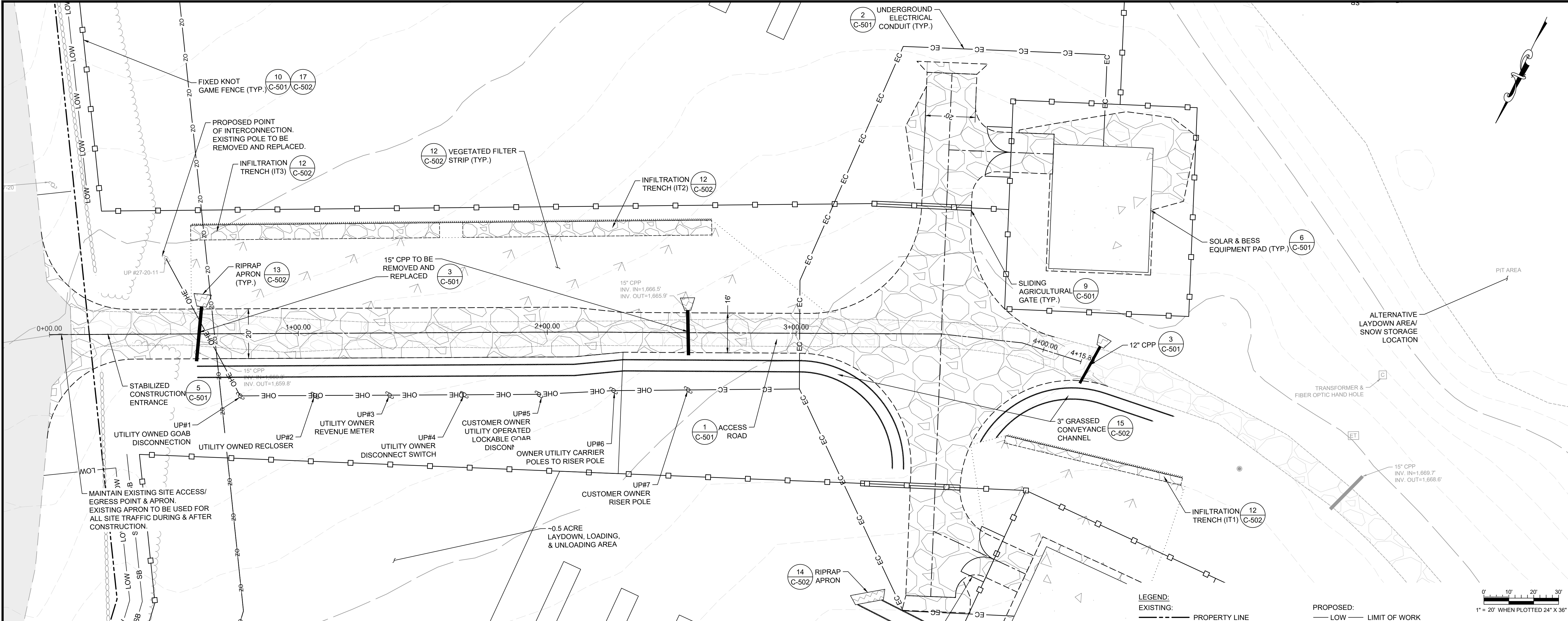
SEAL:

DESIGNED BY: OAC	DRAWN BY: MRB
CHECKED BY: APV	SCALE: AS SHOWN
PROJECT NUMBER: US-EI-365230438	
DRAWING NUMBER: <b>C-102</b>	
SHEET NUMBER: <b>4 OF 9</b>	

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D:\BlueWave\US-EI-365230437 - Ridge Rd Worthington\4 Permitting\Sheets\4 - Ridge Rd - C-102.dwg - C-102 - Oct 21, 2025 2:45pm - wds\_morgan.mcdonald





- LEGEND:**
- EXISTING:**
- PROPERTY LINE
  - INTERNAL PROPERTY LINE
  - ABUTTER'S PROPERTY LINE
  - RIGHT OF WAY
  - PROPERTY LINE SETBACK
  - BUILDING
  - ASPHALT
  - GRAVEL
  - STONE WALL
  - EDGE OF VEGETATION
  - EDGE OF GRASS
  - TRAIL
  - EDGE OF WETLAND
  - WETLAND FLAG
  - WATERBODY
  - BUFFER
  - FEMA FLOOD ZONE "A"
  - OVERHEAD WIRE
  - CULVERT
  - UTILITY POLE
  - BOUNDARY EVIDENCE
  - CONTROL POINT
- PROPOSED:**
- LOW
  - 1670
  - MINOR CONTOUR
  - FIXED KNOT GAME FENCE
  - DOUBLE SWING GATE
  - SLIDING GATE
  - OHE
  - OVERHEAD ELECTRIC
  - SB
  - SEDIMENT BARRIER
  - EC
  - ELECTRICAL CONDUIT
  - ACCESS ROAD
  - CONCRETE PAD
  - SOLAR PV ARRAY
  - UTILITY POLE
  - CULVERT
  - INFILTRATION TRENCH
  - PERVIOUS BERM
  - VEGETATED FILTER STRIP
  - CONVEYANCE CHANNEL
  - RIPRAP APRON

- NOTES:**
- 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.
  - ALL AREAS WITHIN LIMIT OF DISTURBANCE TO BE SEEDDED AS SPECIFIED IN THE SEEDING & REVEGETATION PLAN ON SHEET G-001.
  - THE TOTAL GRADING CUT VOLUME IS 841.92 CUBIC YARDS. THE TOTAL GRADING FILL VOLUME IS 584.76 CUBIC YARDS. THE GRADING OF THE ACCESS ROAD AND EQUIPMENT PAD AREA WILL RESULT IN A NET CUT VOLUME OF 257.16 CUBIC YARDS.

