

Exhibit A  
Site Plan & Key  
Observation Plan

# Borrelli Road Solar

179-197 Borrelli Road  
East Haven, Connecticut 06512

## Permitting Documents

Prepared For



222 S 9th St, Suite 1600  
Minneapolis, MN 55402

### PROPERTY LOCATION

179-197 Borrelli Road  
East Haven, CT 06512

### ZONE

Residence - R-3

### PROPERTY OWNERS & APPLICANT

#### PROPERTY OWNER:

Vinyard Sky Farms Corp.  
157 Church Street, 19th Floor  
New Haven, CT 06510

#### APPLICANT:

ECOS Energy  
222 South 9th Street, Suite 1600  
Minneapolis, MN 55402

### PROJECT CONTACT INFORMATION

#### RECORD LANDOWNER:

Vinyard Sky Farms Corp.  
157 Church Street, 19th Floor  
New Haven, CT 06510

#### CIVIL ENGINEER:

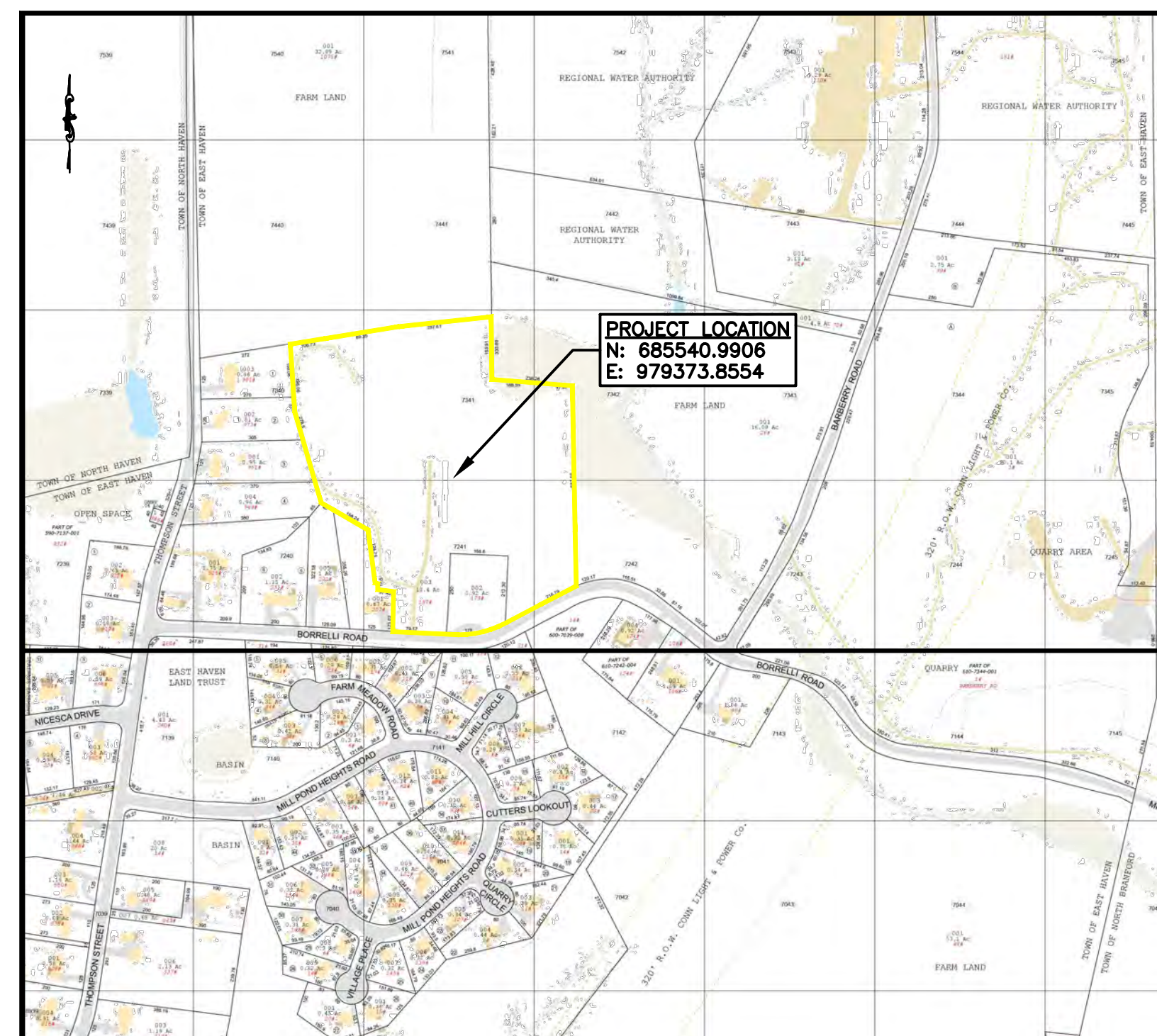
CLA Engineers, Inc.  
317 Main Street  
Norwich, CT 06360  
TEL: 860-886-1966

#### OWNER/DEVELOPER:

ECOS Energy  
222 South 9th Street, Suite 1600  
Minneapolis, MN 55402

#### SURVEYOR & WETLANDS DELINEATION:

Godfrey Hoffman Hodge, LLC  
26 Broadway  
North Haven, CT 06473  
TEL: 203-239-4217



### LOCATION MAP

SCALE: 1"=±400'

Revised: December 6, 2024  
Revised: November 27, 2024  
Revised: October 31, 2024  
Revised: February 29, 2024  
Revised: February 23, 2024  
January 26, 2024

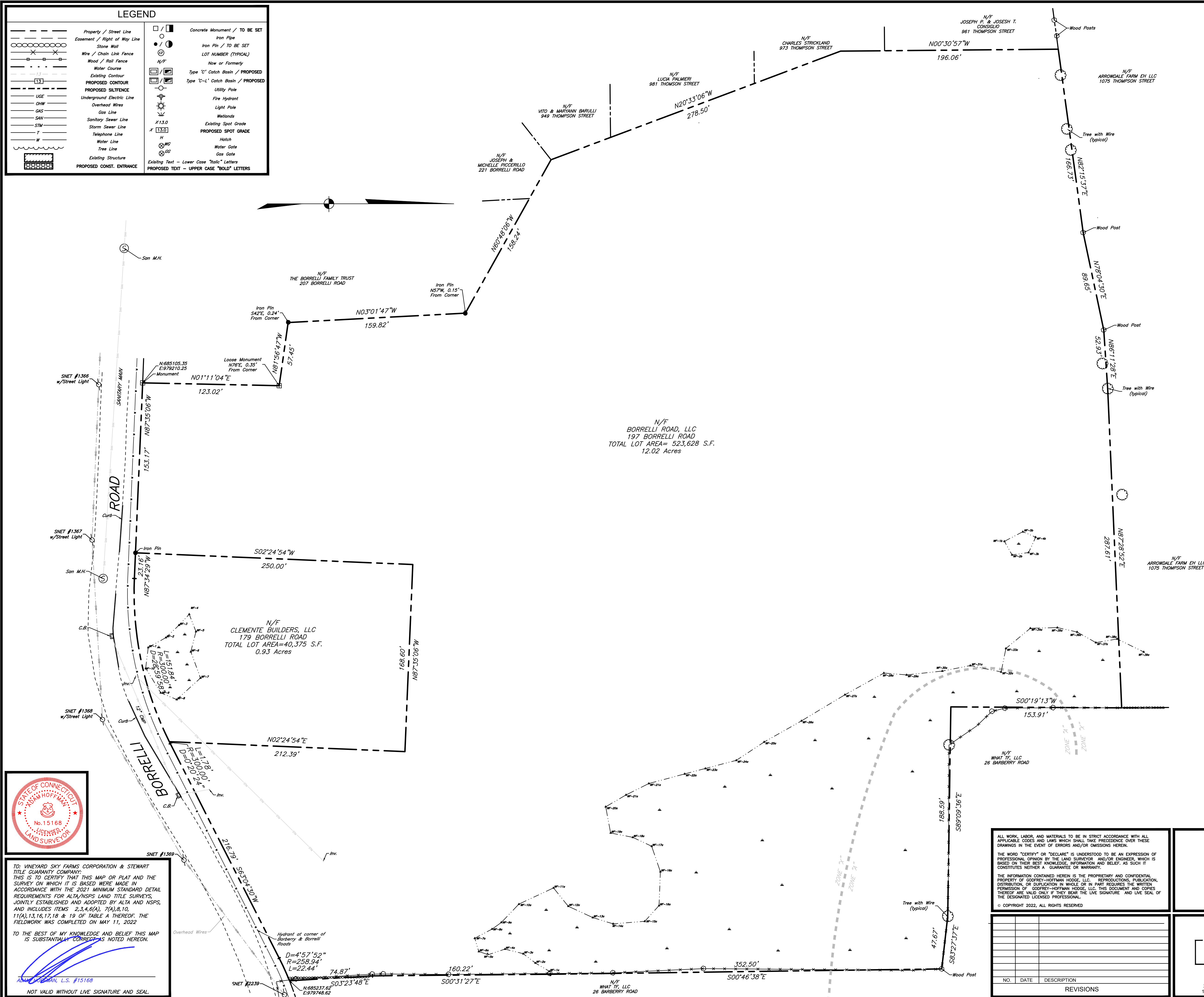
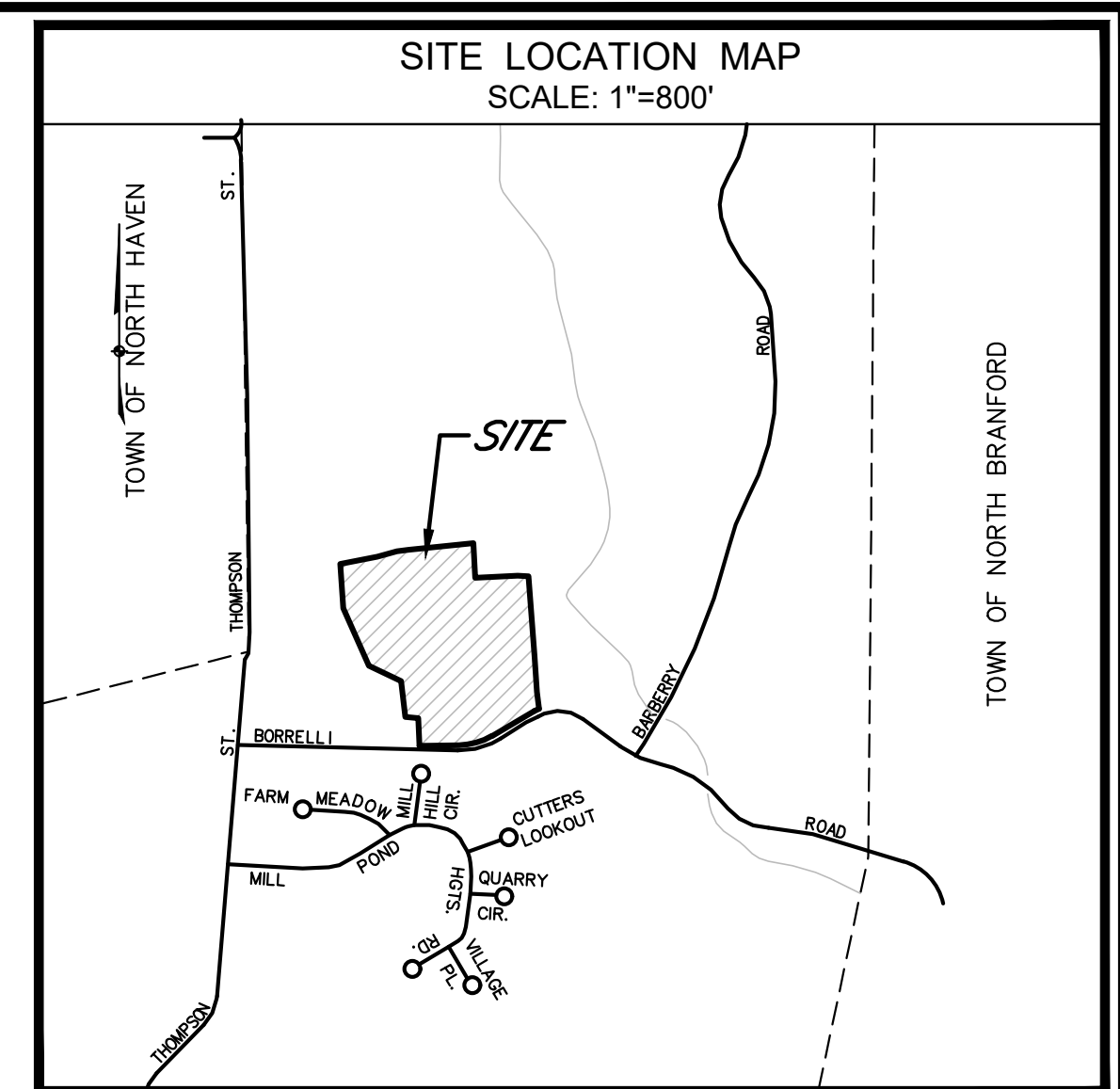
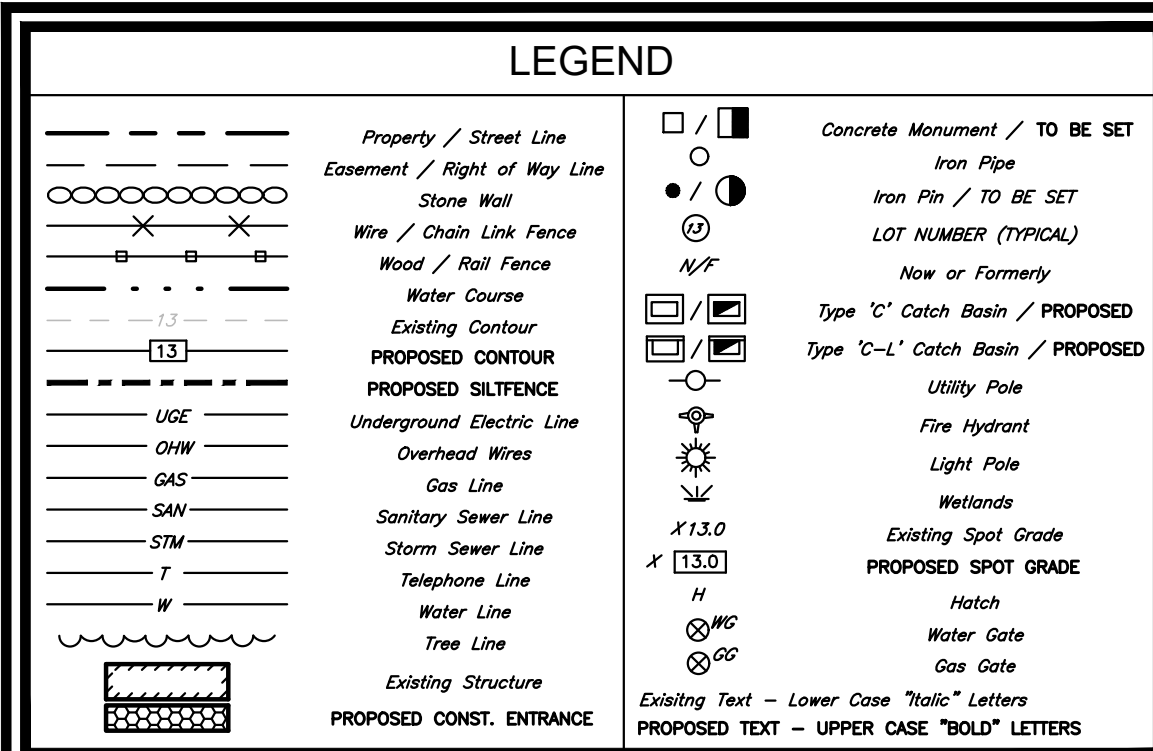
### INDEX TO DRAWINGS

Sheet No.	Description of Drawing
1	ALTA/NSPS Land Title and Property Survey
2	Overall Site Plan
3	Grading and Erosion & Sedimentation Control Plan - South
4	Grading and Erosion & Sedimentation Control Plan - North
5	Stormwater Management Basin Plans
6	Landscaping Plan
7-9	Cross Section Views
10	Key Observation Point Plan
11	Erosion & Sedimentation Control and Stormwater Management Details
12	Civil Construction Notes
13-14	Civil Construction Details

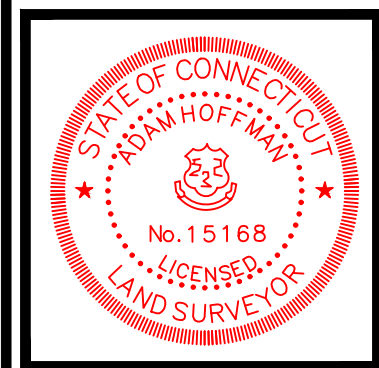
**CLA Engineers, Inc.**  
CIVIL • STRUCTURAL • SURVEYING

317 Main Street Norwich, CT 06360  
(860) 886-1966 Fax (860) 886-9165





- NOTES:
1. THE MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1 THRU 20-300B-20, THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, EFFECTIVE JUNE 21, 1986, AMENDED OCTOBER 26, 2018.
  - A. THE HORIZONTAL ACCURACY CONFORMS TO CLASS "A-2".
  - B. THE BOUNDARY DETERMINATION CATEGORY IS A "RESURVEY".
  - C. THE TYPE OF SURVEY IS A "PROPERTY SURVEY".
2. ALL MONUMENTATION FOUND OR SET IS DEPICTED ON THIS MAP.
3. THE NORTH ARROW, BEARINGS, AND COORDINATES ARE BASED UPON THE CONNECTICUT STATE PLANE COORDINATE SYSTEM, NAD 83, 96 ADJUSTMENT UTILIZING THE SUPERIOR INSTRUMENTS GPS NETWORK.
4. REFERENCE MAP(S):
  - A. "MAP SHOWING PROPERTY OF THE SIZE SPEZZANO, ANGELO MOSCATO, & EARL W. TUCKER, JR."  
BY: HENDRICKS ASSOCIATES  
DATED JUNE 18, 1988
  - B. "LOT LAYOUT SECT. A, BORRELLI ACRES"  
BY: ROBERT H. DECKER  
DATED JUNE 2, 1959
  - C. "MAP SHOWING PORTION OF PROPERTY OF LUIGI BORRELLI TO BE CONVEYED"  
BY: ROBERT H. DECKER  
DATED DECEMBER 1941
  - D. PROPERTY TOPOGRAPHIC SURVEY, PREPARED FOR BORRELLI ROAD, LLC  
BY: GODFREY-HOFFMAN ASSOCIATES, LLC  
DATED MAY 27, 2010
7. PROPERTY IS LOCATED IN ZONING DISTRICT R-3.
8. PROPERTY IS LOCATED IN FLOOD ZONE(S): "A" (AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOOD PLAIN) & "A" DEPICTED ON F.I.R.M. COMMUNITY NO. 090076, PANEL # 090080C0454I DATED MAY 16, 2017.
9. PROPERTY IS SUBJECT TO AND TOGETHER WITH THE FOLLOWING:
  - A. RIGHTS, RESTRICTIONS, ENCUMBRANCES, COVENANTS, EASEMENTS, ETC. AS THE RECORD MAY APPEAR.
  - B. THE PROPERTY IS SUBJECT TO RESTRICTIONS AS RECORDED IN VOLUME 177 AT PAGE 122 OF THE EAST HAVEN LAND RECORDS.
  - C. AGREEMENT BY AND BETWEEN THE NEW HAVEN ROAD CONSTRUCTION COMPANY, LLC AND LUIGI BORRELLI DATED FEBRUARY 28, 1941 AND RECORDED APRIL 21, 1941 IN BOOK 102 AT PAGE 180, PUBLIC RECORDS, NEW HAVEN COUNTY, CONNECTICUT.
  - D. AGREEMENT BY AND BETWEEN THE NEW HAVEN TRAP ROCK COMPANY AND LUIGI BORRELLI DATED NOVEMBER 1, 1955 AND RECORDED APRIL 30, 1962 IN BOOK 195 AT PAGE 627, PUBLIC RECORDS, NEW HAVEN COUNTY, CONNECTICUT.
11. THE SUBJECT PROPERTY IS DESIGNATED AS MAP 610, BLOCK 7241 LOT 002 (#178 BORRELLI RD.) & LOT 003 (#197 BORRELLI RD.) ON THE EAST HAVEN ASSESSOR'S RECORDS.
12. THE WETLANDS WERE FLAGGED ON MAP 6, 2022 BY JOSEPH R. THEROUX AND FIELD LOCATED MAY 10, 2022 BY GHH, LLC.
12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON MAY HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES. HOWEVER, THE UTILITY LOCATIONS SHOWN ON THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE LOCATIONS OF WHICH ARE UNKNOWN TO GODFREY-HOFFMAN HORDE, LLC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.
13. THERE WAS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
14. THERE WAS NO EVIDENCE OF RECENT PROPOSED CHANGES IN STRIGHT RIGHT OF WAY LINES OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.