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WEB: WWW.WSP.COM

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION	
REVISION	DATE
1	10/21/2025
0	09/23/2025

PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT

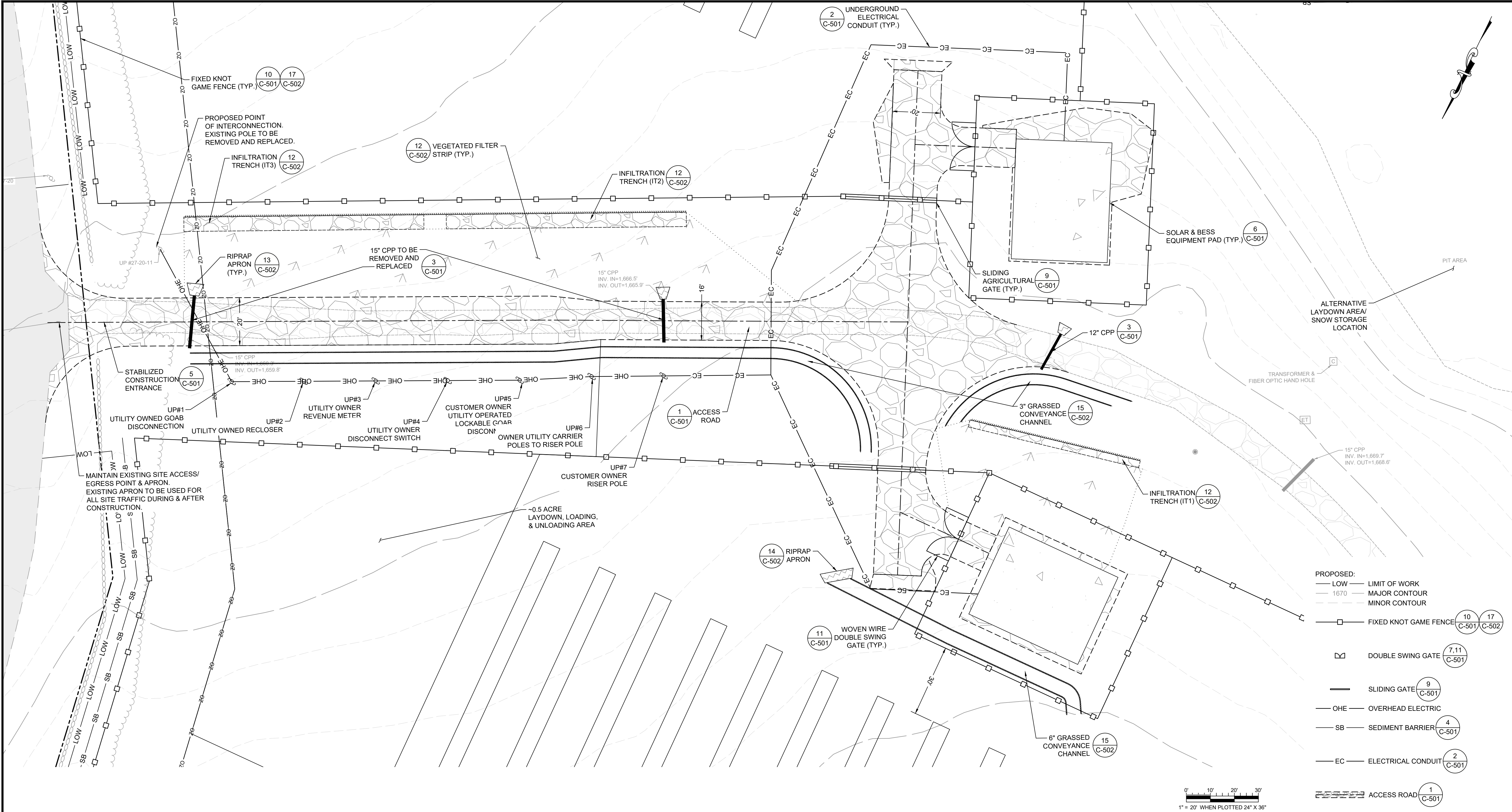
CLIENT: BWC WADES STREAM, LLC

190 RIDGE ROAD  
WORTHINGTON, MA 01098

TITLE: ACCESS ROAD TOPOGRAPHIC PROFILE ANALYSIS

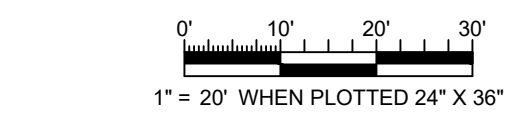
DESIGNED BY: OAC  
CHECKED BY: APV  
PROJECT NUMBER: US-EI-365230438  
DRAWING NUMBER: C-103  
SHEET NUMBER: 5 OF 9





NOTES:

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- LEGEND:**
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  - RIGHT OF WAY
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  - FEMA FLOOD ZONE "A"
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  - CULVERT
  - UTILITY POLE
  - BOUNDARY EVIDENCE
  - CONTROL POINT
- PROPOSED:**
- LOW LIMIT OF WORK
  - 1670 MAJOR CONTOUR
  - MINOR CONTOUR
  - FIXED KNOT GAME FENCE
  - DOUBLE SWING GATE
  - SLIDING GATE
  - OHE OVERHEAD ELECTRIC
  - SB SEDIMENT BARRIER
  - EC ELECTRICAL CONDUIT
  - ACCESS ROAD
  - CONCRETE PAD
  - SOLAR PV ARRAY
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WEB: WWW.WSP.COM

ISSUE / REVISION DESCRIPTION		ISSUED	APPROVED
	RESUBMITTED PER TOWN OF WORTHINGTON PLANNING BOARD COMMENTS	MRB	OAC
	ISSUED FOR PERMITTING NOT FOR CONSTRUCTION	MRB	OAC