TO: VINEYARD SKY FARMS CORPORATION & STEWART  
TITLE GUARANTY COMPANY:  
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE  
SURVEY ON WHICH IT IS BASED WERE MADE IN  
ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL  
REQUIREMENTS FOR ALTA/NSP AND TITLE SURVEYS,  
JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS,  
AND INCLUDES ITEMS 2.3.4.6(A), 7(A), 8.10,  
11(A), 13.16, 17, 18 and 19 OF A PLAT THEREOF. THE  
FIELDWORK WAS COMPLETED ON MAY 11, 2022

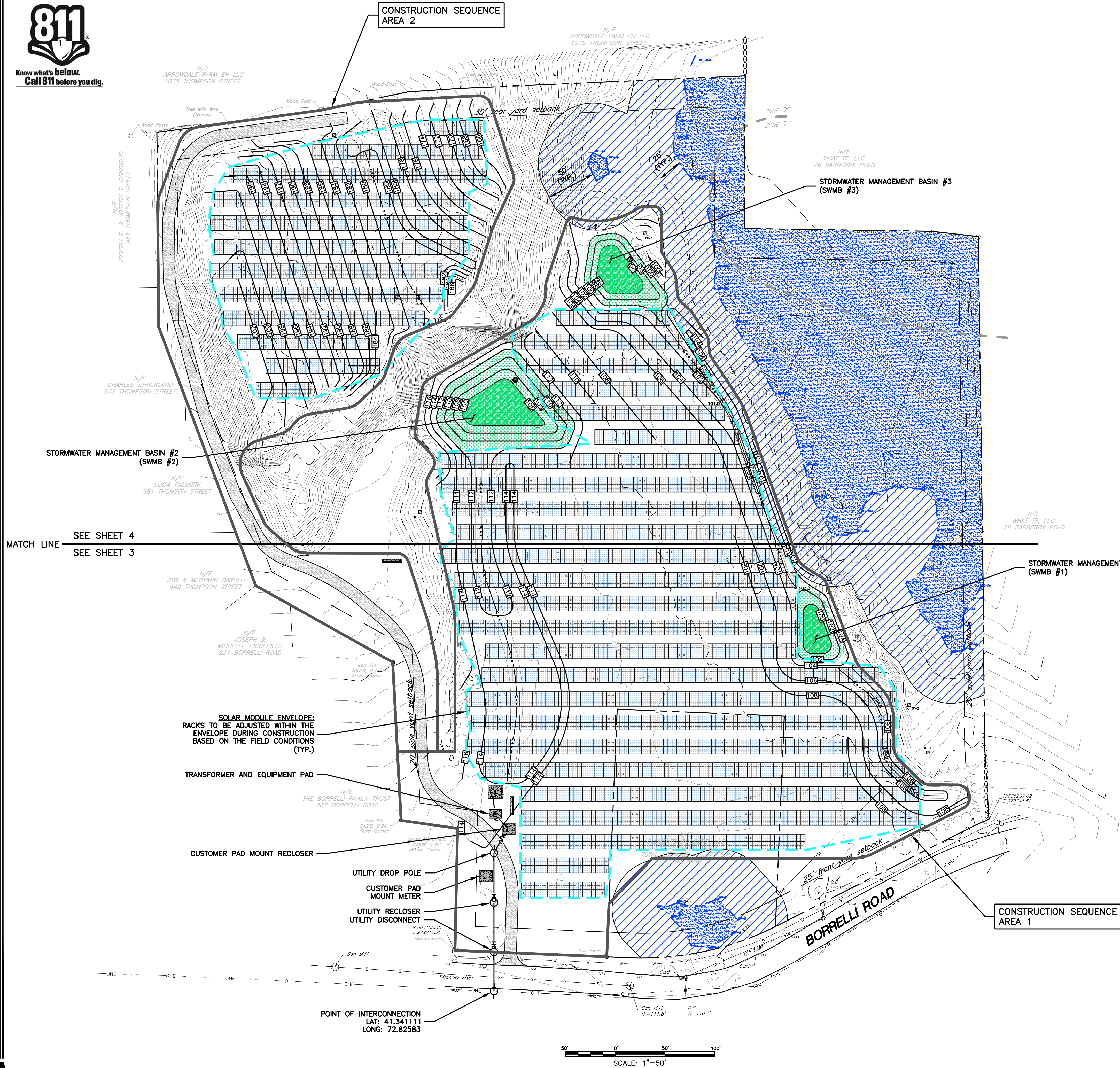
TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP  
IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

ASAP, GERRAN, L.S. #15168

NOT VALID WITHOUT LIVE SIGNATURE AND SEAL.



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



LEGEND TO DRAWINGS		
EXISTING		PROPOSED
— STM —	PROPERTY LINE	— [ ] —
— W —	CATCH BASIN & CULVERT	— [ ] —
— S —	WATER	— [ ] —
— E —	SEWER	— [ ] —
— OH —	GAS	— [ ] —
— OH —	ELECTRIC	— [ ] —
— OH —	ELECTRIC	— OH —
— [ ] —	UTILITY POLE	— [ ] —
— [ ] —	100-YR FLOOD PLAIN	— [ ] —
— 126 —	CONTOUR	— [ ] —
124.2 x	SPOT ELEVATION	— [ ] —
— x —	SILT FENCE	— SF —
— x —	FENCE	— [ ] —
— [ ] —	GUIDE RAIL	— [ ] —
— [ ] —	STONE WALL	— [ ] —
— [ ] —	TEST HOLE	— [ ] —
— [ ] —	TREE/SHRUB LINE	— [ ] —
— WFX —	WETLAND FLAGS/LIMITS	— [ ] —
— [ ] —	STORMWATER MANAGEMENT BASINS	— [ ] —
— [ ] —	SOLAR MODULES	— [ ] —

#### PROJECT INFORMATION

EXISTING ZONING: RESIDENCE, R-3  
PROPOSED USE: SPECIAL COMMERCIAL

#### SPECIFIC SITE NOTES:

- NO LIGHTING PROPOSED WITH THE PROJECT
- NO AUDIBLE NOISE GREATER THAN THE SITES EXISTING AMBIENT NOISE LEVEL SHALL BE DETECTABLE AT OR BEYOND THE PROPERTY LINE OF THE PROJECT
- EMERGENCY VEHICULAR & SITE ACCESS TO BE PROVIDED TO ALL LOCAL RESPONDERS (POLICE, FIRE, ETC...)

#### BORRELLI SOLAR PROJECT AREA & IMPACTS

TOTAL SITE AREA = 12.95 ACRES

TOTAL SITE DISTURBANCE = ±8.1 ACRES

#### CLEARING LIMIT AREA


CONSTRUCTION SEQUENCE AREA 1 = ±0.23 ACRES  
CONSTRUCTION SEQUENCE AREA 2 = ±1.48 ACRES

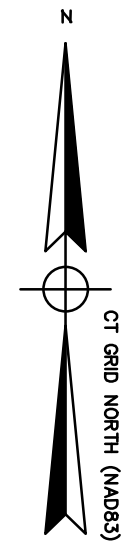
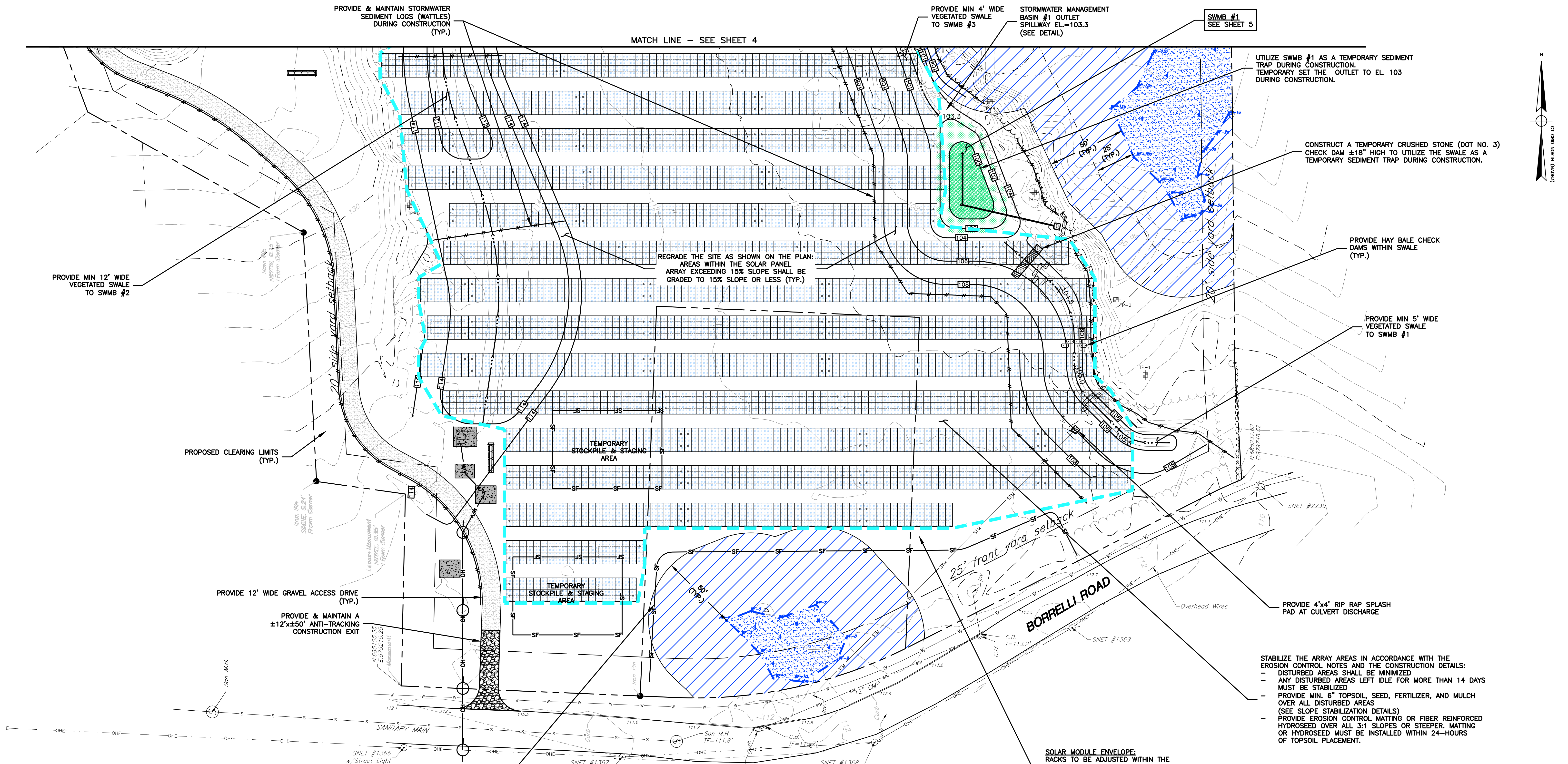
#### TOTAL ARRAY FOOTPRINT

(SOLAR MODULE ENVELOPE) = ±5.5 ACRES

#### TOTAL PROPOSED IMPERVIOUS AREA:

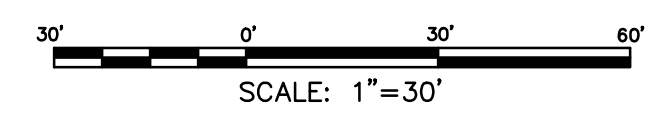
GRAVEL ACCESS ROAD, STRUCTURAL POSTS & EQUIPMENT PADS = ±0.33 ACRES  
SOLAR MODULES EFFECTIVE IMPERVIOUS = ±3.12 ACRES

			<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING	
5	12/8/2024	Clearing Limits / Misc. Revisions	317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165	
4	11/29/2024	Clearing Limits / Plantings		
3	10/31/2024	Misc. Additions & Revisions		
2	2/29/2024	Misc. Additions & Revisions		
1	2/23/2024	Misc. Additions & Revisions		
No.	DATE	REVISION		
			Project No. CLA-7629	
			222 South 9th Street, Suite 1600, Minneapolis, MN 55402	
			<b>Borrelli Road Solar</b>	
			179-197 Borrelli Road East Haven, CT 06512	
			Overall Site Plan	
			Proj. Engineer K.J.H.	
			Date: 1/28/2024	
			Sheet No. <b>2</b>	



**TEST PIT LOGS**  
TEST PIT DATA PROVIDED BY ECOS ENERGY

- TP-1**  
0-1" TOPSOIL  
1"-36" BROWN LOAMY SAND  
36"-75" BROWN SANDY GRAVEL  
NO WATER
- TP-2**  
0-2" TOPSOIL  
2"-18" BROWN LOAMY SAND  
18"-72" BROWN SANDY GRAVEL  
NO WATER
- TP-3**  
0-49" JUNK FILL (CONSTRUCTION DEBRIS)  
49"-75" BROWN SANDY GRAVEL  
NO WATER
- TP-4**  
0-98" JUNK FILL (CONSTRUCTION DEBRIS)  
NO WATER
- TP-8**  
0-1" TOPSOIL  
1-52" JUNK FILL (CONSTRUCTION DEBRIS)  
52"-88" BROWN SANDY GRAVEL



- STABILIZE THE ARRAY AREAS IN ACCORDANCE WITH THE EROSION CONTROL NOTES AND THE CONSTRUCTION DETAILS:
- DISTURBED AREAS SHALL BE MINIMIZED
  - ANY DISTURBED AREAS LEFT IDLE FOR MORE THAN 14 DAYS MUST BE STABILIZED
  - PROVIDE MIN. 6" TOPSOIL, SEED, FERTILIZER, AND MULCH OVER ALL DISTURBED AREAS (SEE SLOPE STABILIZATION DETAILS)
  - PROVIDE EROSION CONTROL MATTING OR FIBER REINFORCED HYDROSEED OVER ALL 3:1 SLOPES OR STEEPER. MATTING OR HYDROSEED MUST BE INSTALLED WITHIN 24-HOURS OF TOPSOIL PLACEMENT.

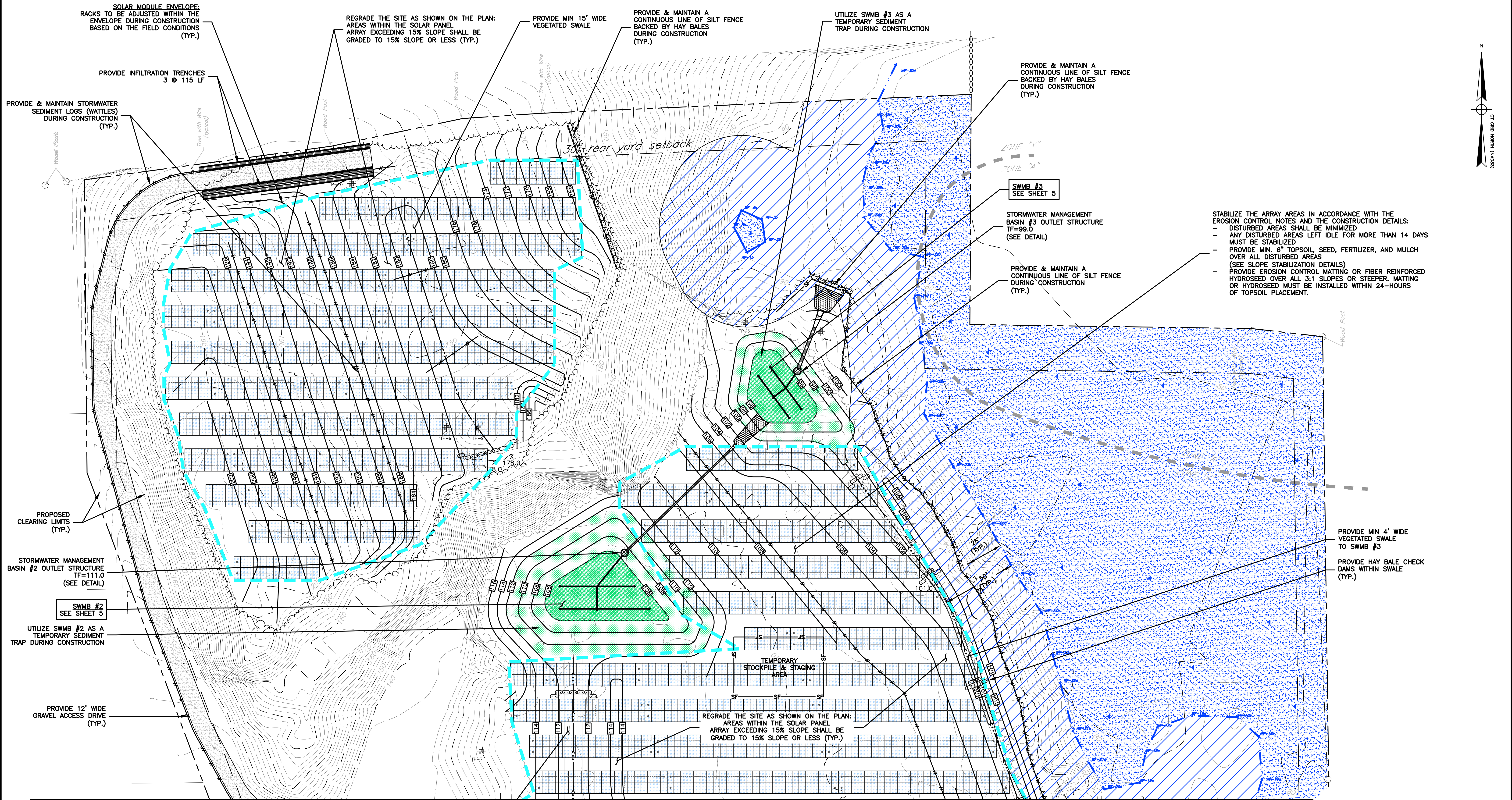
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No.	DATE	REVISION



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Plans Prepared for ECOS Energy  
222 South 9th Street, Suite 1600, Minneapolis, MN 55402  
**Borrelli Road Solar**  
179-197 Borrelli Road  
East Haven, CT 06512  
Grading and Erosion & Sedimentation Control Plan  
South

Project No.  
CLA-7629  
Proj. Engineer  
K.J.H.  
Date:  
1/26/2024  
Sheet No.



**TEST PIT LOGS**

TEST PIT DATA PROVIDED BY ECOS ENERGY

**TP-5**  
0'-3" TOPSOIL  
3"-51" JUNK FILL (CONSTRUCTION DEBRIS)  
51"-85" BROWN LOAMY SAND  
WATER: 51"

**TP-6**  
0'-3" TOPSOIL  
3"-49" JUNK FILL (CONSTRUCTION DEBRIS)  
49"-87" BROWN LOAMY SAND  
WATER: 49"

**TP-7**  
0'-2" TOPSOIL  
2"-48" JUNK FILL (CONSTRUCTION DEBRIS)  
48"-83" BROWN LOAMY SAND  
METHANE PRESENT  
WATER: 48"

**TP-9**  
0'-3" TOPSOIL  
3"-52" BROWN LOAMY SAND  
LEDGE: 52"

**TP-10**  
0'-4" TOPSOIL  
4"-40" BROWN LOAMY SAND  
LEDGE: 40"

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222 South 9th Street, Suite 1600, Minneapolis, MN 55402  
**Borrelli Road Solar**  
179-197 Borrelli Road  
East Haven, CT 06512  
Grading and Erosion & Sedimentation Control Plan  
North

Project No.  
CLA-7629  
Proj. Engineer  
K.J.H.  
Date:  
1/26/2024  
Sheet No.  
**4**

5 12/6/2024 Clearing Limits / Misc. Revisions

4 11/27/2024 Clearing Limits / Plantings

3 10/31/2024 Misc. Additions & Revisions

2 2/29/2024 Misc. Additions & Revisions

1 2/23/2024 Misc. Additions & Revisions

No. DATE REVISION

5 12/6/2024 Clearing Limits / Misc. Revisions

4 11/27/2024 Clearing Limits / Plantings

3 10/31/2024 Misc. Additions & Revisions

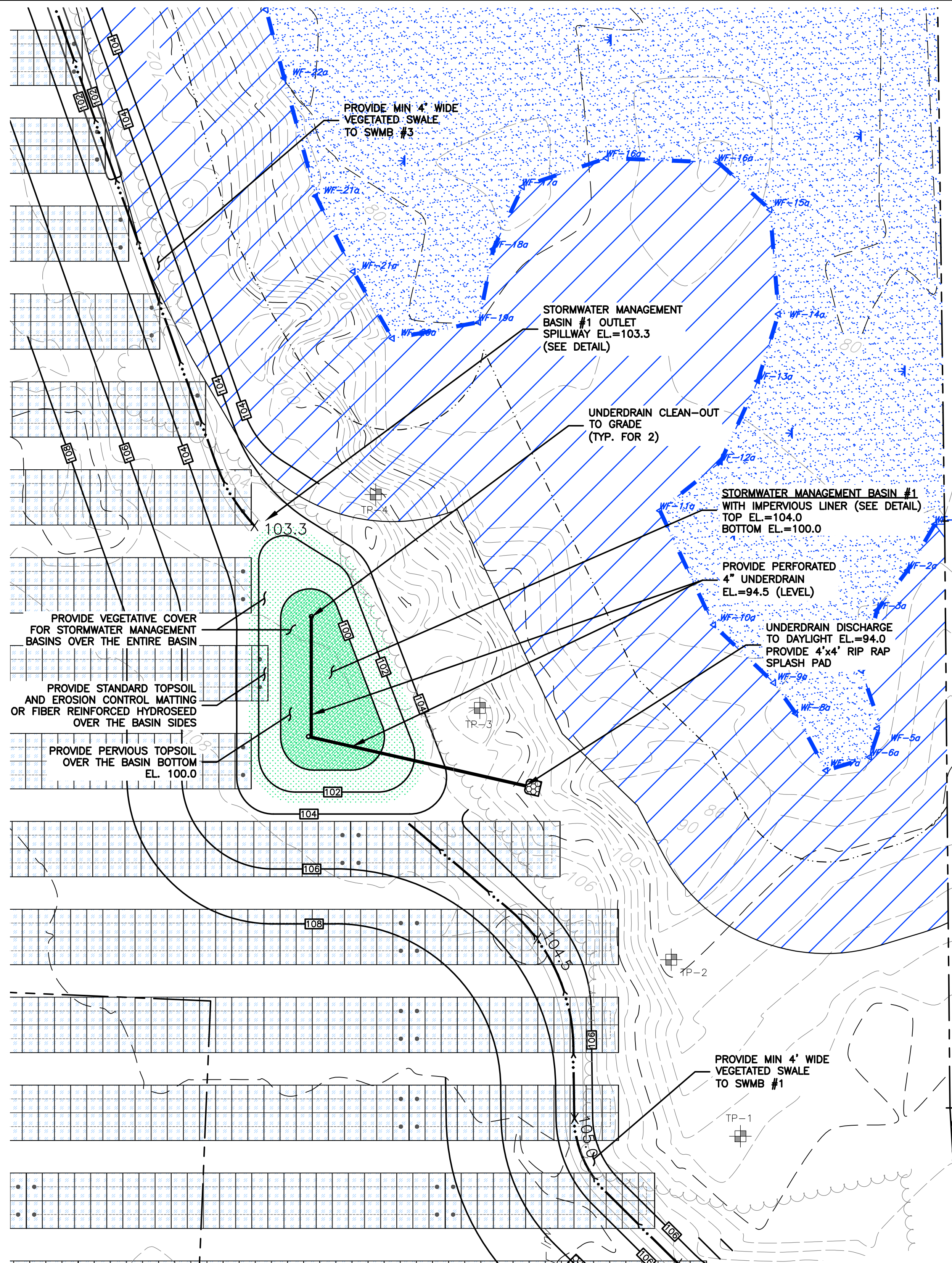
2 2/29/2024 Misc. Additions & Revisions

1 2/23/2024 Misc. Additions & Revisions

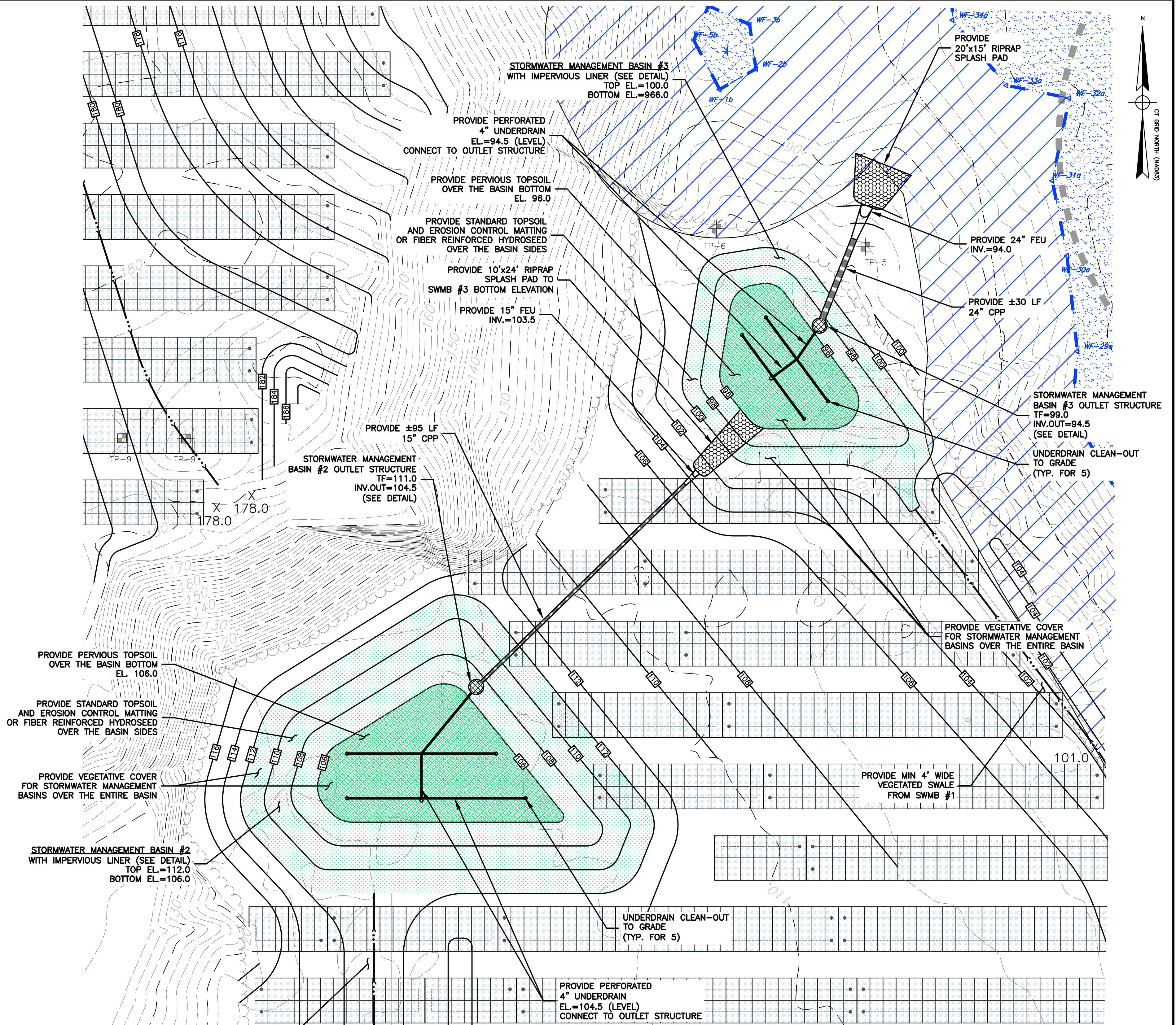
STATE OF CONNECTICUT  
K. J. HARRIS  
No. 2439  
LICENSED PROFESSIONAL ENGINEER

SCALE: 1"=30'

LA170001762917629 Borrelli Road Solar - East Haven (Drainage) (CLA-7629) Borrelli Solar - Sheet 02 of 05 Site Plan (R5.dwg)



Stormwater Management Basins #1  
SCALE: 1"=20'



Stormwater Management Basins #2 & #3  
SCALE: 1"=20'

No.	DATE	REVISION
5	12/6/2024	Clearing Limits / Misc. Revisions
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Plans Prepared for ECOS Energy  
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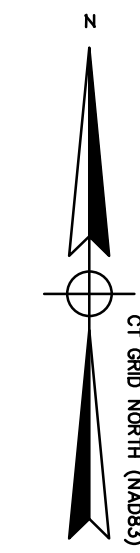
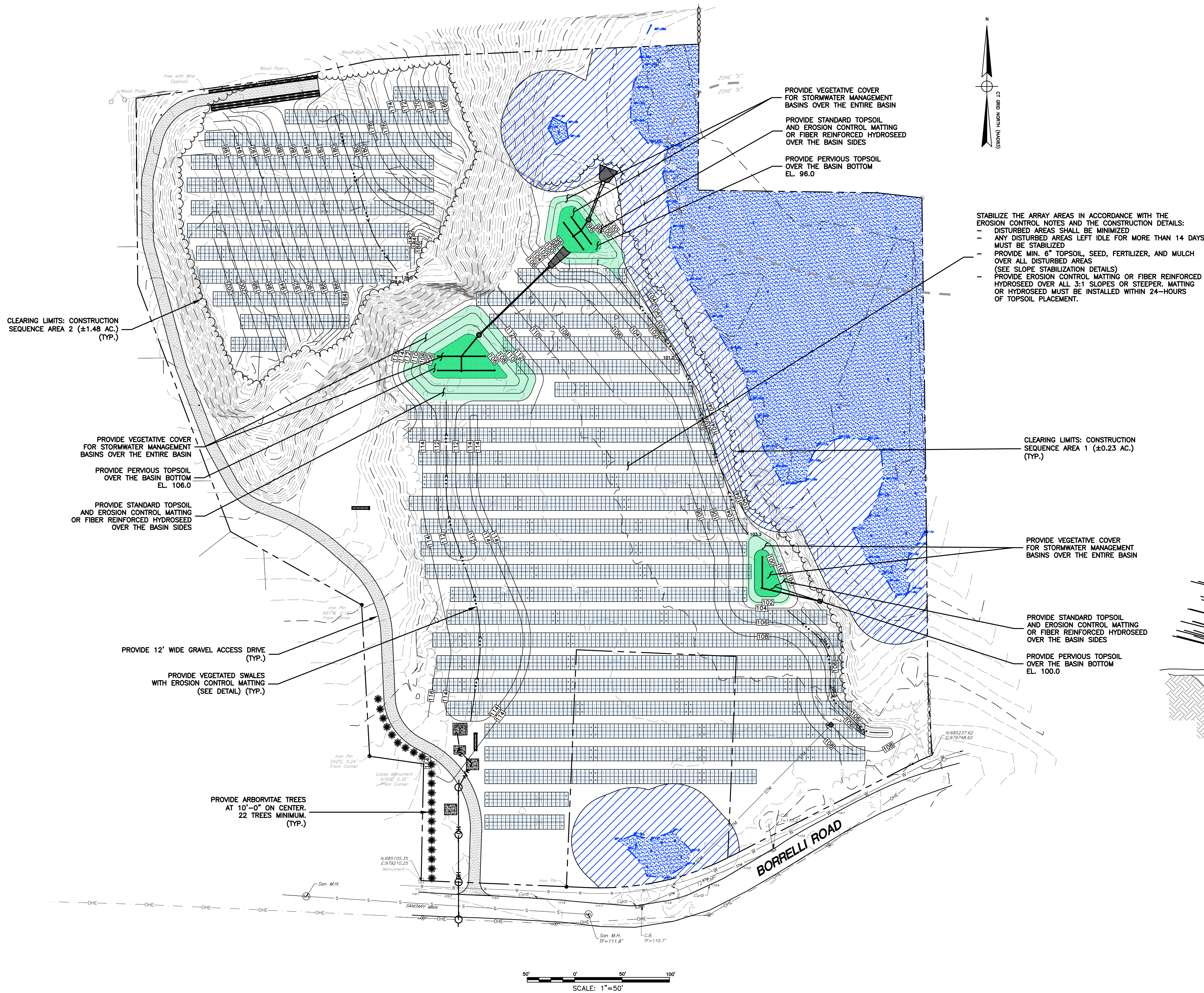
**Borrelli Road Solar**  
179-197 Borrelli Road  
East Haven, CT 06512

Stormwater Management Basin Plans

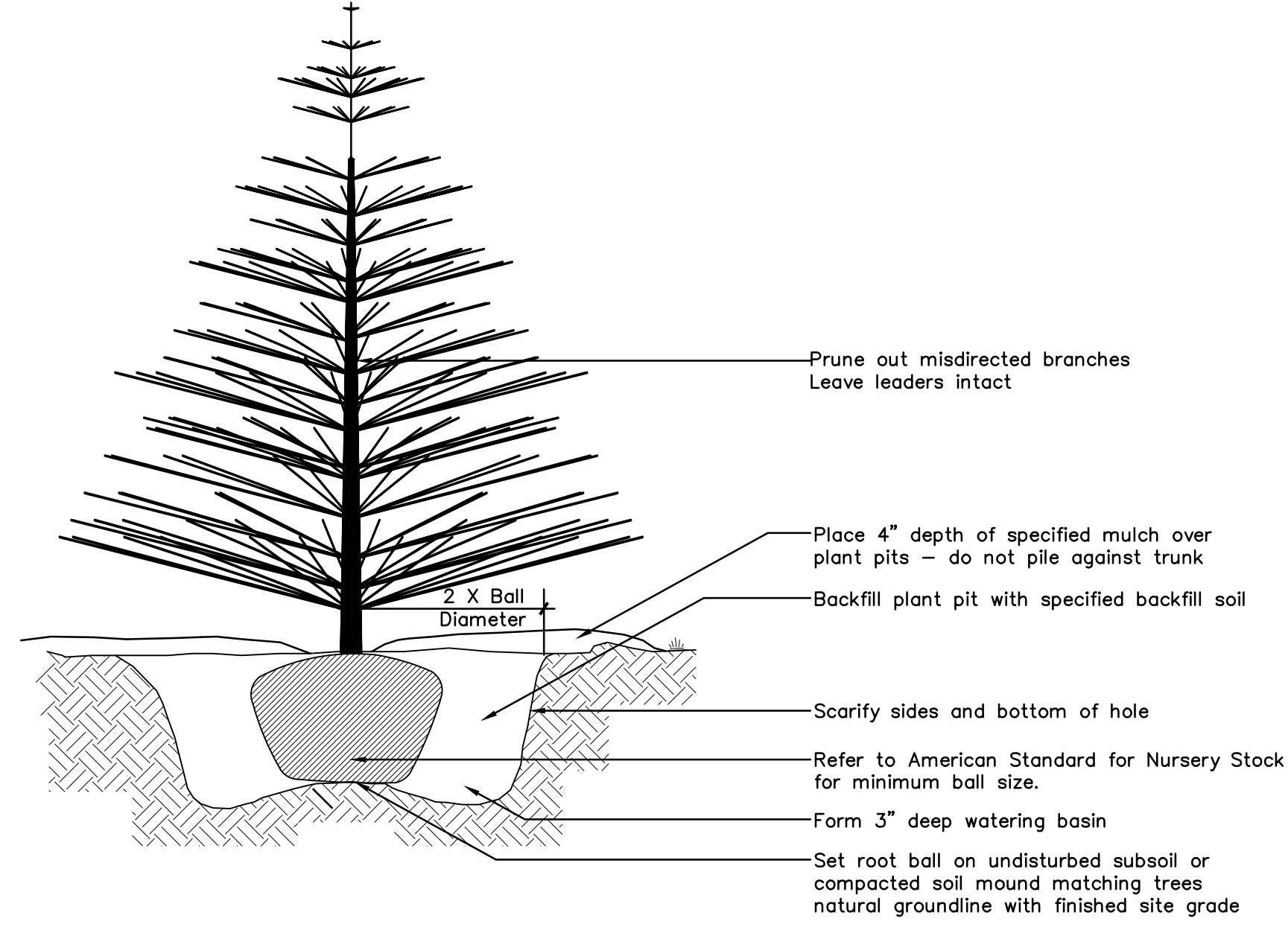
Project No. CLA-7629  
Proj. Engineer K.J.H.  
Date: 1/26/2024  
Sheet No. **5**

M:\1000\7620\7629 Borrelli Road Solar - East Haven\Drawings\CLA-7629 Borrelli Solar - Sheet 02-05 Site Plan\_R5.dwg

CLA




- STABILIZE THE ARRAY AREAS IN ACCORDANCE WITH THE EROSION CONTROL NOTES AND THE CONSTRUCTION DETAILS:
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  - PROVIDE EROSION CONTROL MATTING OR FIBER REINFORCED HYDROSEED OVER ALL 3:1 SLOPES OR STEEPER. MATTING OR HYDROSEED MUST BE INSTALLED WITHIN 24-HOURS OF TOPSOIL PLACEMENT.



TYPICAL ARBORVITAE PLANTING DETAIL  
NOT TO SCALE

No.	DATE	REVISION
5	12/6/2024	Clearing Limits / Misc. Revisions
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1	2/23/2024	Misc. Additions & Revisions



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**Borrelli Road Solar**  
179-197 Borrelli Road  
East Haven, CT 06512

Landscaping Plan

Project No.  
CLA-7629

Proj. Engineer  
K.J.H.