REVISION	DATE
1	10/21/2025
0	09/23/2025

PROJECT: 2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT

190 RIDGE ROAD

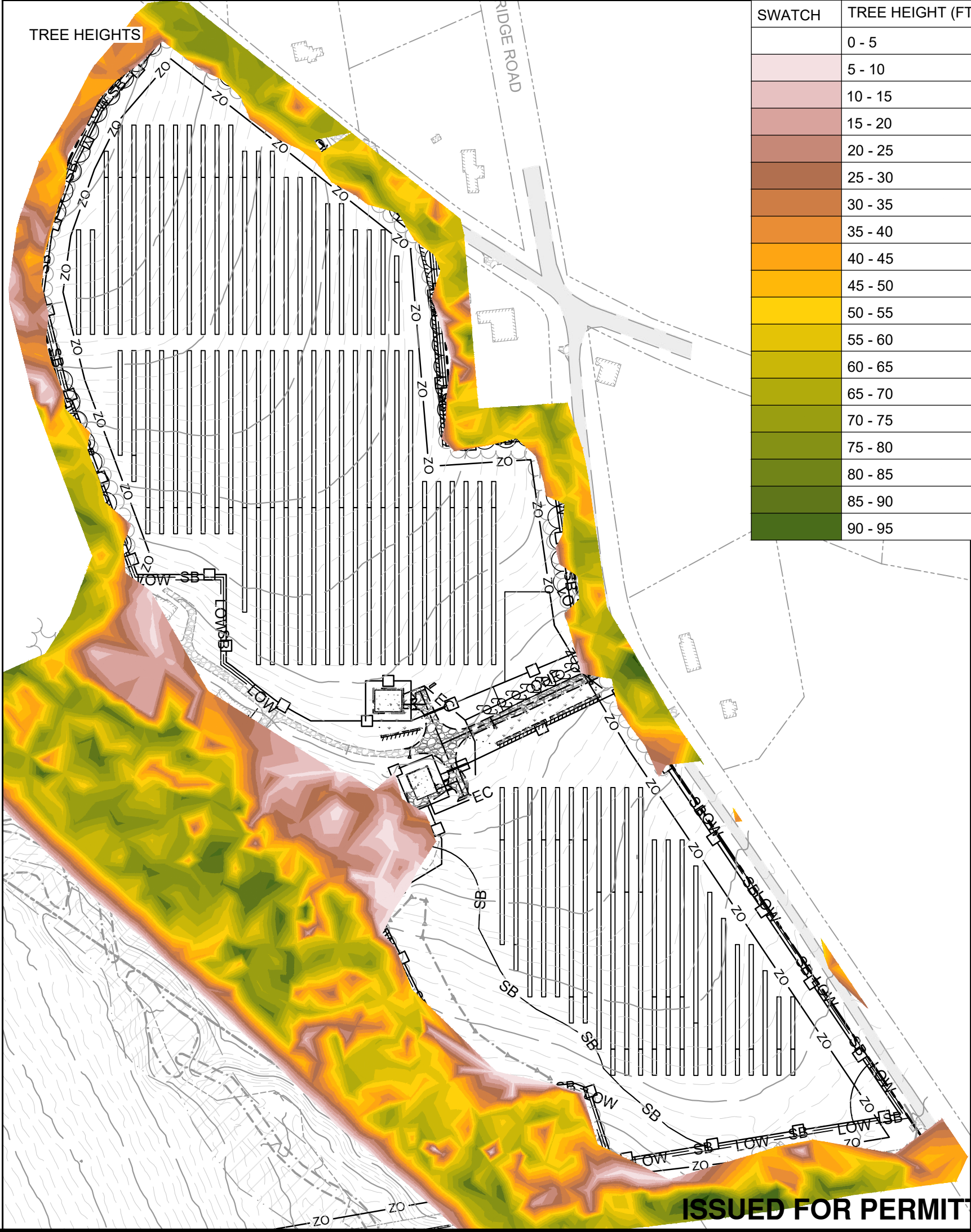
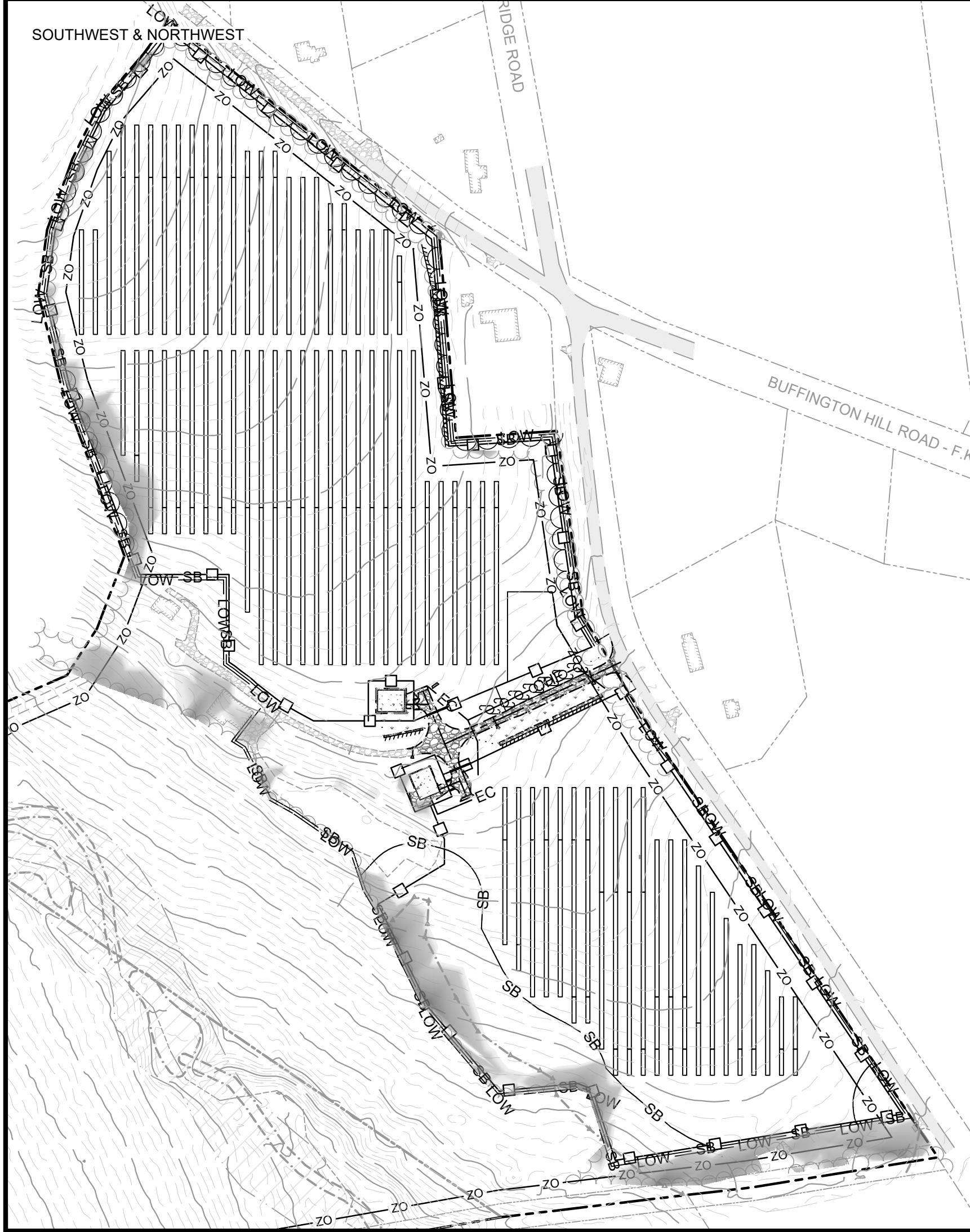
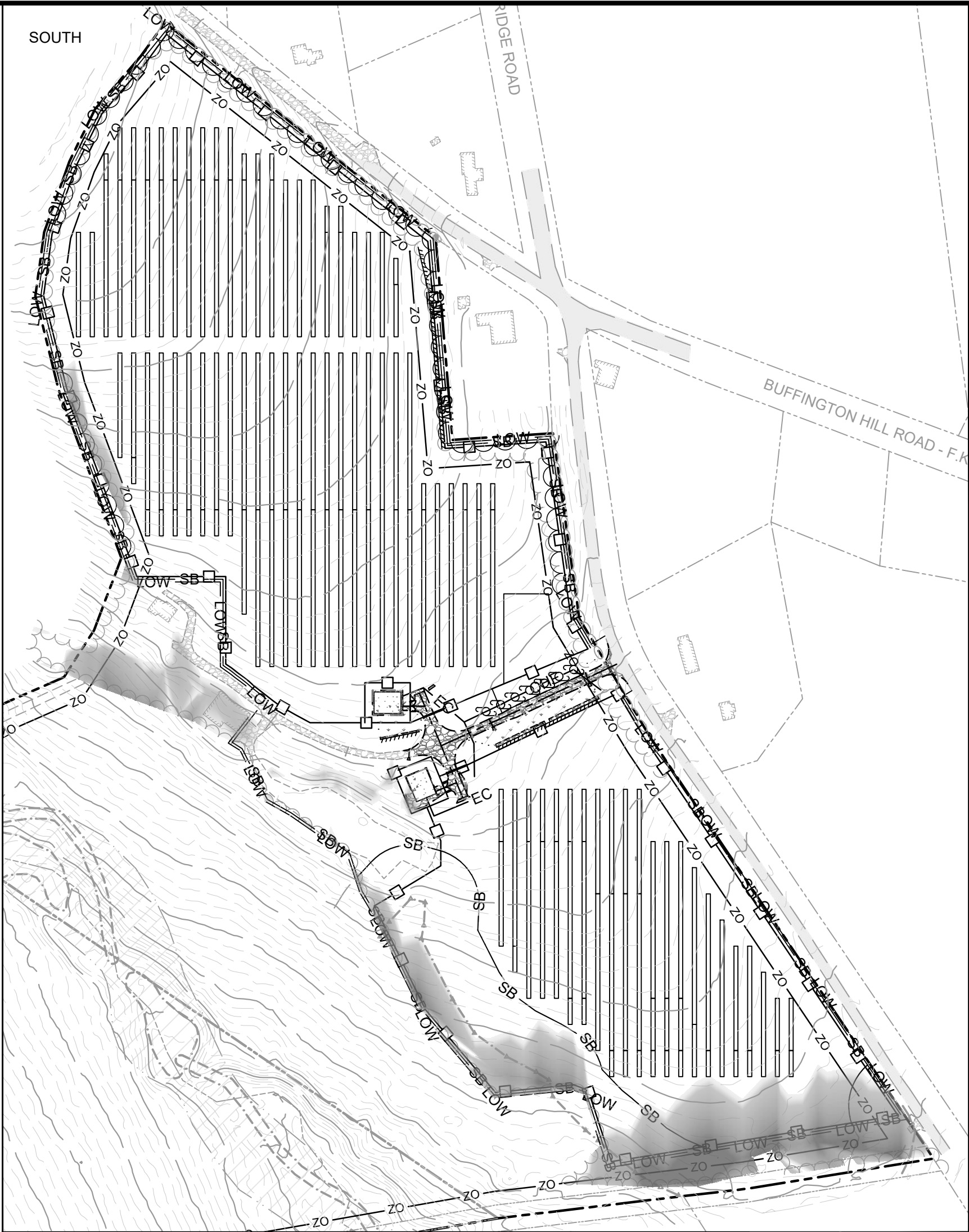