Date:  
1/28/2024

Sheet No.  
**6**



KOP 4 - NORTHWEST CORNER OF SITE LOOKING SOUTH



KOP 5 - WEST SIDE OF SITE LOOKING NORTHEAST



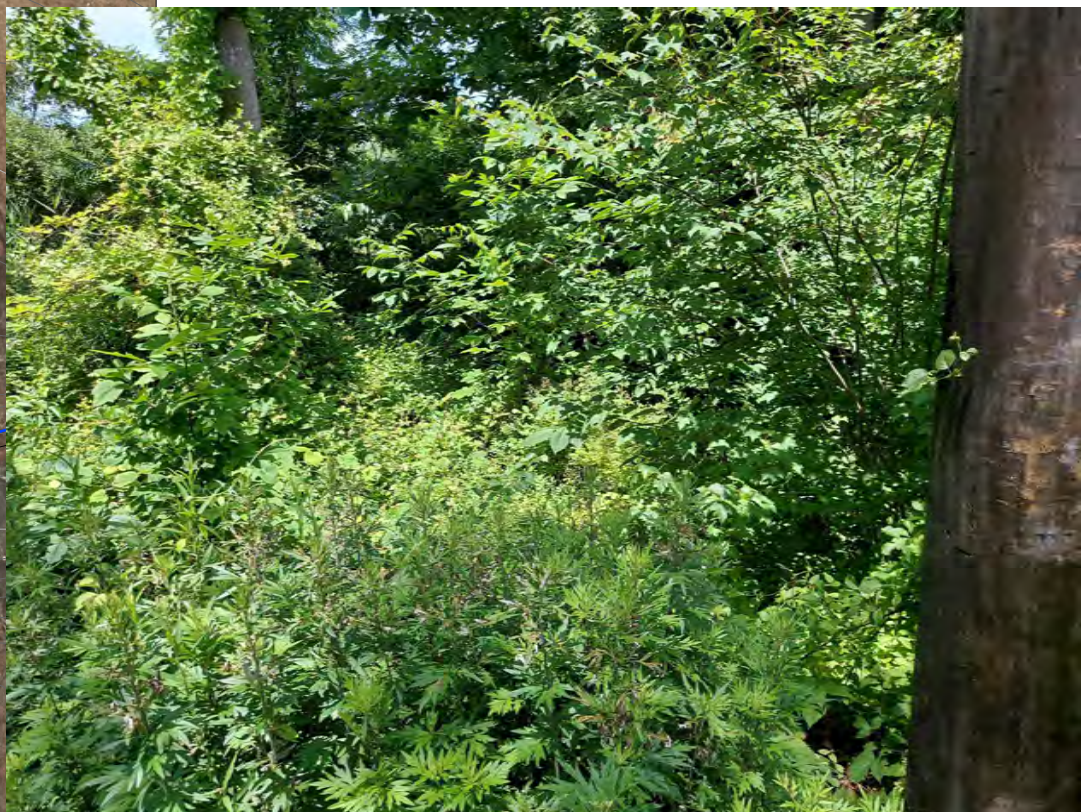
KOP 6 - SOUTHWEST CORNER OF SITE LOOKING NORTH



KOP 3 - NORTHERN SIDE OF SITE LOOKING NORTHEAST



KOP 2 - EAST SIDE OF SITE LOOKING SOUTHWEST

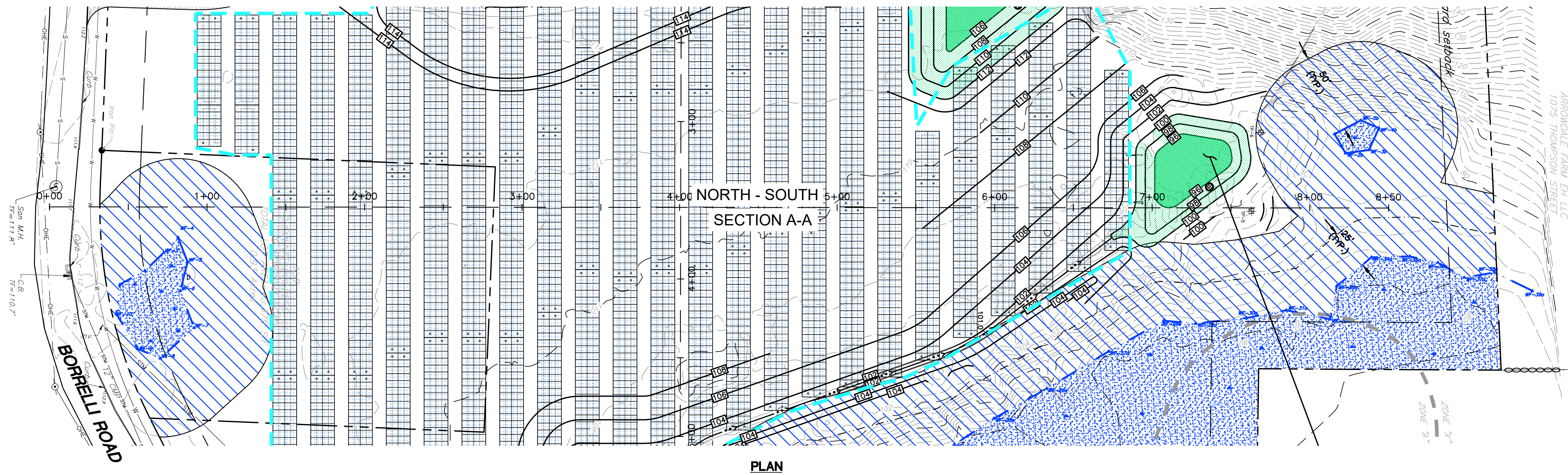


KOP 1 - NORTH OF BORRELLI ROAD LOOKING NORTHWEST INTO SITE

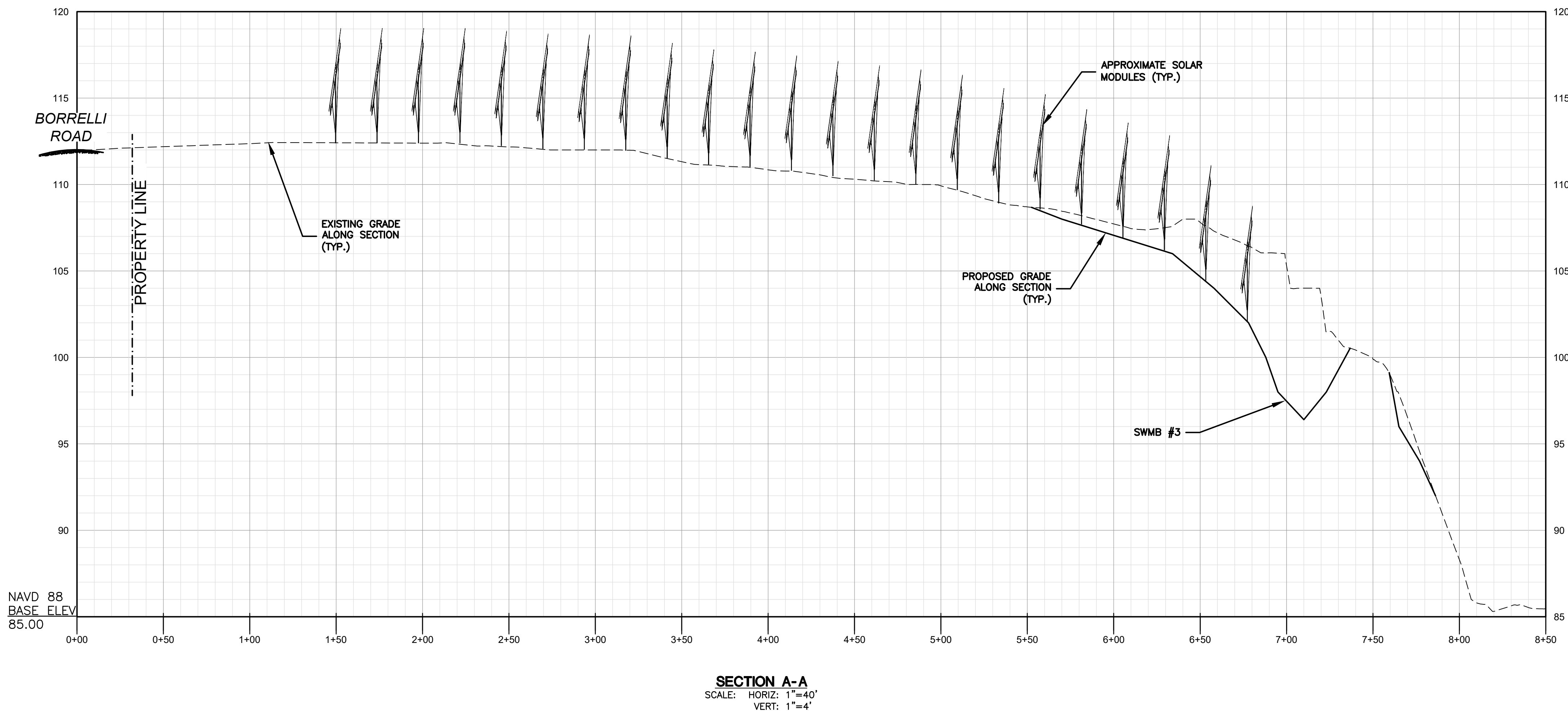
REVISION LOG:

10/31/2024	- IFP

\\170001762076209 Borrelli Road Solar - East Haven\Drawings\CLA-7629 Borrelli Solar - Sheet 07 of 09 Cross Section.dwg



SCALE: 1"=40'



SECTION A-A  
SCALE: HORIZ: 1"=40'  
VERT: 1"=4'

No.	DATE	REVISION
4	11/27/2024	Clearing Limits / Plantings
3	10/31/2024	Misc. Additions & Revisions
2	2/29/2024	Misc. Additions & Revisions
1	2/23/2024	Misc. Additions & Revisions

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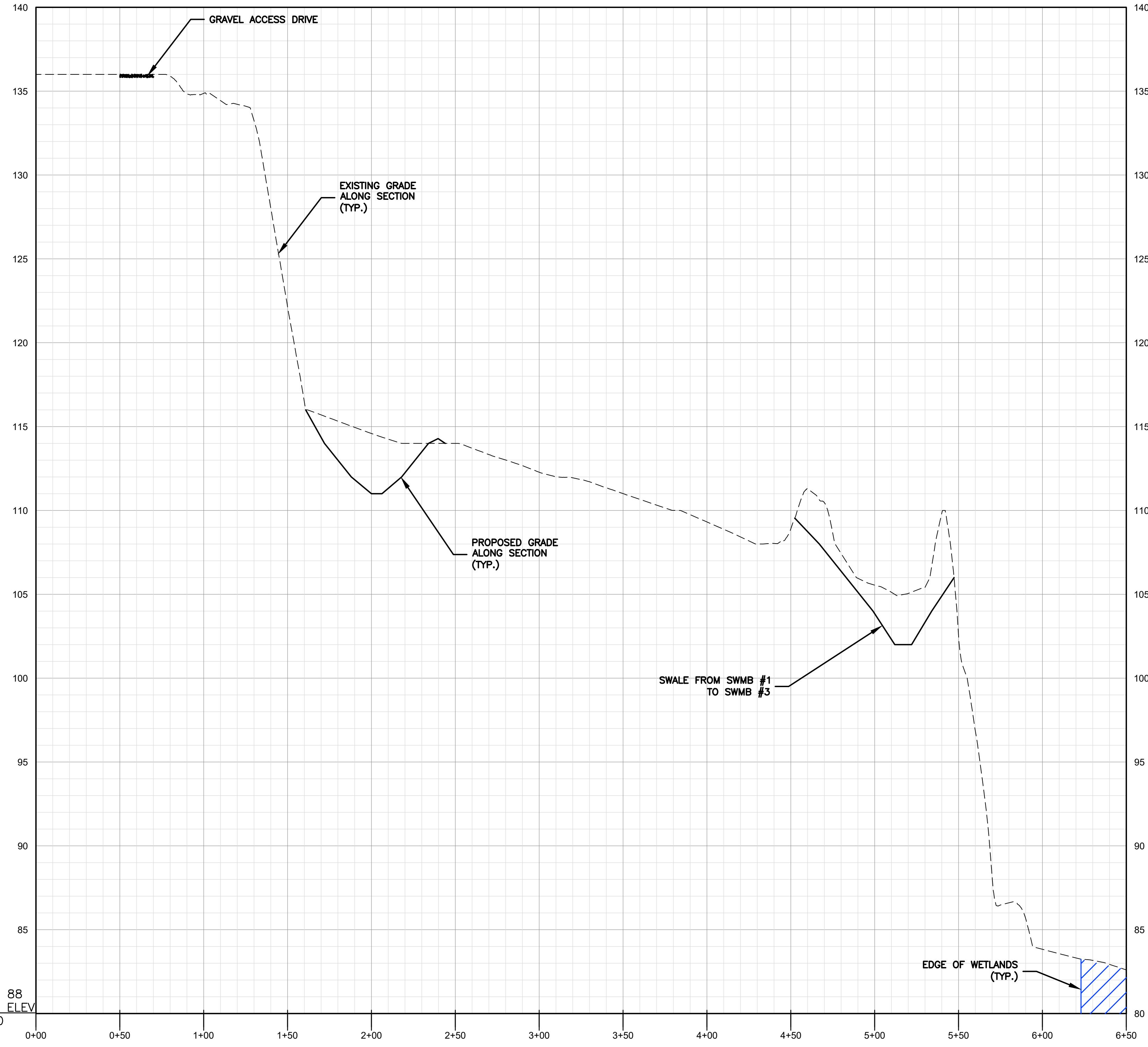
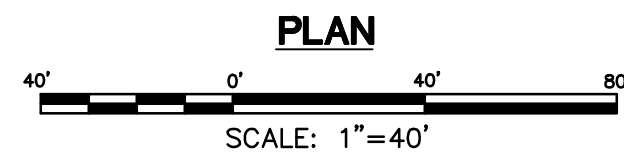
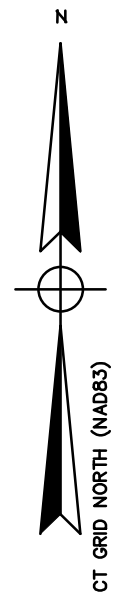
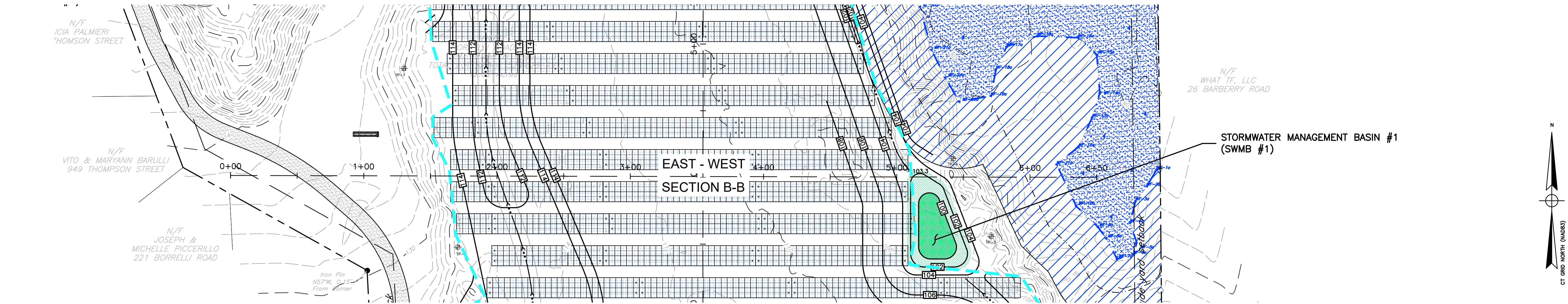
Cross Section View:  
North - South Section A-A

Project No.  
CLA-7629

Proj. Engineer  
K.J.H.

Date:  
1/26/2024

Sheet No.  
**7**



**SECTION B-B**  
SCALE: HORIZ: 1"=40'  
VERT: 1"=4'

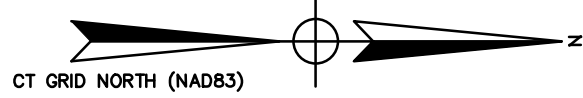
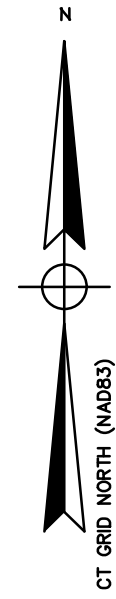
NAVD 88  
BASE ELEV  
80.00

**CLA**

		<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING	
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		<b>Borreli Road Solar</b> 179-197 Borrelli Road East Haven, CT 06512	
		Cross Section View: East - West Section B-B	
		Project No. CLA-7629	
		Proj. Engineer K.J.H.	
		Date: 1/26/2024	
		Sheet No. <b>8</b>	

No.	DATE	REVISION
4	11/27/2024	Clearing Limits / Plantings
3	10/31/2024	Misc. Additions & Revisions
2	2/29/2024	Misc. Additions & Revisions
1	2/23/2024	Misc. Additions & Revisions

Professional Engineer

9

EROSION & SEDIMENTATION CONTROL NARRATIVE

CONTACT:  
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THE PURPOSE OF THIS PROJECT IS TO INSTALL SOLAR MODULES AND ASSOCIATED ELECTRICAL EQUIPMENT FOR POWER GENERATION.

THE TOTAL AREA OF THE PROJECT SITE IS APPROXIMATELY 12.95 ACRES AND THE TOTAL AREA OF THE SITE THAT IS EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 10.7 ACRES.

THE EROSION & SEDIMENTATION CONTROL PLAN AND DETAILS HAVE BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" EFFECTIVE MARCH 30, 2024 BY THE COUNCIL ON SOIL AND WATER CONSERVATION IN COLLABORATION WITH CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

IN THE AREAS OF SOLAR PANEL INSTALLATION, THERE ARE SEVERAL ACTIVITIES (SITE GRADING, FOOTING INSTALLATION, PANEL INSTALLATION, AND ELECTRICAL TRENCH WORK) THAT WILL DISTURB SOIL. SOIL MUST BE PROMPTLY STABILIZED AFTER EACH ACTIVITY.

THIS PROJECT WILL NOT BE PHASED. THE DEVELOPMENT WILL FOLLOW THE CONSTRUCTION SEQUENCE PROVIDED ON THIS PLAN.

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL MEASURES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE SILT FENCE, HAY BALES, EROSION MAT, STONE CHECK DAMS, A CONSTRUCTION ENTRANCE, AND/OR OTHER EROSION CONTROL MEASURES AS NEEDED OR DIRECTED BY THE ENGINEER OR TOWN STAFF TO ADEQUATELY PREVENT SEDIMENT TRANSPORT.

EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE.

THE CONTRACTOR SHALL INSPECT, REPAIR AND/OR REPLACE EROSION CONTROL MEASURES EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT. SEDIMENT DEPOSITS MUST BE REMOVED BEFORE DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.

STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. TEMPORARY VEGETATIVE COVER MAY BE REQUIRED (SEE NOTE).

CONTINUOUS DUST CONTROL USING WATER OR APPROVED EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS, SURFACES OF BACKFILLED TRENCHES AND GRAVELED ROADWAY SURFACES. THE USE OF CALCIUM CHLORIDE FOR DUST CONTROL SHALL NOT BE ALLOWED.

IF DEWATERING IS NECESSARY DURING ANY TIME OF CONSTRUCTION A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS SHOWN IN THE HAY-BALE BARRIER DEWATERING DETAIL OR ALTERNATE METHOD PROPOSED BY THE CONTRACTOR AND APPROVED BY THE OWNER AND ENGINEER.

ALL DISTURBED AREAS SHALL BE RESTORED PER THE SLOPE STABILIZATION AND PERMANENT VEGETATION DETAILS. ALL DISTURBED AREAS THAT ARE SLOPED LESS THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) SLOPE SHALL BE LOAMED, SEEDED, FERTILIZED AND MULCHED PER THE PERMANENT VEGETATIVE COVER SPECIFICATIONS. EROSION CONTROL MATTING OR HYDROSEED SHALL BE PROVIDED ON ALL DISTURBED AREAS THAT ARE SLOPED THREE HORIZONTAL TO ONE VERTICAL (3:1) OR MORE.

IF FINAL SEEDING OF DISTURBED AREAS IS NOT TO BE COMPLETED BEFORE OCTOBER 15, THE CONTRACTOR SHALL PROVIDE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING.

WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISHED GRADED SHALL BE COMPLETED PRIOR TO OCTOBER 15.

ON EACH FRIDAY AND ALSO ON THE DAY BEFORE ANY RAIN FORECAST OF 0.5 INCHES OR MORE, THE CONTRACTOR SHALL HAY MULCH ALL EXPOSED SOIL.

ANY EROSION WHICH OCCURS WITHIN THE DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED DURING THE CONSTRUCTION PHASE. INTERCEPTED SEDIMENT SHALL BE RETURNED TO THE SITE. POST SEEDING, INTERCEPTED SEDIMENT, IF ANY, SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE TOWN AND ENGINEER.

EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED OR SLOPES ARE STABILIZED AND REMOVAL IS APPROVED BY THE ENGINEER.

UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" EFFECTIVE MARCH 30, 2024 BY THE COUNCIL ON SOIL AND WATER CONSERVATION IN COLLABORATION WITH CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

THE CONTRACTOR SHALL PROVIDE THE NAME AND EMERGENCY CONTACT INFORMATION FOR THE PROJECT PERSONNEL RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS PRIOR TO THE START OF CONSTRUCTION.