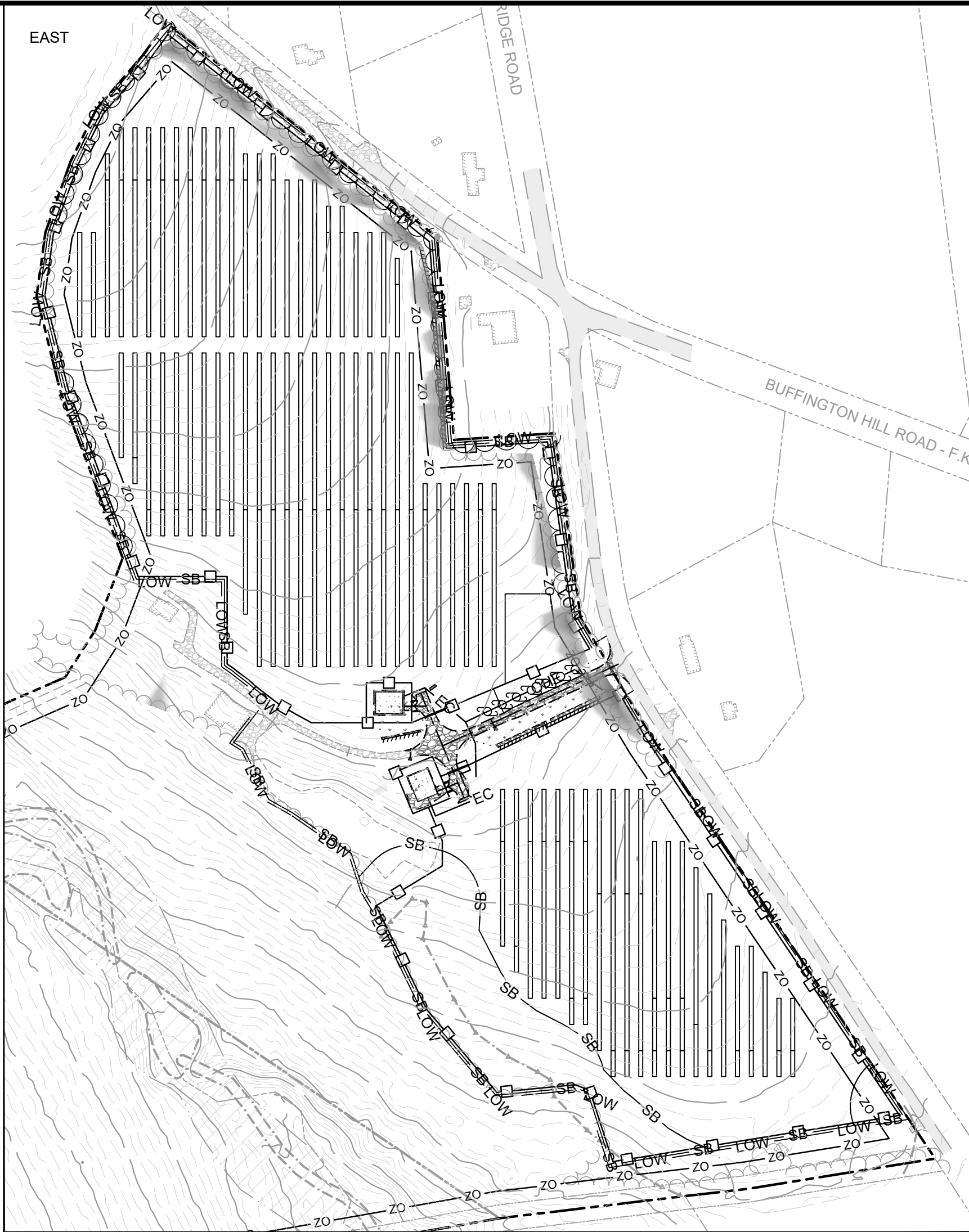
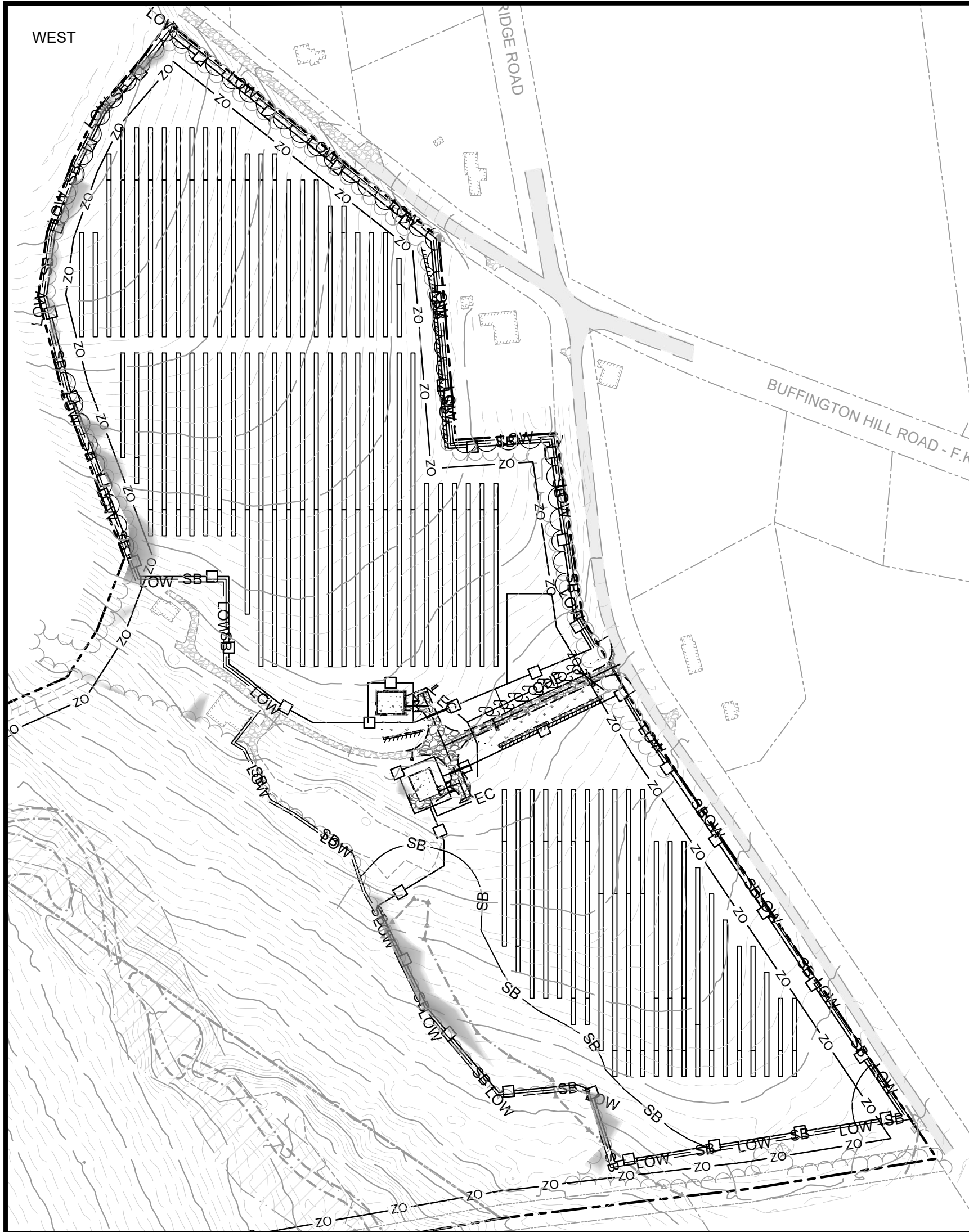
WORTHINGTON, MA 01098