THE OWNER WILL EMPLOY A CERTIFIED SOIL SCIENTIST TO PERFORM WEEKLY EROSION & SEDIMENTATION CONTROL INSPECTION.  
A. ROUTINE REPAIRS OR MODIFICATIONS SHALL BE COMPLETED BY THE CONTRACTOR WITHIN 48 HOURS AFTER DIRECTION BY THE INSPECTOR.  
B. EMERGENCY REPAIRS SHALL BE COMPLETED IMMEDIATELY UPON DIRECTION BY THE INSPECTOR.

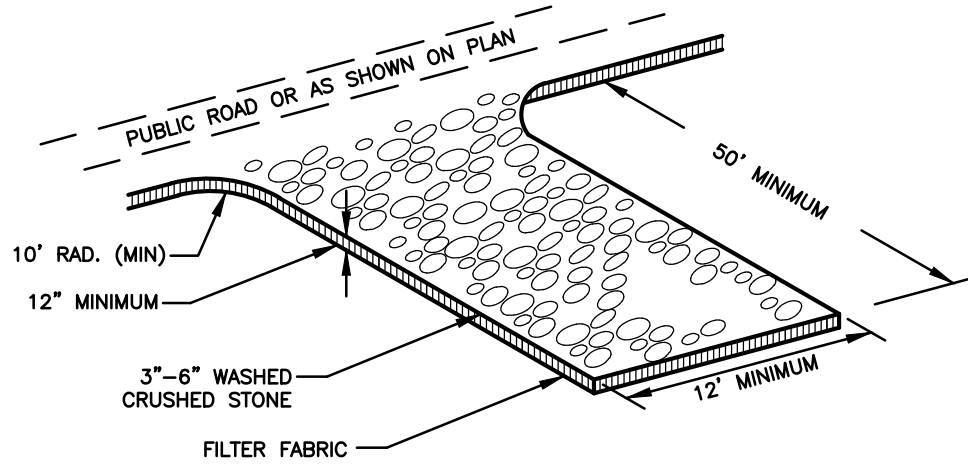
THE WETLANDS ENFORCEMENT OFFICER SHALL BE NOTIFIED AT LEAST 2 BUSINESS DAYS PRIOR TO CONSTRUCTION TO INSPECT EROSION CONTROLS.

STATE AND FEDERAL PERMITS REQUIRED: THIS PROJECT REQUIRES A PERMIT FROM THE STATE OF CONNECTICUT SITING COUNCIL.

THE FOLLOWING DOCUMENTS ARE CONSIDERED TO BE PART OF THIS EROSION AND SEDIMENTATION CONTROL PLAN: THE COMPLETE SITE PLANS, THE STORMWATER MANAGEMENT PLAN PREPARED BY CLA ENGINEERS, AND THE CTDEP 2024 MANUAL.

NOTE: THE CONTRACTOR SHALL CONTINUALLY STORE THE FOLLOWING MATERIALS ONSITE DURING CONSTRUCTION TO MEET UNEXPECTED EROSION NEEDS

- \* 100 LF OF SILT FENCE
- \* 10 HAY BALES
- \* WOOD CHIPS OR CRUSHED STONE



- NOTES:
- ROCK CONSTRUCTION ENTRANCE SHOULD BE A MINIMUM THICKNESS OF 1.0' AND CONTAIN MAXIMUM SIDE SLOPES OF 4:1.
  - ROCK ENTRANCE SHOULD BE INSPECTED AND MAINTAINED REGULARLY. ROCK ENTRANCE LENGTH MAY NEED TO BE EXTENDED IN CLAY SOILS.

ANTI-TRACKING CONSTRUCTION ENTRANCE DETAIL  
NOT TO SCALE

STORMWATER MANAGEMENT & POLLUTION PREVENTION PLAN

DURING CONSTRUCTION

- POLLUTION PREVENTION TEAM:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THE PROVISIONS OF THIS PLAN.
- SWEEPING:**  
PAVED SURFACES, SIDEWALKS AND OTHER IMPERVIOUS SURFACES BEYOND THE WORK SITE SHALL BE SWEEPED CLEAN OF SAND, SILT AND LITTER DAILY AT THE END OF THE WORK DAY.
- OUTSIDE STORAGE:**  
ACCESSORIES OR EQUIPMENT STORED OUTSIDE SHALL BE COVERED OR MAINTAINED TO MINIMIZE POSSIBILITY OF THESE MATERIALS OR THEIR RESIDUE PASSING TO STORM WATER.
- WASHING:**  
NO WASHING OF VEHICLES, ACCESSORIES, EQUIPMENT, OR APPLIANCES IN WORK SITE.
- MAINTENANCE AND INSPECTION:**
  - THE CONTRACTOR SHALL INSPECT, REPAIR AND/OR REPLACE EROSION CONTROL MEASURES EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY RAINFALL OF ½" OR MORE OR SIGNIFICANT SNOW MELT.
  - SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
  - DAILY DUST CONTROL USING WATER, OR APPROVED EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS, SURFACES OF BACKFILLED TRENCHES AND GRAVELED SURFACES.
- SPILLS OR ACCIDENTAL DISCHARGES:**
  - COMPLY WITH STATE AND FEDERAL REGULATIONS TO CONTAIN AND CLEAN UP ANY SPILL OR DISCHARGE AND DISPOSE OF MATERIALS AT AN APPROVED FACILITY.
  - CONTACT CONNECTICUT DEEP OIL AND CHEMICAL SPILL RESPONSE DIVISION (860) 424-3338
  - THE FOLLOWING STEPS SHOULD BE PERFORMED AS SOON AS POSSIBLE:
    - STOP THE SOURCE OF THE SPILL
    - CONTAIN THE SPILL
    - COVER SPILL WITH ABSORBENT MATERIAL SUCH AS KITTY LITER, SAWDUST OR OIL ABSORBENT PADS. DO NOT USE STRAW.
    - DISPOSE OF ABSORBER IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.

POST CONSTRUCTION

- POLLUTION PREVENTION TEAM:**  
THE OWNERS SHALL BE RESPONSIBLE FOR CARRYING OUT THE PROVISIONS OF THIS PLAN.
- OUTSIDE STORAGE:**  
ACCESSORIES OR EQUIPMENT STORED OUTSIDE SHALL BE COVERED OR MAINTAINED TO MINIMIZE POSSIBILITY OF THESE MATERIALS OR THEIR RESIDUE PASSING TO STORM WATER.
- WASHING:**  
NO WASHING OF VEHICLES, ACCESSORIES, EQUIPMENT OR APPLIANCES ON IMPERVIOUS AREAS.
- MAINTENANCE AND INSPECTION:**
  - MONTHLY INSPECTION OF STORM WATER STRUCTURES AND OUTFALLS.
  - CLEAN SEDIMENT AND DEBRIS FROM OUTLET STRUCTURES OUTFALLS AT LEAST ONCE PER YEAR DURING APRIL.
  - STORMWATER MANAGEMENT BASINS AND SWALES:**  
SEE OPERATIONS AND MAINTENANCE TABLES
- SPILLS OR ACCIDENTAL DISCHARGES:**
  - COMPLY WITH STATE AND FEDERAL REGULATIONS TO CONTAIN AND CLEAN UP ANY SPILL OR DISCHARGE AND DISPOSE OF MATERIALS AT AN APPROVED FACILITY.
  - CONTACT CONNECTICUT DEEP OIL AND CHEMICAL SPILL RESPONSE DIVISION (860) 424-3338
  - THE FOLLOWING SHOULD BE PERFORMED AS SOON AS POSSIBLE:
    - STOP THE SOURCE OF THE SPILL
    - CONTAIN THE SPILL
    - COVER SPILL WITH ABSORBENT MATERIAL SUCH AS KITTY LITER, SAWDUST OR OIL ABSORBENT PADS. DO NOT USE STRAW.
    - DISPOSE OF ABSORBER IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.

STORMWATER SYSTEM OPERATIONS & MAINTENANCE

Maintenance Schedule for Stormwater Management Basins & Swales		
Activity	Schedule	
<ul style="list-style-type: none"><li>Prior to new spring growth reaching a height of 2" (e.g., shortly after forsythia or redbud blooms), trim any material standing from the previous year close to the ground (approximately 2"). This will allow the soil to warm more quickly, which will stimulate the emergence and growth of native seedlings and reduce the likelihood of the meadow being invaded by shrubs.</li><li>Problem weeds should be hand pulled or spot sprayed with an approved herbicide, such as Rodeo® or Garlon® 3A. If you did not plant vines or spiny plants as part of your mix, be vigilant about controlling them. These are more easily pulled when they are young rather than after they have had two to three months of growth. Examples include bindweed, blackberry, multiflora rose, mile-a-minute and Japanese hops. Be equally vigilant about controlling other invasive species, such as autumn olive and Japanese knotweed.</li><li><b>Special Circumstances</b> If you notice a heavy infestation of ragweed or foxtail in the second growing season, trim the meadow to a height of 8". Trimming should cease by mid-September.</li></ul>	Second growing season	
<ul style="list-style-type: none"><li>For the basin and side slopes, inspect for invasive vegetation. Grassy weeds or persistent perennials can re-establish in these soils. Monitor and control weeds by hand pulling or spot spraying.</li></ul>	Monthly	
<ul style="list-style-type: none"><li>Inspect for damage, undercut, or eroded area</li><li>Monitor for sediment accumulation</li><li>Repair undercut or eroded areas</li></ul>	Semi-Annual inspection	
<ul style="list-style-type: none"><li>Clean and remove debris &amp; sediment from inlet and outlet structures</li><li>Inspect and clean debris &amp; sediment in the basin</li><li>Clean and remove debris from the plunge pools</li><li>Mow side slopes. Close mowing throughout the regular growing season or extensive chemical use is not conducive to water quality improvement and wildlife habitat. Spring mowed vegetation can typically remain within basins providing cover for new emerging vegetation.</li></ul>	As needed maintenance	
	Semi-annual	

TEMPORARY SEDIMENT TRAP NARRATIVE

THE STORMWATER MANAGEMENT BASINS ARE LOCATED AT THE LOW POINTS IN THE DEVELOPED PORTION OF THE SITE TOPOGRAPHY AND A PORTION WILL BE USED DURING CONSTRUCTION AS A TEMPORARY SEDIMENT TRAPS. THE TRAPS WILL BE EXCAVATED PRIOR TO THE COMMENCEMENT OF OTHER SITE GRADING. THE BERM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DETAILS AND ARMED WITH MODIFIED RIP RAP AS NEEDED.

- THE TRAPS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS AFTER ANY RAINFALL OF 0.5 INCHES OR GREATER.
- THE SEDIMENT TRAPS SHALL BE CLEANED WHEN SEDIMENT ACCUMULATION EXCEEDS ONE HALF OF THE AVAILABLE WET STORAGE CAPACITY. SEDIMENTS REMOVED FROM THE SEDIMENT TRAPS WILL BE PLACED OUTSIDE OF THE TRAP IN THE DESIGNATED STOCKPILE AREA.
- PRIOR TO COMPLETING THE BASIN CONSTRUCTION, EXISTING SEDIMENT LOCATED IN THE BASIN BOTTOM IS TO BE REMOVED AND THE BASIN EXCAVATED TO A DEPTH OF 12" BELOW FINISHED GRADE. IMMEDIATELY FOLLOWING THE GRADING, AND PIPING INSTALLATIONS THE PERVIOUS TOPSOIL AND SWMB SEED MIX SHALL BE INSTALLED.
- REMOVE RIP RAP ARMORING AND INSTALL TOPSOIL AND SEED MIX OVER ALL DISTURBED AREAS. EROSION CONTROL MATTING, BFM HYDROSEED, OR FGM HYDROSEED SHALL BE INSTALLED ON ALL OF THE BASIN SIDE SLOPES. AFTER VEGETATION HAS BEEN ESTABLISHED ON THE BASIN BOTTOM AND SIDE SLOPES EROSION CONTROL MEASURES MAY BE REMOVED.

TEMPORARY VEGETATIVE COVER

A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL IN THE STOCKPILES HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. AND SEED IS APPLIED AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW, FREE FROM WEEDS AND COARSE MATTER SHALL BE USED AT A RATE OF 70-90 LBS. PER 1000 S.F. AS A TEMPORARY MULCH. APPLY MULCH AND DRIVE TRACKED EQUIPMENT UP AND DOWN SLOPE OVER ENTIRE SURFACE SO CLEAR MARKS ARE PARALLEL TO THE CONTOURS.

PERMANENT VEGETATIVE COVER

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATIONS HAVE BEEN COMPLETED AND THE SLOPES ARE GRADED AS SHOWN ON THE PLANS. PROVIDE SLOPE PROTECTION AS CALLED FOR ON THE PLANS AND DETAILS. TOPSOIL SHALL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS.

- APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F.
- APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER S.F.
- WORK LIMESTONE AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4 INCHES.
- INSPECT SEEDBED BEFORE SEEDING.
- IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS.
- APPLY THE FOLLOWING GRASS SEED MIX:

SEED MIXTURE

2:1 SLOPES OR GREATER	LBS./ACRE	LBS./1000 S.F.
DEP SEED MIX NO. 3:		
CREeping RED FESCUE (PENNLAWN, WINTERGREEN)	20	0.45
BIRD'S FOOT TREFOIL (EMPIRE, VIKING) W/ INOCULANT	8	0.20
TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	0.45
	45	1.00
REMAINDER OF DISTURBED AREAS	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	75	1.72
CREeping RED FESCUE	75	1.72
PERENNIAL RYEGRASS	25	0.58
	175	4.00

THE RECOMMENDED SEEDING DATES ARE:  
APRIL 1 - JUNE 15 AND AUGUST 15 - OCTOBER 15

IMMEDIATELY FOLLOWING SEEDING, FIRM SEED BED WITH A ROLLER AND MULCH WITH WEED FREE STRAW. IF PERMANENT VEGETATIVE COVER IS HAS NOT BEEN ESTABLISHED BY SEPTEMBER 30, APPLY A TEMPORARY VEGETATIVE COVER ON THE TOPSOIL.

VEGETATIVE COVER FOR STORMWATER MANAGEMENT BASINS

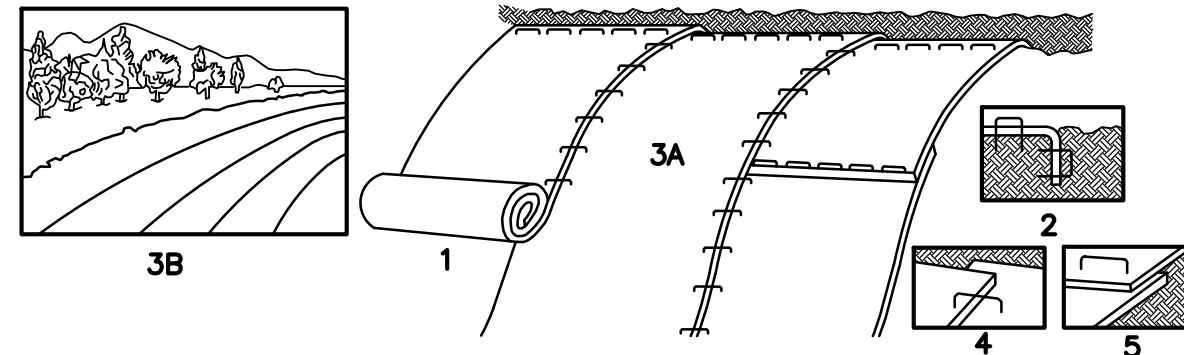
SEED MIXTURE FOR SETTLING BASINS SHALL BE THE "NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR MOIST SITES" FROM NEW ENGLAND WETLAND PLANTS, AMHERST, MA, TELEPHONE NO. 413-548-8000

THE BEST RESULTS ARE OBTAINED WITH A SPRING SEEDING. SUMMER AND FALL SEEDING REQUIRE A LIGHT MULCHING OF WEED FREE STRAW TO CONSERVE MOISTURE. LATE FALL AND WINTER DORMANT SEEDING REQUIRE A 10% INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE.

RAIN GARDEN SEED MIXTURE

	LBS./ACRE	LBS./1000 S.F.
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES	35	0.80

SPECIES: Virginia Wild Rye, (*Elymus virginicus*), Creeping Red Fescue, (*Festuca rubra*), Little Bluestem, (*Schizachyrium scoparium*), Big Bluestem, (*Andropogon gerardii*), Fox Sedge, (*Carex vulpinoidea*), Switch Grass, (*Panicum virgatum*), Rough Bentgrass, (*Agrostis scabra*), New England Aster, (*Aster novae-angliae*), Boneset, (*Eupatorium perfoliatum*), Grass Leaved Goldenrod, (*Euthamia graminifolia*), Green Bulrush, (*Scirpus atrovirens*), Blue Vervain, (*Verbena hastata*), Soft Rush, (*Juncus effusus*), Wool Grass, (*Scirpus cyperinus*)



INSTALLATION NOTES:

- PROVIDE 4" THICKNESS OF TOPSOIL OVER CLEAN FILL. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME.
- FERTILIZER AND SEED MIX PER PERMANENT VEGETATIVE COVER NOTES. (SHALL BE PAID FOR AT THE UNIT PRICE FOR LOAM, SEED, FERTILIZE & MULCH)
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STARTING.
- ROLL THE BLANKET (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
- WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

PRODUCT NOTES:

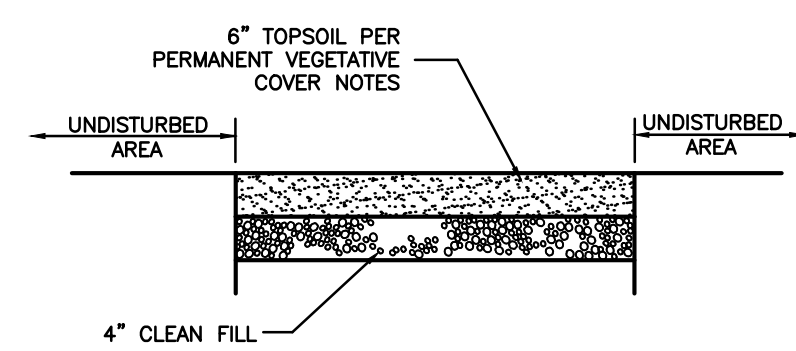
- EROSION CONTROL MATTING MUST BE LISTED ON THE LATEST CT DOT QUALIFIED PRODUCTS LIST UNDER CLASS 1: EROSION PROTECTION, TYPE A.

EROSION CONTROL MATTING DETAIL  
(FOR 3:1 SLOPES OR STEEPER)

NOTES:

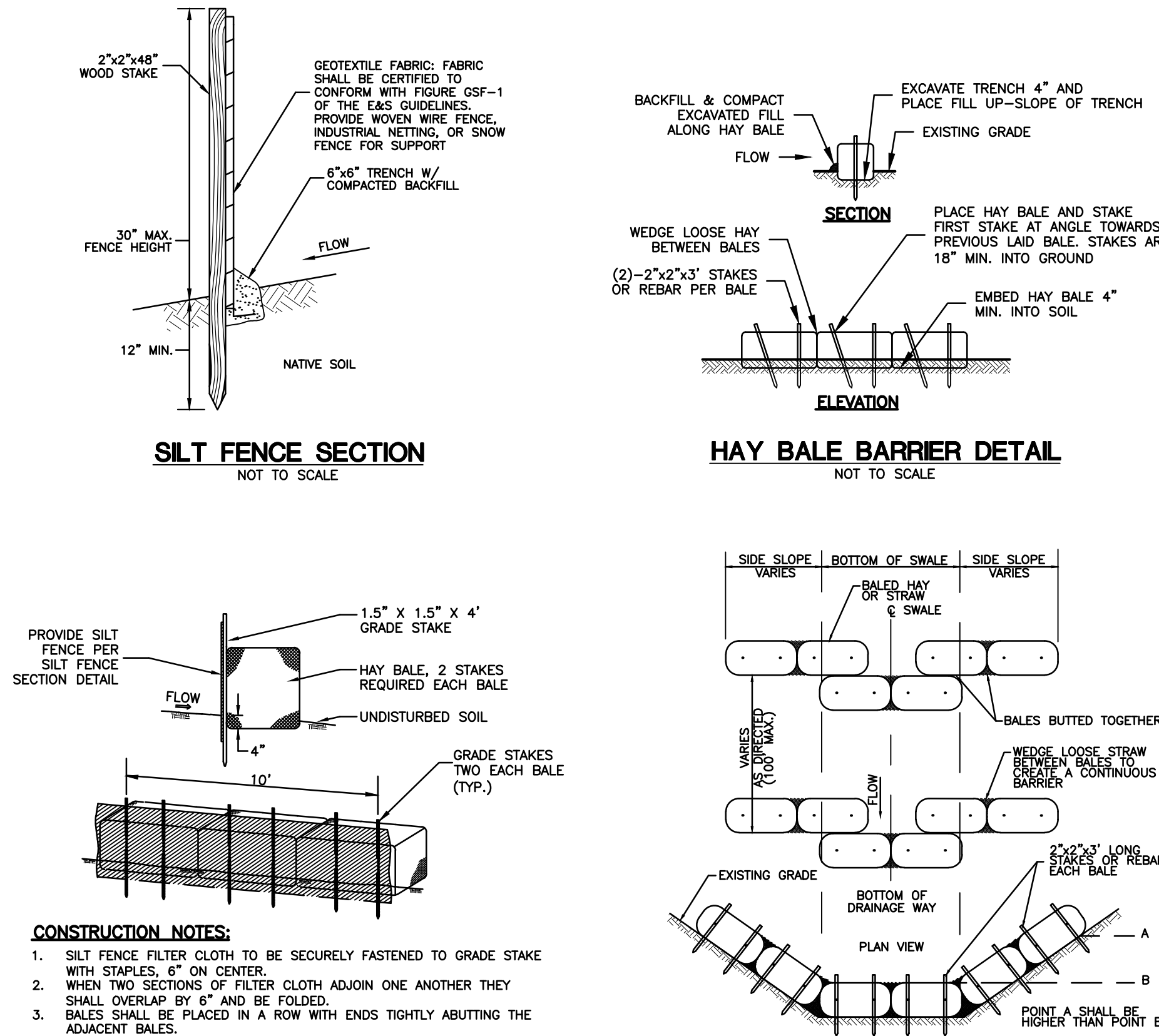
- HYDROSEED SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 9.50.3.b OF DOT FORM 818.
- BONDED FIBER MATRIX (BFM) OR FLEXIBLE GROWTH MEDIUM (FGM) MUST BE INCLUDED IN THE HYDROSEED SLURRY. MIX RATE PERCENTAGES SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS FOR THE FINISHED SLOPES. THE FOLLOWING ARE ACCEPTABLE PRODUCTS:
  - PROFILE FLEXTERRA FGM
  - PROFILE HYDRO-BLANKET BONDED FIBER MATRIX
  - MAT, INC. SOIL GUARD BONDED FIBER MATRIX
  - NORTH AMERICAN GREEN HYDRA GT OR HYDRA CM
- THE REQUIRED SEED MIX SHALL BE IN ACCORDANCE WITH THE PERMANENT VEGETATIVE COVER NOTES. ALL APPLICATION RATES SHALL BE INCREASED BY 10% FOR HYDROSEEDING.
- THE CONTRACTOR SHALL ENSURE 100% COVERAGE OF THE DISTURBED SOIL.

HYDROSEED REQUIREMENTS  
(FOR 3:1 SLOPES OR STEEPER)



TYPICAL LOAM & SEED SECTION DETAIL  
(FOR ALL DISTURBED AREAS)

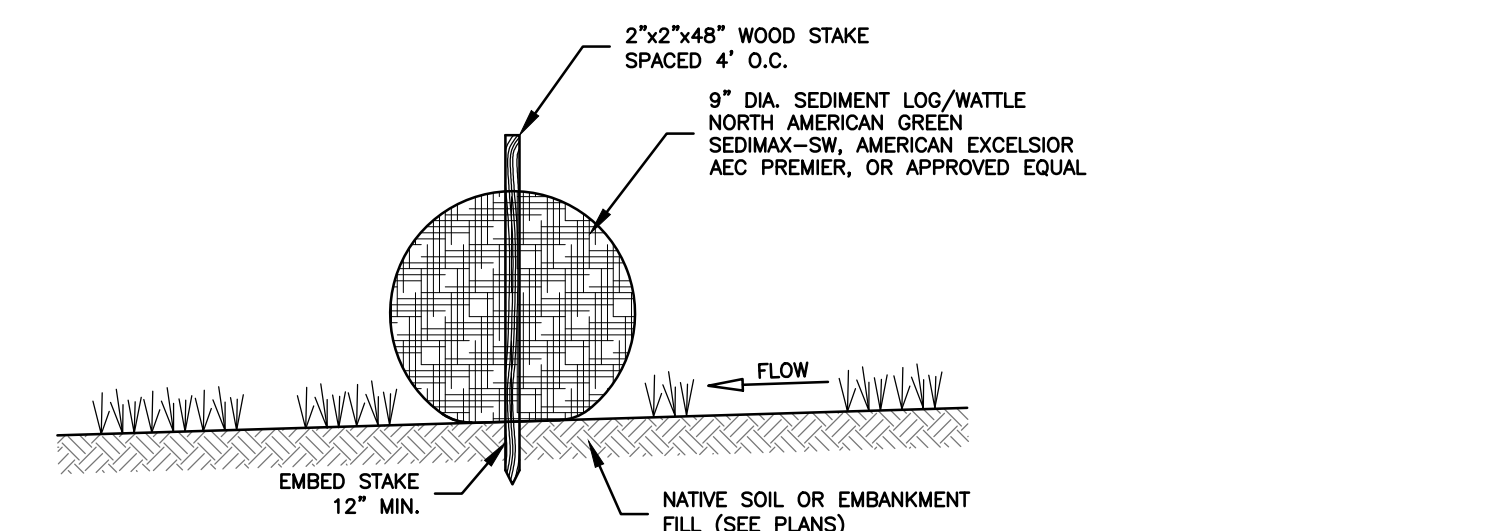
SLOPE STABILIZATION DETAILS  
NOT TO SCALE



CONSTRUCTION NOTES:

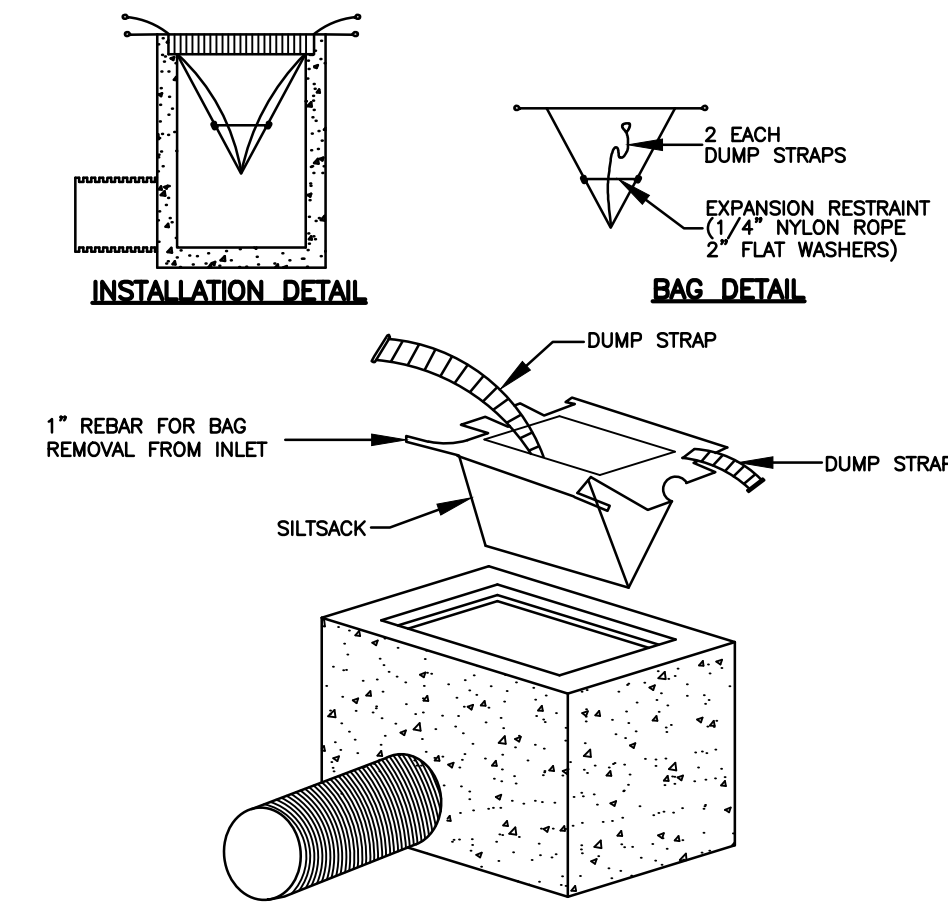
- SILT FENCE FILTER CLOTH TO BE SECURELY FASTENED TO GRADE STAKE WITH STAPLES, 6\"/>
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN ANOTHER THEY SHALL OVERLAP BY 6\"/>
- BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

SILT FENCE BACKED BY HAY BALES DETAIL  
NOT TO SCALE



- NOTES:
- STORMWATER LOG ENDS SHALL BE TIED TOGETHER, OVERLAPPED AT LEAST 24\"/>

STORMWATER SEDIMENT LOG (WATTLE) DETAIL  
NOT TO SCALE



INLET SEDIMENT CONTROL DEVICE DETAIL  
NOT TO SCALE

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4 11/27/2024 No Changes to This Sheet		317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165	
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1 8/23/2024 Misc. Additions & Revisions		Erosion & Sedimentation Control and Stormwater Management Details	
No.	DATE	REVISION	Project No. CLA-7629 Proj. Engineer K.J.H. Date: 1/26/2024 Sheet No. <b>11</b>



ROAD DESIGN PARAMETERS

1. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY.

SPECIAL PROVISIONS FOR GRADING AND EROSION CONTROL

THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE STATE OF CONNECTICUT AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.

EXECUTION

1. CLEARING AND GRUBBING
- A. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE GRADING LIMITS SHOWN ON THE PLANS. THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED.
2. TOPSOIL STRIPPING
- A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS.
- B. ANY TOPSOIL, THAT HAS BEEN STRIPPED, SHALL BE RE-SPREAD OR STOCKPILED WITHIN GRADING AREAS AND/OR USED AS FILL OUTSIDE OF THE DISTURBANCE AREAS, AS DIRECTED BY THE ENGINEER.
3. EMBANKMENT CONSTRUCTION
- A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF TWO AND A HALF FEET HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED FROM THE ACCESS ROAD EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS), OR ANY SUITABLE, APPROVED SOIL OBTAINED OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 9".
- B. SIDE SLOPES GREATER THAN 2.5:1 WILL NOT BE PERMITTED, UNLESS OTHERWISE NOTED ON THE PLAN.

TESTING REQUIREMENTS:

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW.
- A. THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
3. PROOF ROLLING:
- A. PROOF-ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1.5 INCHES, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK.
4. SIEVE ANALYSIS:
- A. SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH AASHTO T27
5. PROCTOR:
- A. PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557
6. ATTERBERG LIMITS:
- A. ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T89 AND T90
7. MOISTURE DENSITY (NUCLEAR DENSITY):
- A. MOISTURE DENSITY TESTING SHALL BE DONE IN ACCORDANCE WITH AASHTO T310

SUBGRADE COMPACTION, TEST ROLLING AND AGGREGATE BASE COMPACTION:

1. FILL MATERIAL:
- A. SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS (MODIFIED DRY MAXIMUM DENSITY).
- a. FOR PLACED & COMPACTED FILLS, PROVIDE ONE COMPACTION TEST PER LIFT FOR EVERY 1000 FT OF ROAD LENGTH. INCLUDE THE LOCATION, DRY DENSITY, MOISTURE CONTENT, AND COMPACTION PERCENT BASED ON MODIFIED PROCTOR MAXIMUM DRY DENSITY.
- B. IN ROADWAY CUT AREAS, OR WHERE EMBANKMENT CONSTRUCTION REQUIRES LESS THAN 12 INCHES OF FILL PLACEMENT, COMPACT TO A MINIMUM OF 95 PERCENT OF THE MATERIAL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY.
2. COMPACTED SUBGRADE:
- A. THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE.
- B. IF PROOF ROLLING DETERMINES THAT THE SUBGRADE STABILIZATION CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATIVES WILL BE IMPLEMENTED:
- a. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH SUITABLE EMBANKMENT.
- b. SCARIFY, DRY, AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOF ROLL.
- c. INCREASE ROAD BASE THICKNESS.
- C. PROVIDE 1 MOISTURE DENSITY COMPACTION TESTS FOR EVERY 1000 L.F. OF ROAD LENGTH. COMPACTED SUBGRADE MUST BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY AT ±3% OF OPTIMUM MOISTURE CONTENT FOR GRANULAR SOILS AND AT -1 TO +3% OF OPTIMUM MOISTURE CONTENT FOR COHESIVE SOILS.
3. AGGREGATE BASE:
- A. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH. PROVIDE 1 SIEVE ANALYSIS PER 2500 CY OF ROAD BASE PLACED.
- a. IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL.

GENERAL NOTES:

1. THE PLANIMETRIC FEATURES, GROUND SURFACE CONTOURS ON A LIDAR SURFACE PROVIDED NOAA.
2. NO GRADING OR SOIL DISTURBANCE IS PERMITTED OUTSIDE OF THE GRADING LIMITS IDENTIFIED ON THE PLANS.
3. GRADE ALL PROPOSED ROADS TO THE SLOPES PROPOSED ON THE PLANS.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE SWALES CAUSING RAINWATER TO POND. ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY DIGSAFE AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
6. WETLAND INFORMATION SHOWN ON THE PLAN WAS PROVIDED BY GODFREY, HOFFMAN, AND LODGE, LLC AND FLAGGED BY MATHEW DAVISON. THE GENERAL CONTRACTOR SHALL VERIFY THAT ALL WETLAND PERMITS HAVE BEEN SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.
7. ELECTRICAL COLLECTION SYSTEM SHOWN ON THE PLAN SHALL BE CONSIDERED PRELIMINARY. CONTRACTOR SHALL REFER TO FINAL ELECTRICAL DESIGN PLANS FOR ACTUAL DESIGN LOCATIONS.

STORMWATER POLLUTION PREVENTION PLAN (SWPCP):

1. REFER TO THE SWPPP BOOKLET FOR SEDIMENT AND EROSION CONTROL PROCEDURES, LOCATIONS OF BMPs, DETAILS, AND INSPECTION INFORMATION.
2. ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP PLAN.
3. TEMPORARY EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TEMPORARY EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH STATE OF CONNECTICUT, THE EPA, AND THE SWPCP ON FILE.

SLOPE STABILIZATION:

ALL AREAS DESIGNATED ON THE PLAN FOR SLOPE STABILIZATION SHALL BE GRADED AND COMPACTED, SMOOTH AND CLEAN TO THE FINISH CONTOURS SHOWN ON THE PLAN, WITH A MINIMUM OF 4 INCHES OF TOPSOIL PLACED ON THE AREA. STABILIZATION SHALL BE ACHIEVED IN ONE OF TWO MANNERS:

- EITHER:
- 1) HAND-PLACED RIPRAP
- OR:
- 2) SEED WITH EROSION CONTROL AND REVEGETATION MAT (ECRM)

1. PLACEMENT OF RIP-RAP

RIPRAP HAND PLACED, HAND-PLACED RIPRAP SHALL CONSIST OF ROUGH UNHEWN QUARRY STONES, APPROXIMATELY RECTANGULAR, PLACED DIRECTLY ON THE SPECIFIED SLOPES OR SURFACES. IT SHALL BE SO LAID THAT THE WEIGHT OF THE LARGE STONES IS CARRIED BY THE SOIL RATHER THAN BY ADJACENT STONES. STONES SHALL WEIGH BETWEEN 50 AND 150 LB. EACH AND AT LEAST 60 % OF THEM SHALL WEIGH MORE THAN 100 LB. EACH WHEN USED ON EMBANKMENT CONSTRUCTION. RIP RAP FOR BMPs SHALL BE 6"-8" DIA. PREPARATION FOR HAND-PLACED RIP RAP, BEFORE ANY RIP RAP IS PLACED, THE SURFACE TO BE COVERED SHALL BE FULLY COMPACTED AND GRADED TO THE REQUIRED SLOPE. PLACE MIRAFITM8 OR APPROVED EQUAL GEOTEXTILE ON SLOPE. RIP RAP ON SLOPES SHALL COMMENCE COMMENCE IN A TRENCH BELOW THE TOW OF THE SLOPE AND SHALL PROGRESS UPWARD, EACH STONE BEING LAID BY HAND PERPENDICULAR TO THE SLOPE WITH THE LONG DIMENSION VERTICAL, FIRMLY BEDDED AGAINST THE SLOPE AND AGAINST THE ADJOINING STONE, WITH ENDS IN CONTACT, AND WITH WELL-BROKEN JOINTS. SIMILAR METHODS SHALL BE USED WHEN LAYING RIPRAP ON STREAM BEDS, IN DITCHES, AND ON LEVEL SURFACES.

THE FINISHED SURFACE OF THE RIPRAP SHALL PRESENT AN EVEN, TIGHT SURFACE, NOT LESS THAN 12 INCHES THICK, MEASURED PERPENDICULAR TO THE SLOPE.

THE STONES WEIGHING MORE THAN 100 LB. SHALL BE WELL DISPERSED THROUGHOUT THE AREA WITH THE 50-100 LB. STONES LAID BETWEEN THEM IN SUCH A MANNER THAT ALL STONES WILL BE IN CLOSE CONTACT. THE REMAINING VOIDS SHALL BE FILLED WITH SPALLS OF SUITABLE SIZE AND WELL TAMPED TO PRODUCE A FIRM AND COMPACT REVETMENT.

2. STABILIZATION WITH EROSION CONTROL AND REVEGETATION MAT (ECRM)
- 1) AREA MUST BE GRADED SMOOTH AND CLEAN TO FINISH GRADES, AND COMPACTED.
- 2) SEED AND MULCH AREA. USE SEED MIX APPROVED BY THE ENGINEER.

- 3) INSTALL ECRM PER MANUFACTURER'S INSTRUCTIONS, HOWEVER THESE MUST INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS:

A) GRADE GROUND TO FINISH CONTOURS. REMOVE ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH, AND OTHER OBSTRUCTIONS LYING IN DIRECT CONTACT WITH THE SOIL SURFACE.

B) DIG MAT ANCHOR TRENCHES (MINIMUM 12"DEEP, 6" WIDE) AT TERMINAL ENDS AND PERIMETER SIDES WHERE MAT IS TO BE INSTALLED.

C) INSTALL MAT BY ROLLING UPHILL PARALLEL TO WATER FLOW, STARTING AT TRENCH. OVERLAP ROLLS BY MINIMUM OF 3". FASTEN TO GROUND WITH 18" PINS AND 1 1/2" WASHERS, OR EQUIVALENT. PIN MAT AT ENDS, AND EVERY 3' TO 5' ALONG OVERLAPS. DO NO STRETCH MAT. SPLICING ROLLS SHOULD BE DONE IN A CHECK SLOT. BACKFILL TO COVER ENDS AND FASTENERS, ROLLING MAT ACROSS BACKFILL AND PIN AGAIN.

INVASIVE SPECIES:

1. ALL EQUIPMENT SHALL BE INSPECTED UPON ARRIVAL. EQUIPMENT ARRIVING WITH OBSERVABLE SOIL OR PLANT FRAGMENTS WILL BE REMOVED AND CLEANED.
2. STRAW BALES ARE NOT BE USED ON SITE; ONLY WEED-FREE STRAW BALES ARE APPROVED.
3. OFF-SITE TOPSOIL MUST BE FREE OF INVASIVE SPECIES. THE ENGINEER SHALL BE NOTIFIED OF THE TOPSOIL SOURCE 6 WEEKS BEFORE DELIVERY.