TITLE: EQUIPMENT PADS

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-104	
SHEET NUMBER: 6 OF 9	





NOTES:

1. IDEAL SHADING SETBACKS:
- 1.1. SOUTHERN TREES: 3X TREE HEIGHT
- 1.2. EAST & WEST TREES: 2.5X TREE HEIGHT
- 1.3. SOUTHWEST & SOUTHEAST TREES: 3X TREE HEIGHT
- 1.4. NORTHWEST AND NORTHEAST TREES: 0.85X TREE HEIGHT

LEGEND:

EXISTING:

- PROPERTY LINE
- INTERNAL PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- RIGHT OF WAY
- 20' PROPERTY LINE SETBACK
- BUILDING
- ASPHALT
- GRAVEL
- STONE WALL
- EDGE OF VEGETATION
- EDGE OF GRASS
- TRAIL
- EDGE OF WETLAND
- WETLAND FLAG
- WATERBODY
- BUFFER
- FEMA FLOOD ZONE "A"
- OHE OVERHEAD WIRE
- CULVERT
- UTILITY POLE
- BOUNDARY EVIDENCE
- CONTROL POINT

PROPOSED:

- LOW LIMIT OF WORK
- 1670 MAJOR CONTOUR
- MINOR CONTOUR

FIXED KNOT GAME FENCE

DOUBLE SWING GATE

SLIDING GATE

OHE OVERHEAD ELECTRIC

SB SEDIMENT BARRIER

EC ELECTRICAL CONDUIT

ACCESS ROAD

CONCRETE PAD

SOLAR PV ARRAY

UTILITY POLE

CULVERT

INFILTRATION TRENCH

PERVIOUS BERM

VEGETATED FILTER STRIP

CONVEYANCE CHANNEL

RIPRAP APRON

SWATCH TREE HEIGHT (FT)

0 - 5
5 - 10
10 - 15
15 - 20
20 - 25
25 - 30
30 - 35
35 - 40
40 - 45
45 - 50
50 - 55
55 - 60
60 - 65
65 - 70
70 - 75
75 - 80
80 - 85
85 - 90
90 - 95

ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION

WSP USA INC.

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CHELMSFORD MASSACHUSETTS 01824  
TELEPHONE: (978) 692-9090  
FAX: (978) 692-6633  
WEB: WWW.WSP.COM

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

TITLE: SHADOW ANALYSIS OF PROPOSED CONDITIONS

CLIENT: BWC WADES STREAM, LLC

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

DRAWN BY: MRB  
SCALE: AS SHOWN  
DRAWING NUMBER: C-105  
SHEET NUMBER: 7 OF 9

APPROVED

ISSUED

REVISION

DATE

10/21/2025  
09/23/2025

1  
0

10  
17

7.11  
C-501

9  
C-501

4  
C-501

2  
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1  
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6  
C-501

8  
C-501

3  
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12  
C-502

12.16  
C-502

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C-502

15  
C-502

13.14  
C-502

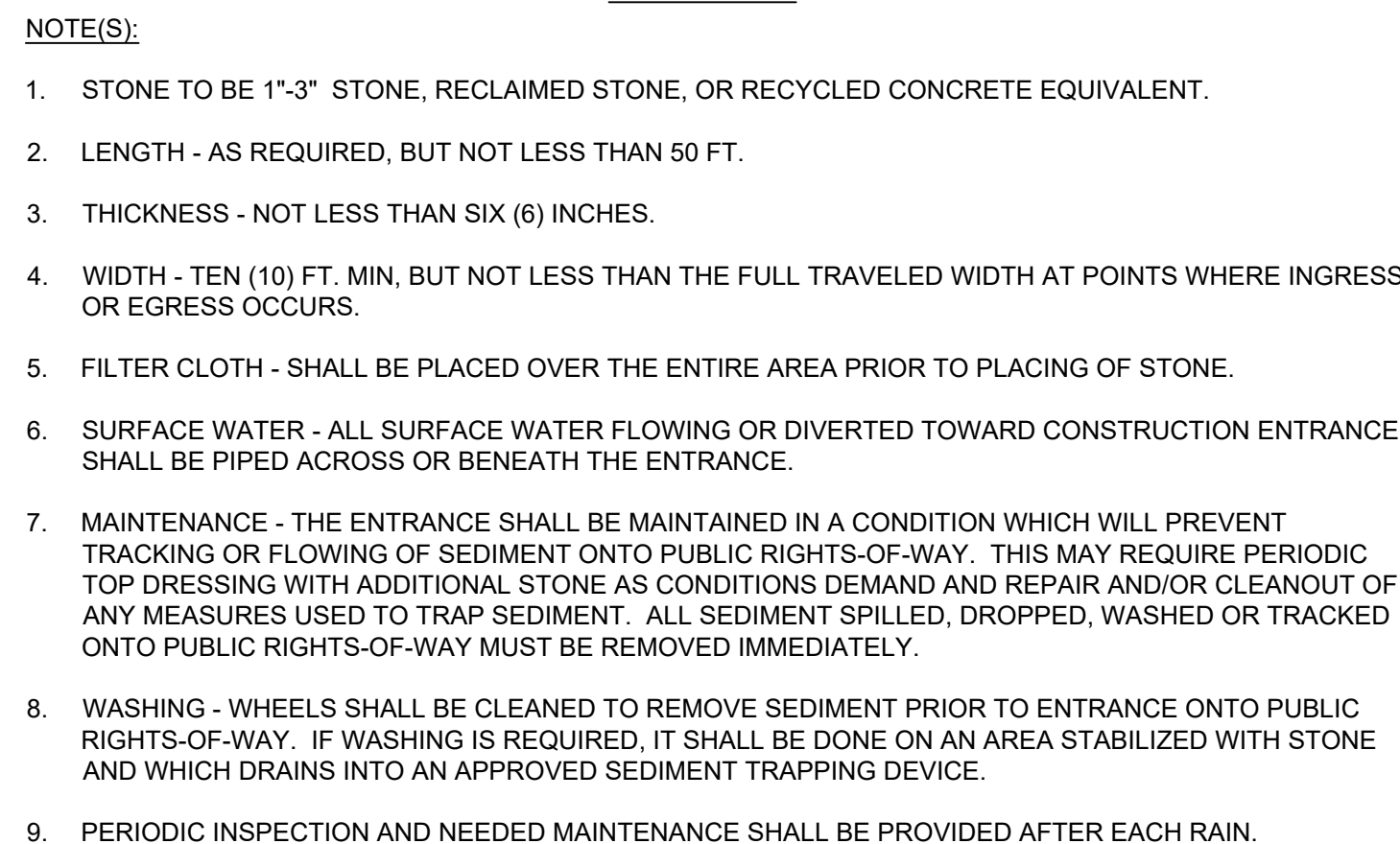
10/21/2025

ANDREW P. VARDAKIS  
CIVIL  
No. 52524  
REGISTERED  
PROFESSIONAL ENGINEER

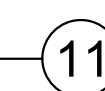
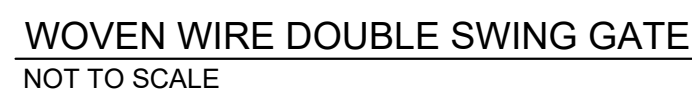
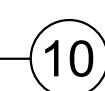
0' 100' 200' 300'  
1" = 200' WHEN PLOTTED 24" X 36"

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NOT TO SCALE









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**Attachment B**

**Additional Equipment  
Specification Sheets**

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# SOLECTRIA® XGI 1500-166 SERIES