CONSTRUCTION SEQUENCE

1. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY AT THE SITE, APPLICANT SHALL
- a. CONTRACT WITH THE APPROPRIATE CONSERVATION DISTRICT TO PROVIDE INSPECTION SERVICES AT THE SITE PURSUANT TO APPENDIX F OF THE GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES
- b. CONTACT CALL BEFORE YOU DIG (811 OR 1-800-922- 4455) TO MARK UTILITIES.
2. NOTIFY THE TOWN OF EAST HAVEN ZONING AND INLAND WETLANDS AGENTS OF START OF CONSTRUCTION A MINIMUM OF 48 HOURS IN ADVANCE.
3. HAVE CT LICENSED LAND SURVEYOR STAKE OUT THE CLEARING LIMITS AND PERIMETER EROSION CONTROL.
4. CUT TREES & BRUSH BUT DO NOT GRUB.
5. INSTALL CONSTRUCTION ENTRANCE.
6. INSTALL PERIMETER EROSION AND SEDIMENTATION CONTROLS (AS DEPICTED ON THE PLANS) AND HAVE THEM INSPECTED BY SITE INSPECTOR PRIOR TO GRUBBING OR GRADING ACTIVITIES.
7. EXCAVATE AND STABILIZE TEMPORARY SEDIMENT TRAPS, IF DEWATERING IS NECESSARY FOR EXCAVATION PLEASE COORDINATE DEWATERING PLAN WITH QUALIFIED ENVIRONMENTAL PROFESSIONAL. INSTALL BASIN DRAIN OUTLET PIPING AND CAP PIPE IN THE BOTTOM OF THE BASIN. PROVIDE A STAKE MARKING THE CAP LOCATION. DO NOT INSTALL PERFORATED BASIN DRAIN AND CRUSHED STONE. SWMB #1 & #3 AND THE SWALE CONNECTING THE BASINS SHALL BE USED AS A TEMPORARY SEDIMENTATION TRAPS DURING CONSTRUCTION. UPON COMPLETION OF THE SEDIMENT TRAP AND SWALE GRADING THE CONTRACTOR SHALL HAVE THE STABILIZED TRAPS AND SWALES INSPECTED BY SITE INSPECTOR.
8. GRUB THE SEQUENCE 1 SITE AREA AND PERFORM SITE GRADING AND STABILIZATION WITHIN THE WORK AREA AS IDENTIFIED ON THE PLANS.
9. GRADE AND STABILIZE THE WESTERN SWALE TO SWMB #2.
10. PRIOR TO THE CONSTRUCTION TRANSITION TO SEQUENCE #2, THE CONTRACTOR SHALL HAVE THE SEQUENCE #1 GRADING AND STABILIZATION REVIEWED BY THE SITE INSPECTOR TO ENSURE APPROPRIATE STABILIZATION.
11. INSTALL ADDITIONAL EROSION & SEDIMENTATION CONTROL MEASURES FOR SEQUENCE 2 AS CALLED FOR ON THE PLANS.
12. GRUB THE SEQUENCE 2 SITE AREA AND PERFORM ADDITIONAL SITE GRADING WITHIN WORK AREA AS IDENTIFIED ON THE PLANS.
13. INSTALL ACCESS DRIVEWAY.
14. INSTALL PERIMETER CHAIN LINK FENCE AROUND ENTIRE SITE.
15. FINISH GRADE THE STORMWATER MANAGEMENT BASINS. INSTALL THE IMPERMEABLE LINER LAYER. INSTALL THE THE SWMB PERFORATED UNDERDRAIN PIPING, CLEAN-OUTS AND CRUSHED STONE WITHIN BASINS. CONSTRUCT THE OUTLET STRUCTURES AND DISCHARGE PIPING. INSTALL THE FINAL TOPSOIL MIXES (STANDARD AND PIERCEABLE) AND SEED THE BASINS. INSTALL EROSION CONTROL MATTING OR FIBER REINFORCED HYDROSEED ON THE SLOPES AS CALLED FOR ON THE PLANS AND DETAILS.
16. AFTER THE INITIAL GRADING WORK IS COMPLETE THE BASINS, SWALES, AND ALL DISTURBED AREAS SHALL BE LEFT FOR A MINIMUM OF ONE GROWING SEASON (APRIL 1ST THROUGH JUNE 15TH OR AUGUST 15TH THROUGH OCTOBER 15TH). THE SITE SHALL BE LEFT UNDISTURBED TO ALLOW NEW VEGETATION TO ESTABLISH. ROUTINE INSPECTIONS SHALL BE PERFORMED AND ANY ERODED AREAS OR BARE AREAS RESTORED. ANY WORK ASSOCIATED WITH THE INSTALLATION / RACKING OF THE SOLAR ARRAY WILL NOT COMMENCE UNTIL THE PERIMETER CONTROLS, INCLUDING, BUT NOT LIMITED TO, ALL SWALES AND BASINS, HAVE BEEN VEGETATIVELY STABILIZED.
17. INSTALL SOLAR RACKING FOUNDATIONS, AND RACKING, AND SOLAR MODULES. HYDROSEED OR SEED AND MULCH ANY EXPOSED SOIL AT THE END OF EACH WEEK AND BEFORE EVERY RAINFALL PREDICTED FOR 0.5 INCHES OR MORE.
18. TRENCH FOR AND INSTALL ELECTRIC LINES AND AT THE END OF EACH WEEK HYDROSEED OR MULCH AND SEED ANY EXPOSED SOIL AT THE END OF EACH WEEK AND BEFORE EVERY RAINFALL PREDICTED FOR 0.5 INCHES OR MORE.
19. INSTALL REMAINING ELECTRIC INFRASTRUCTURE AND AT THE END OF EACH WEEK HYDROSEED OR MULCH AND SEED ANY EXPOSED SOIL AT THE END OF EACH WEEK AND BEFORE EVERY RAINFALL PREDICTED FOR 0.5 INCHES OR MORE.
20. AVERSED DISTURBED SOILS WHEN ALL SOLAR PANEL INSTALLATION AND ELECTRICAL TRENCHING IS COMPLETE.
21. CLEAN SEDIMENTS BASINS AND GRADE AND RE-SEED FOR USE AS STORMWATER BASINS WHEN SITE INSPECTOR DEEMS SOILS ARE STABILIZED.
22. INSTALL PERIMETER SCREENING PLANTINGS

ROCK / LEDGE MANAGEMENT & STABILIZATION PLAN

WITHIN STORMWATER BASINS

1. BOULDERS AND LOOSE ROCK, IF ENCOUNTERED, WITHIN THE STORMWATER BASINS SHALL BE REMOVED FROM THE BASIN LIMITS BY EXCAVATOR OR MECHANICAL MEANS ONLY. ANY VOIDS LEFT BY THE BOULDERS OR LOOSE ROCK SHALL BE BACKFILLED WITH GRAVEL FILL. PROVIDE TOPSOIL AND SEED MIX AS SPECIFIED ON THE PROJECT PLANS.
2. LEDGE, IF ENCOUNTERED, SHALL BE REMOVED BY MECHANICAL MEANS ONLY, BLASTING SHALL NOT BE PERMITTED AT THE SITE. LEDGE SHALL BE REMOVED TO A MINIMUM OF 18" BELOW FINISHED GRADE ELEVATION. 12" OF GRAVEL FILL AND 6" OF TOPSOIL SHALL BE INSTALLED OVER LEDGE. PROVIDE SEED MIX AS SPECIFIED ON THE PROJECT PLANS.

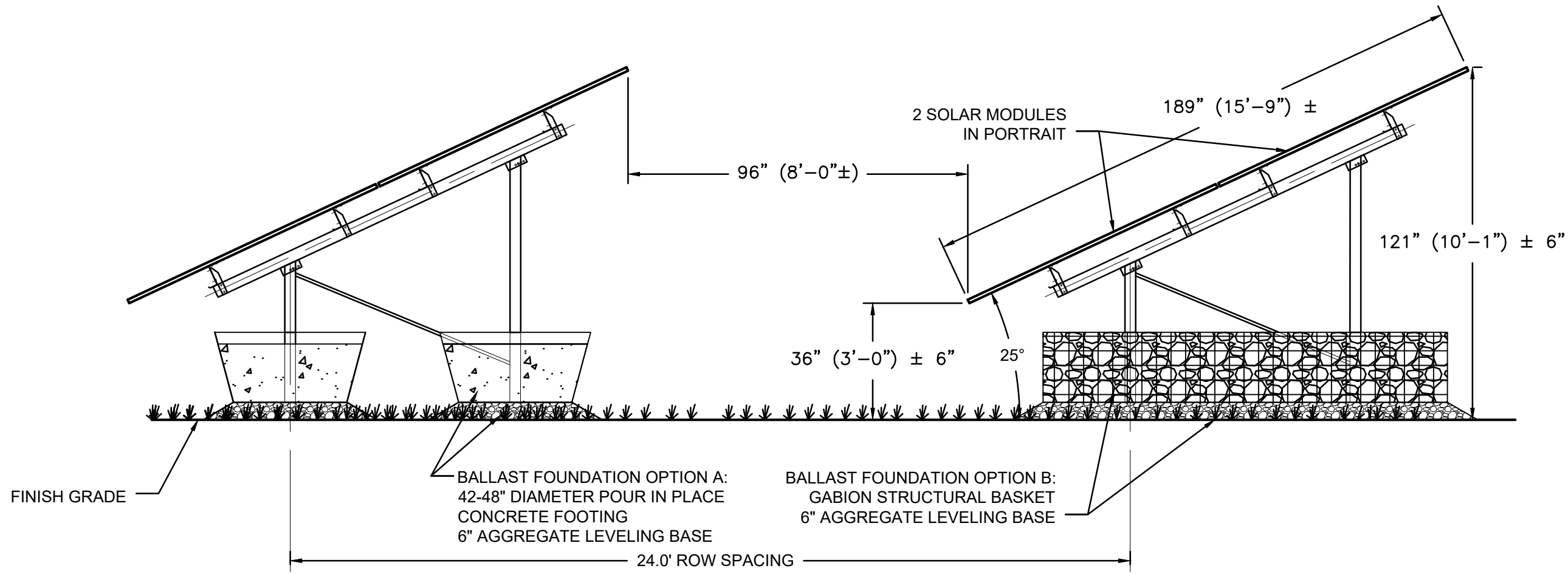
ROCK THROUGHOUT THE SITE

1. LEDGE, BOULDERS, OR LOOSE ROCK WHEN ENCOUNTERED THROUGHOUT THE REMAINING PORTIONS OF THE SITE SHALL BE REMOVED AS NEEDED TO PERFORM THE WORK. REMOVAL SHALL BE BY EXCAVATOR, OR BY MECHANICAL MEANS ONLY. BLASTING SHALL NOT BE PERMITTED AT THE SITE.
2. WHEN BOULDERS OR LOOSE ROCK IS EXCAVATED AS PART OF THE WORK, ANY VOIDS LEFT BEHIND SHALL BE BACKFILLED WITH GRAVEL FILL.
3. WHEN LEDGE IS ENCOUNTERED AT THE GROUND SURFACE WITHIN THE WORK AREA A MINIMUM OF 6" OF TOPSOIL, SEED, FERTILIZER, AND EROSION CONTROL MATTING SHALL BE INSTALLED OVER THE LEDGE AS CALLED FOR ON THE PROJECT PLANS. SEED, FERTILIZER, AND EROSION CONTROL MATTING MUST BE INSTALLED WITHIN 24 HOURS OF TOPSOIL PLACEMENT.
4. EXCAVATED ROCK MAY BE TEMPORARILY STORED ON SITE AND THE CONTRACTOR SHALL MANAGE THE MATERIAL IN EITHER OF THE FOLLOWING MANNERS, AT THEIR DISCRETION:
- A. ROCK MAY BE REMOVED FROM THE SITE VIA TRUCKS AND/OR TRAILERS AND LEGALLY DISPOSED OF OR PROCESSED OFFSITE.
- B. ROCK MAY BE CRUSHED ONSITE, PROCESSED, AND USED AS TRENCH BACKFILL OR AS GENERAL FILL ONSITE. PORTABLE CRUSHING EQUIPMENT, PROCESSING EQUIPMENT, AND STOCKPILES SHALL BE SURROUNDED BY SILT FENCE OR STRAW BALE BARRIERS.
- C. BOULDERS MAY BE PLACED AROUND THE SITE PERIMETER TO BE USED AS SCREENING FEATURES. LOCATIONS SHALL BE COORDINATED WITH THE SITE OWNER.
5. PROCESSED ROCK PLACED ON THE SITE AS GENERAL FILL SHALL MAINTAIN THE STORMWATER DRAINAGE PATTERNS AS SHOWN ON THE PROJECT PLANS.

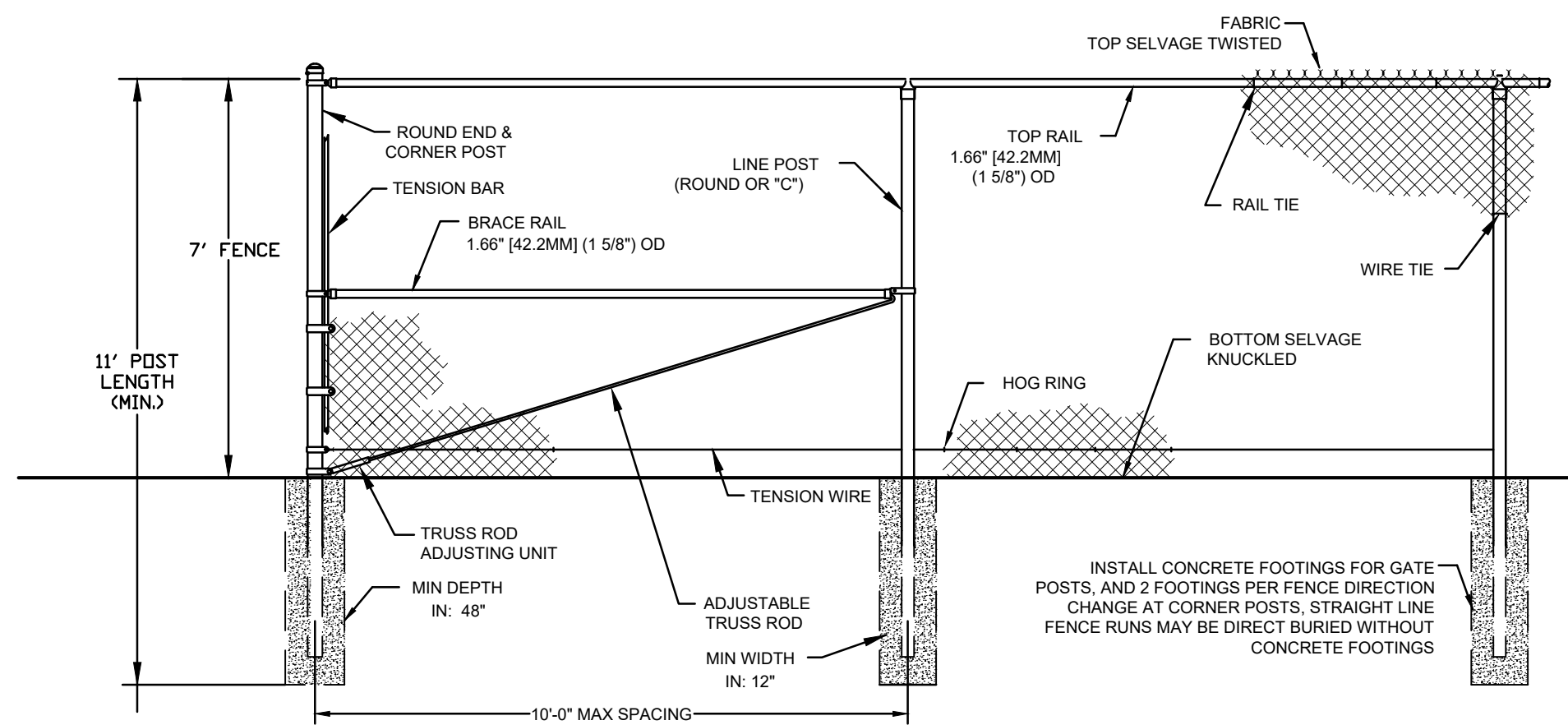
TABLE 1: TESTING SCHEDULE SUMMARY		
LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
	MOISTURE DENSITY	1 PER 2,000 CY OR MIN. 1 PER LIFT
COMPACTED SUBGRADE	PROOF-ROLL	ENTIRE LENGTH
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 1,000 FT OR MIN. 5 FOR THE SITE
AGGREGATE BASE	PROOF-ROLL	ENTIRE LENGTH
	SIEVE ANALYSIS	1 PER 2,500 CY

			<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING	
4	11/27/2024	No Changes to This Sheet		
3	10/31/2024	Misc. Additions & Revisions		
2	8/29/2024	Misc. Additions & Revisions		
1	8/23/2024	Misc. Additions & Revisions		
No.	DATE	REVISION		
			Plans Prepared for ECOS Energy 222 South 9th Street, Suite 1600, Minneapolis, MN 55402	
			<b>Borrelli Road Solar</b> 179-197 Borrelli Road East Haven, CT 06512	
			Civil Construction Notes	
			Project No. CLA-7629 Proj. Engineer K.J.H. Date: 1/26/2024 Sheet No. <b>12</b>	

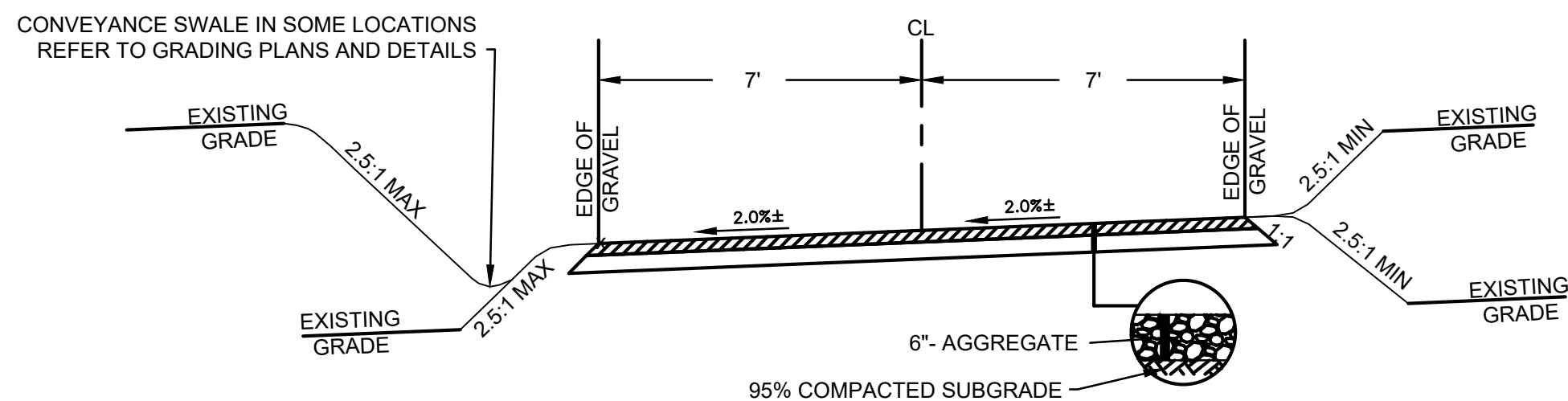




**TYPICAL SOLLAR MODULE LAYOUT**  
NOT TO SCALE

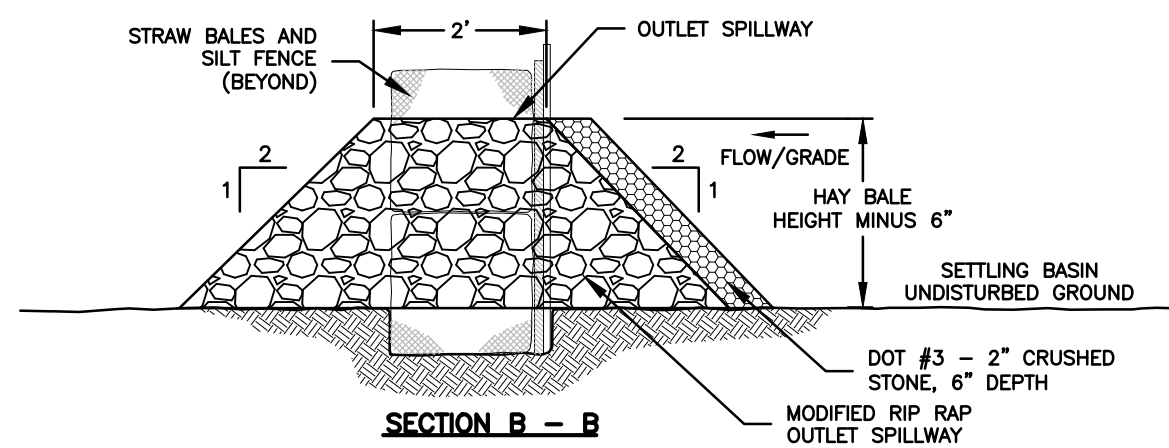
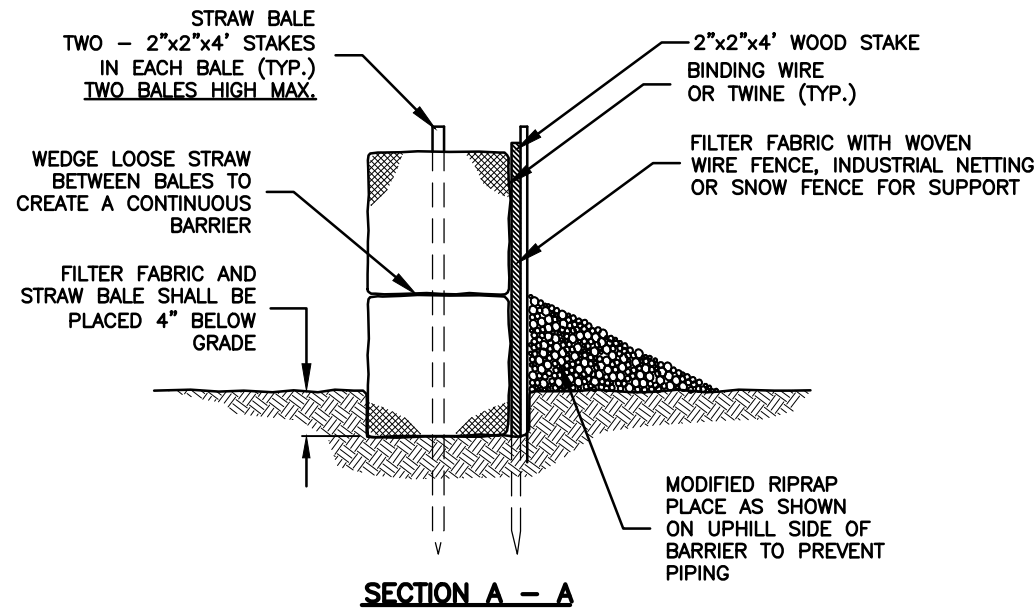
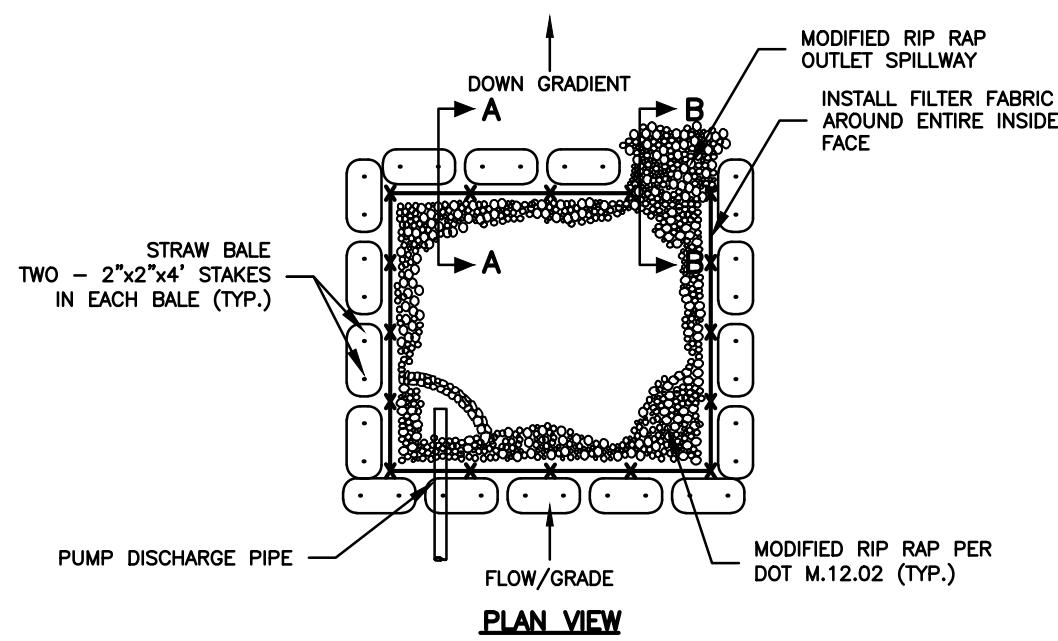


**PERIMETER FENCE DETAIL**  
NOT TO SCALE



- NOTES:
1. CONTRACTOR TO SUBCUT ROADWAY TO EXISTING GRADE ELEVATION TO MAINTAIN EXISTING SITE DRAINAGE PATTERNS WHEREVER POSSIBLE.
  2. IN FILL LOCATIONS CONTRACTOR TO GRADE TOE OF SLOPE TO EXISTING GRADE, AND MAINTAIN NATURAL DRAINAGE PATTERNS.
  3. IN CUT LOCATIONS CONTRACTOR TO CREATE SWALE ON DOWNSTREAM SIDE, REFER TO GRADING PLANS FOR DETAILS.
  4. CONTRACTOR TO COMPACT AGGREGATE TO 95% MAXIMUM DRY DENSITY.
  5. REFER TO GEOTECHNICAL RECOMMENDATIONS FOR ADDITIONAL ROADWAY SECTION DESIGN INFORMATION.

**ACCESS ROAD DETAIL**  
NOT TO SCALE



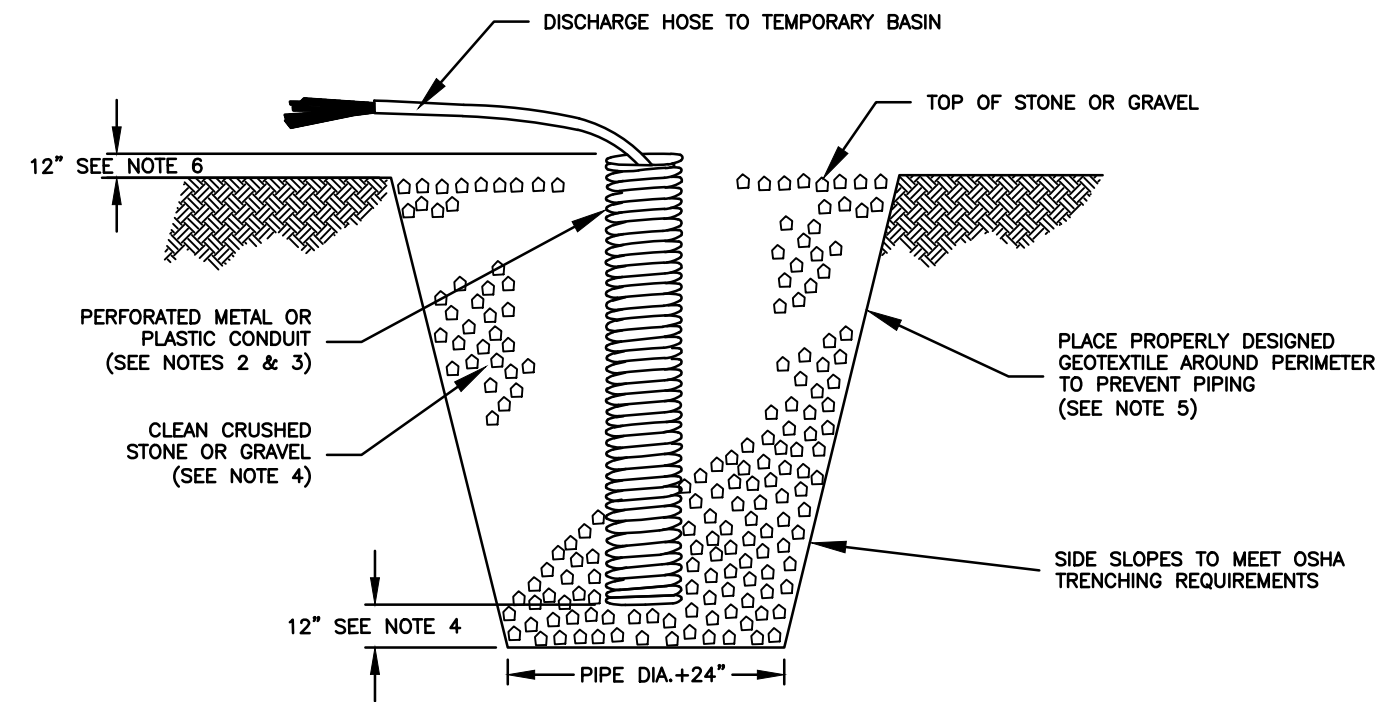
**CONSTRUCTION NOTES:**

1. SILT FENCE FILTER CLOTH TO BE SECURELY FASTENED TO GRADE STAKE WITH STAPLES, 6" ON CENTER.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN ONE ANOTHER THEY SHALL OVERLAP BY 6" AND BE FOLDED.
3. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

**DEWATERING PLAN**

- A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS FOLLOWS:
1. PUMP INLET SHALL BE PROTECTED WITH FILTER FABRIC & CRUSHED STONE.
  2. PUMP SHALL BE STAGED OUTSIDE OF WETLANDS.
  3. THE WATER SHALL BE PUMPED TO A DEWATERING STRUCTURE WHICH SHALL BE LOCATED AT LEAST 50 FEET FROM ANY REGULATED WETLAND AREA OR AS SHOWN ON THE PLANS.
  4. THE DEWATERING STRUCTURE SHALL BE SIZED TO ACCOMMODATE PUMP DISCHARGE RATE:  $REQUIRED\ VOLUME\ (C.F.) = PUMP\ DISCHARGE\ (G.P.M.) \times 16$
  5. THE DEWATERING STRUCTURE SHALL DISCHARGE TO A VEGETATED AREA.
  6. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN AND PROPERLY DISPOSED OF WHEN ACCUMULATION REACHES HALF OF THE REQUIRED STORAGE VOLUME.
  7. DEWATERING AREA SHALL BE RESTORED WITH NEW ENGLAND EROSION CONTROL SEED MIX.

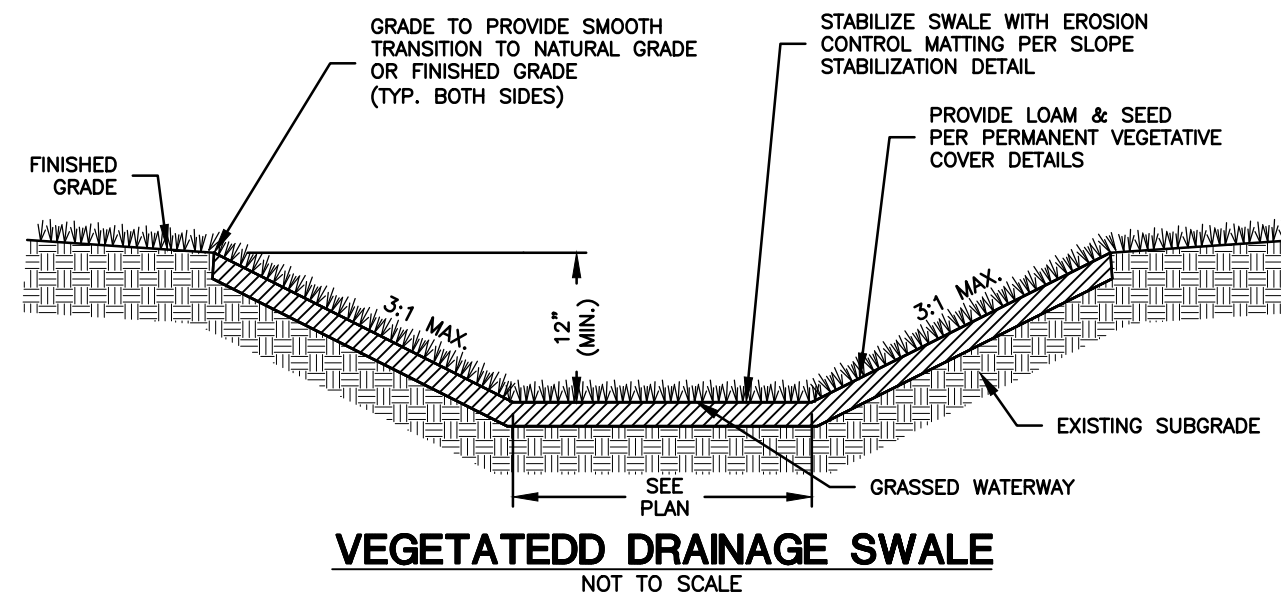
**HAY BALE BARRIER DE-WATERING DETAIL**  
NOT TO SCALE



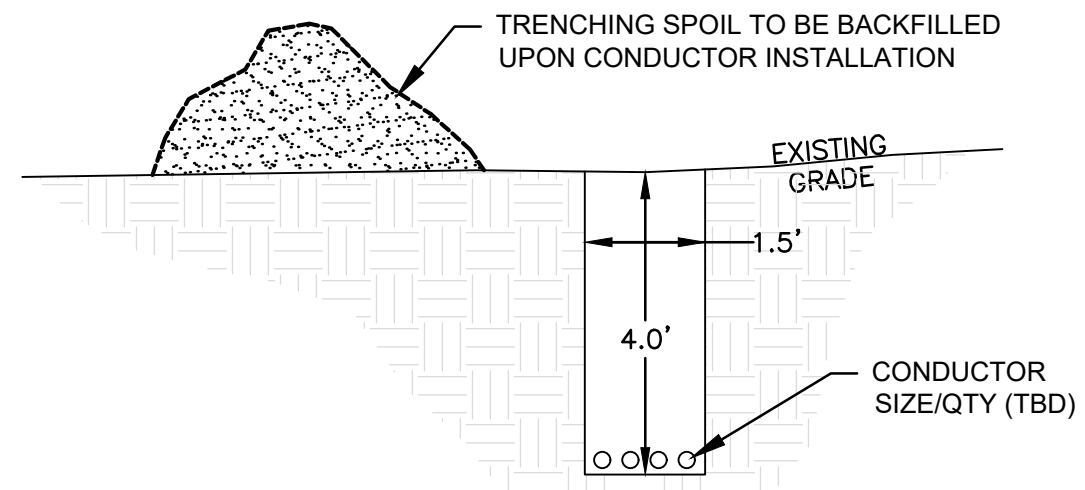
**NOTES:**

1. OVERALL SUMP PIT DIMENSIONS SHALL BE COMPATIBLE WITH ANTICIPATED SEEPAGE RATES AND PUMP SIZE TO BE USED.
2. THE STANDPIPE DIAMETER AND NUMBER OF PERFORATIONS SHALL BE COMPATIBLE THE PUMP SIZE BEING USED.
3. PERFORATIONS IN THE STANDPIPE SHALL BE EITHER CIRCULAR OR SLOTS. PERFORATION SIZE SHALL NOT EXCEED 1/2" DIAMETER.
4. CRUSHED STONE OR GRAVEL SHALL BE NO SMALLER THAN CT. DOT #67 SIZE NOR LARGER THAN CT. DOT #3 SIZE. CRUSHED STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STANDPIPE.
5. IF EXCESSIVE MOVEMENT OF FINE SOIL PARTICLES FROM THE SURROUNDING EXISTING SOILS IS ANTICIPATED, A PROPERLY DESIGNED GEOTEXTILE SHALL BE PLACED BETWEEN THE EXISTING SOILS AND THE CRUSHED STONE OR GRAVEL BACKFILL.
6. THE STANDPIPE SHALL EXTEND A MINIMUM OF 12" ABOVE THE SURROUNDING GROUND.

**TYPICAL PUMP PIT DEWATERING DETAIL**  
NOT TO SCALE



**VEGETATED DRAINAGE SWALE**  
NOT TO SCALE



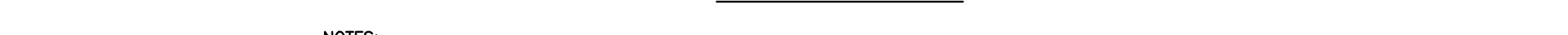
**NOTES:**

1. CONDUCTOR CLEARANCES DEPENDENT ON GEOTECHNICAL PARAMETERS AND ELECTRICAL DESIGN
2. CONDUCTOR SIZING AND QUANTITIES PER TRENCH DEPENDENT ON FINAL ELECTRICAL DESIGN TRENCH DIMENSIONS FOR EARTHWORK QUANTITIES ARE CONSERVATIVE.

**TRENCHING DETAIL**  
NOT TO SCALE

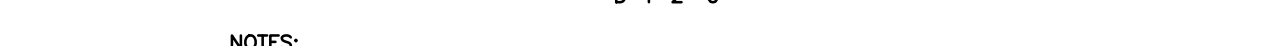
				<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING	
				317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165	
				Project No. CLA-7629	
				Proj. Engineer K.J.H.	
				Date: 1/26/2024	
				Sheet No.	
				13	
				Civil Construction Details	
				Plans Prepared for ECOS Energy 222 South 9th Street, Suite 1600, Minneapolis, MN 55402	
				<b>Borrelli Road Solar</b> 179-197 Borrelli Road East Haven, CT 06512	
				Professional Engineer Seal	

SILT FILL SHALL BE USED AS AN IMPERVIOUS STORMWATER MANAGEMENT BASIN LINE



- ### STORMWATER MANAGEMENT BASIN SECTION DETAILS

NOT TO SCALE



- TRENCH DETAIL: DRAINAGE CULVERT**

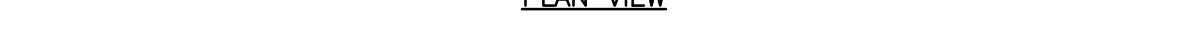
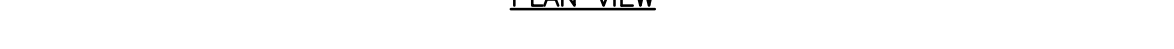
NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



**OUTLET DETAIL**  
NOT TO SCALE



### OUTLET RISER STRUCTURE DETAIL



### OUTLET RISER STRUCTURE DETAIL

4	11/27/2024	No Changes to This Sheet			
3	10/31/2024	Misc. Additions & Revisions			
2	2/29/2024	Misc. Additions & Revisions			
1	2/23/2024	Misc. Additions & Revisions			
No.	DATE	REVISION			
<div style="text-align: center;"> <b>Plans Prepared for ECOS Energy</b>  <b>222 South 9th Street, Suite 1600, Minneapolis, MN 55402</b> </div> <div style="text-align: center; margin-top: 20px;"> <b>Borrelli Road Solar</b>  <b>179-197 Borrelli Road</b>  <b>East Haven, CT 06512</b> </div> <div style="text-align: center; margin-top: 20px;"> <b>Civil Construction Details</b> </div>					
			Project No. <b>CLA-7629</b> Proj. Engineer <b>K.J.H.</b> Date: <b>1/26/2024</b> Sheet No. <div style="font-size: 2em;"><b>14</b></div>		