## PREMIUM 3-PHASE TRANSFORMERLESS UTILITY-SCALE INVERTERS

### FEATURES

- Made in the USA with global components
- Buy American Act (BAA) compliant
- Four models:
  - 125kW/125kVA,
  - 125kW/150kVA,
  - 150kW/166kVA,
  - 166kW/166kVA
- Additional models available certified to UL1699b, Photovoltaic DC Arc-Fault Circuit Protection
- 99.0% peak efficiency
- Flexible solution for distributed and centralized system architecture
- Advanced grid-support functionality Rule 21/UL1741SB
- Robust, dependable, & built to last
- Lowest O&M and installation costs
- Access all inverters on site via WiFi from one location
- Remote diagnostics and firmware upgrades
- SunSpec Modbus Certified
- Tested compatible with the TESLA PowerPack Microgrid System app for system visibility

### OPTIONS

- String combiners for distributed and centralized systems
- Web-based monitoring
- Extended warranty



Yaskawa Solectria Solar's XGI 1500 utility-scale string inverters are designed for high reliability and built of the highest quality components that were selected, tested and proven to last beyond their warranty.

XGI 1500 inverters provide advanced grid-support functionality and meet the latest IEEE 1547 and UL1741SB standards for safety. They are the most powerful 1500 VDC string inverters in the PV market and have been engineered for both distributed and centralized system architecture.

Designed and engineered in Lawrence, MA, XGI inverters are assembled and tested at Yaskawa America's facilities in Buffalo Grove, IL. They are Made in the USA with global components and are compliant with the Buy American Act.



# SOLECTRIA® XGI 1500-166 SERIES TECHNICAL DATA

## SPECIFICATIONS

SOLECTRIA XGI 1500 Model		XGI 1500-125/125-UL XGI 1500-125/125-UL-A	XGI 1500-125/150-UL XGI 1500-125/150-UL-A	XGI 1500-150/166-UL XGI 1500-150/166-UL-A	XGI 1500-166/166-UL XGI 1500-166/166-UL-A
DC Input	Absolute Max Input Voltage	1500 VDC	1500 VDC	1500 VDC	1500 VDC
	Max Power Input Voltage Range (MPPT)	860-1250 VDC	860-1250 VDC	860-1250 VDC	860-1250 VDC
	Operating Voltage Range (MPPT)	860-1450 VDC	860-1450 VDC	860-1450 VDC	860-1450 VDC
	Number of MPP Trackers	1 MPPT	1 MPPT	1 MPPT	1 MPPT
	Max Operating Input Current	148.3 A	148.3 A	178.0 A	197.7 A
	Max Operating PV Power	128 kW	128 kW	153 kW	170 kW
	Max DC/AC Ratio   Max Rated PV Power	2.6   332 kW	2.6   332 kW	2.2   332 kW	2.0   332 kW
	Max Rated PV Short-Circuit Current (ΣIsc x 1.25)	500 A	500 A	500 A	500 A
AC Output	Nominal Output Voltage	600 VAC, 3-Ph	600 VAC, 3-Ph	600 VAC, 3-Ph	600 VAC, 3-Ph
	AC Voltage Range	-12% to +10%	-12% to +10%	-12% to +10%	-12% to +10%
	Continuous Real Output Power	125 kW	125 kW	150 kW	166 kW
	Continuous Apparent Output Power	125 kVA	150 kVA	166 kVA	166 kVA
	Max Output Current	120 A	144 A	160 A	160 A
	Nominal Output Frequency	60 Hz	60 Hz	60 Hz	60 Hz
	Power Factor (Unity default)	+/- 0.80 Adjustable	+/- 0.80 Adjustable	+/- 0.80 Adjustable	+/- 0.80 Adjustable
	Total Harmonic Distortion (THD) @ Rated Load	<3%	<3%	<3%	<3%
	Grid Connection Type	3-Ph + N/GND	3-Ph + N/GND	3-Ph + N/GND	3-Ph + N/GND
	Fault Current Contribution (1 cycle RMS)	144 A	173 A	192 A	192 A
Efficiency	Peak Efficiency	98.9%	98.9%	99.0%	99.0%
	CEC Average Efficiency	98.5%	98.5%	98.5%	98.5%
	Tare Loss	2.75 W	2.75 W	2.75 W	2.75 W
Temperature	Ambient Temp Range	-40°F to 140°F (-40C to 60C)		-40°F to 140°F (-40C to 60C)	
	De-Rating Temperature	122°F (50C)		113°F (45C)	
	Storage Temperature Range	-40°F to 167°F (-40C to 75C)		-40°F to 167°F (-40C to 75C)	
	Relative Humidity (non-condensing)	0 - 95%		0 - 95%	
	Operating Altitude	Full Power up to 9,840 ft (3.0 km); De-Rate to 70% of Full Power at 13,123 ft (4.0 km)			
Communications	Advanced Graphical User Interface	WiFi			
	Communication Interface	Ethernet			
	Third-Party Monitoring Protocol	SunSpec Modbus TCP/IP			
	Web-Based Monitoring	Optional			
	Firmware Updates	Remote and Local			
Testing & Certifications	Safety Listings & Certifications	UL1741SB, IEEE 1547, UL 1998 (All models) UL 1699b Photovoltaic Arc-Fault Circuit Protection Certified (-A models)			
	Advanced Grid Support Functionality	Rule 21, UL 1741SB			
	Testing Agency	ETL			
	FCC Compliance	FCC Part 15 (Subpart B, Class A)			
Warranty	Standard and Options	5 Years Standard; Option for 10 Years			
Enclosure	Acoustic Noise Rating	73 dBA @ 1 m ; 67dBA @ 3 m			
	DC Disconnect	Integrated 2-Pole 250 A DC Disconnect			
	Mounting Angle	Vertical only			
	Dimensions	Height: 29.5 in. (750 mm)   Width: 39.4 in. (1000 mm)   Depth: 15.1 in. (380 mm)			
	Weight	270 lbs (122 kg)			
	Enclosure Rating and Finish	Type 4X, Polyester Powder-Coated Aluminum			





**FLEXRACK SERIES**

# FlexTrack - S Series

## **Tough, Reliable Tracker & Team of Experts at Your Service**

Single row, central slew drive balanced system  
Engineered for long term durability and reliability  
Low cost to maintain  
Flexible to accommodate and optimize all your project design and generation needs  
Superior land density with no gaps at the bearings  
Available in Self-Powered and Grid-Powered options  
Designed with intuitive constructability which translates to superior installation times and lower project costs  
Over 500 projects successfully deployed throughout the USA and Canada  
Bankable Product and Team. Successfully completed stringent third party bankability review for use on utility, C&I, and DG projects.



## **Professional engineering & superior quality products**

Let us be your hands-on comprehensive partner. FLEXRACK by QCells has the most flexible product offering, customizable to your project needs.

### **Distributed Drive Reduces Operations And Maintenance Costs**

FlexTrack Trackers have no mechanical components between rows, allowing easy access for mowers, cleaning services and other project maintenance.

### **Smart Backtracking Maximizes Energy Production**

FlexTrack trackers can be programmed based on the terrain, to optimize MWh production. Trackers on east-facing slopes get more early-morning sun, and trackers on west-facing slopes get more in the late afternoon, increasing overall yield.

### **Complete Service Offering Reduces Project Costs And Risks**

A tracker solution that comes with all the critical associated services – and an unmatched team of experts – will dramatically reduce your total cost. Project management is simplified, redundancies are eliminated, and we will assist you with optimizing your solar projects





## CONTROL SYSTEM

Data Feed	Ethernet to Network Control Unit
Power Consumption	Grid-Powered: 31kWh per tracker per year
Tracker Controller	1 Controller to DC motor per tracker
Size	230 x 100 x 150 mm
Battery (self-powered)	Rechargeable LiFePO4 (Lithium Iron Phosphate 3Ah (standard operating temperatures), 6Ah for low temperature conditions
Battery Charging (self-powered)	Optimum charging through CC/CV algorithm for LiFePO4 Chemistries which contributes to extended battery life
SoC Monitoring (self-powered)	SoC achieved through OCV and Coulomb counting algorithms
Operating Temperatures	Grid Powered:-20C to 60C Self Powered (Standard): -10C to 50C Self Powered (Low Temp): -30C to 40C
Interface	HMI (includes enclosure mounted keypad LED visual interface)
Communication	Zigbee Wireless
PV Module (self-powered)	Standard: 38W Monocrystalline Low Temp: 76W Monocrystalline

## SERVICES

Geotechnical Services	Configuration of Tracker Controls
Structural Analysis	Project Management
Layout and Design Services	PE Stamp
Foundation Design Services	On-site Training
Post Driving	Commissioning of Tracker System
Pull Testing	Tracking System Installation

## UL COMPLIANCE

All FLEXRACK by Qcell systems have gone through UL testing. Each component-connection point within the system conforms to NEC codes for electrically bonded and conductive systems. Testing is performed by Solar PTL in accordance with UL 3703.

Certification covers both United States and Canada.

## TRACKING

Tracking Method	Single-axis horizontal, distributed drive
Backtracking	Smart backtracking - 3D backtracking technology available to reduce row shading and optimize energy production on challenging terrain. Overcast feature intelligently positions trackers to optimize energy yields for diffused light conditions and bifacial modules
Tracking Range	Up to 110° (± 55°)
Ground Coverage Ratio (GCR)	No limitation. Configurable based on site conditions.
Tracking Accuracy	2°
Stow Features	Stow Strategy is customized to meet project specifications to protect system from extreme weather events including wind, snow, hail, and flooding

## ARRAY CONFIGURATION

Panels per Tracker	Up to 90 (72 Cell Modules)
Trackers per Controller	1
String Voltage	Up to 1,500 volts
Posts per Tracker	Dependant on tracker size and site conditions, approximately 15 posts for 90 panels
Panel Configurations*	1 in portrait (crystalline) 2 in landscape (crystalline) 4 in landscape (thin film)
Drive Type	Slew 24 Volts DC

## OPERATIONS AND MAINTENANCE

Scheduled Maintenance	None
Warranty	10 Years: Structural 5 Years: Drives and Electrical
Certifications	UL 3703
Dynamic Load Management	Integrated frictional dampening and limited progressive dampening technology

## INSTALLATION TOLERANCES

North-south Slope Tolerance	Up to 7%
North-south Post Spacing	± 1.5 inches (.038 meter)
East-west Post Alignment	+/- 0.75 inches
Post Height	± 1 inch (0.025 meter)
Post Plumb	± 1°

## CONSTRUCTION

Structural Materials	Galvanized Steel. Multiple coatings available.
Bearings	UV-rated engineering plastic, no lubrication needed
Mechanical Connections	Bolted - no welding, drilling or cutting required

## ENVIRONMENTAL

Wind (IBC-2012/ASCE 7-10)	Up to 130 mph (Trackers can be customized to higher wind speeds upon request) 35 mph stow position
Snow Load	30 psf (Trackers can be customized to higher snow loads upon request)

## TESTING

Rain, wind, sleet, snow, heat – every day and everywhere, our products are battling the elements. We perform ongoing extensive testing in these key areas: wind tunnel, structural load, electrical bonding, and life cycle. FLEXRACK by Qcell trackers also undergo wind tunnel testing performed by RWDI and CPP, per American Society of Civil Engineers Standard ASCE 7.

\*Adaptable to all module sizes

**50 YEARS & OVER  
4 GIGAWATTS**

FLEXRACK by Qcells is an integrated solar company that offers custom-designed, fixed tilt ground mount and single-axis solar tracking systems in the commercial and utility-scale solar mounting industries. FLEXRACK also offers full services, including engineering, geotechnical, pullout testing, field, and layout design services to address the actual site conditions of a project site. FLEXRACK has completed over 4 GW of solar racking installations in over 40 U.S. states and across the globe.



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**Attachment C**

**Wetland Investigation  
Area Figure**

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REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED	APPROVED

PROJECT:	2.0 MW AC GROUND-MOUNT SOLAR PV DEVELOPMENT
CLIENT:	BWC WADES STREAM, LLC
LOCATION:	190 RIDGE ROAD WORTHINGTON, MA 01098
TITLE:	WETLAND INVESTIGATION AREA

DESIGNED BY:	OAC	DRAWN BY:	MRB
CHECKED BY:	APV	SCALE:	AS SHOWN
PROJECT NUMBER:	US-EI-365230438	DRAWING NUMBER:	1
SHEET NUMBER:	1 OF 1		

## WETLAND INVESTIGATION AREA (APPROXIMATELY 48 ACRES)



ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION



wsp

