PROPOSED 4.2 MW± SOLAR ARRAY
APPLICATION TO ALTER WETLANDS

PROPERTY

DANIELE DRIVE
BURRILLVILLE, RI
AP 195, LOT 15

OWNER/APPLICANT

TOWN OF BURRILLVILLE
105 HARRISVILLE MAIN STREET
HARRISVILLE, RI 02830

PREPARED FOR:

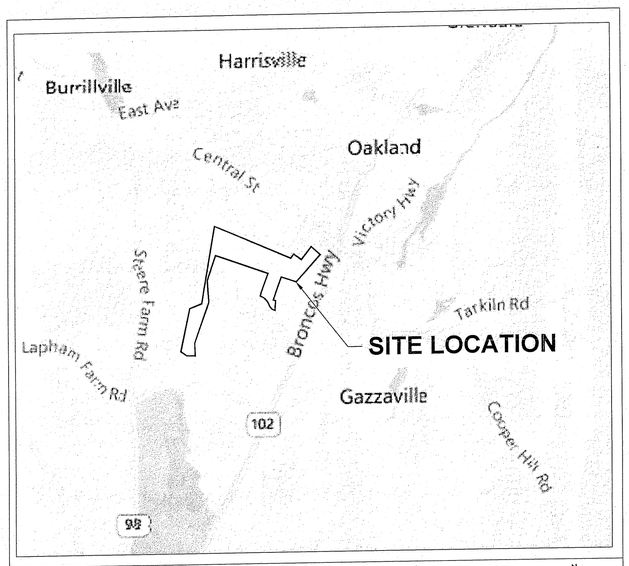
BURRILLVILLE SOLAR, LLC
20 PARK PLAZA SUITE 320
BOSTON, MA 02116

SEPTEMBER 28, 2018

REVISION 1: FEBRUARY 20, 2019

Sheet List Table

Sheet Number	Sheet Title
1	COVER
2	NOTES N1
3	INDEX SHEET
4	SITE LAYOUT-LM1
5	SITE LAYOUT-LM2
6	SITE LAYOUT LM3
7	SITE LAYOUT LM4
8	GRADING AND DRAINAGE- GD1
9	GRADING AND DRAINAGE- GD2
10	GRADING AND DRAINAGE- GD3
11	GRADING AND DRAINAGE - GD4
12	EROSION AND SEDIMENT CONTROL
13	EROSION AND SEDIMENT CONTROL
14	EROSION AND SEDIMENT CONTROL
15	EROSION AND SEDIMENT CONTROL
16	PRE-DEVELOPMENT DRAINAGE
17	POST-DEVELOPMENT DRAINAGE
18	ROAD PROFILE P-1
19	BASIN SECTIONS S-1
20	BASIN SECTIONS S-2
21	BASIN SECTIONS S-3
22	DETAILS D-1
23	DETAILS D-2
24	DETAILS D-3
25	DETAILS D-4
26	DETAILS D-5
ATTACHMENTS	
ATTACHMENT 1: "ALTA/NSPS LAND TITLE SURVEY", DATED 09/5/2018, LAST REVISED 02/15/2019 DIPRETE ENGINEERING, LLC.	



LOCATION MAP
SCALE: 1"=2,000'

PREPARED BY:

ess group
environmental consulting & engineering services

100 Fifth Avenue, 5th Floor
Waltham, Massachusetts 02451
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SPECIFICALLY SHOWN ON PLANS BEARING THIS APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Agnes D. Wenck

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Environmental Management
APR 17 2019
Office of Water Resources

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL

2019.02.20
17:59:09
-05'00'

PLAN FOR NOTICE - PUBLIC REVIEW PLAN

FOR PERMITTING PURPOSES ONLY

DATE: Feb 20, 2019 - 5:07PM
PLOTTED BY: JGOLD
FILENAME: J:\BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WSSM_WETLAND APPLICATION TO ALTER\BASE-COD APP TO ALTER_COVER.dwg

GENERAL NOTES:

1. SOILS RESOURCES DATA FROM USGS NRCS WEB SOIL SURVEY, ACCESSED ON 04/23/2018.
2. 2011 LIDAR DATA FROM RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS).
3. BASE PLAN REFERENCES "ALTA/NSPS LAND TITLE SURVEY", DANIELE DRIVE, BURRILLVILLE, RI, DATED 9/05/2018, PREPARED BY DIPRETE ENGINEERING, LLC., LAST REVISED 2/15/19.
4. WETLANDS FLAGGED BY ESS ON 10/15/2017, 10/20/2017, AND 03/01/2018.
5. DEPICTED WETLAND EDGE FLAGS X1 THROUGH X11, U1 THROUGH U26, W1 THROUGH W16, W19 THROUGH W158, Y1 THROUGH Y4, Y16 THROUGH Y29, Z1 THROUGH Z24, AND Z37 THROUGH Z55 AND THE EDGES OF THE ASSOCIATED 50 FOOT PERIMETER WETLANDS HAVE NOT BEEN VERIFIED BY RIDEM AS PART OF THIS APPLICATION.
6. STREAM EDGES DEPICTED WITHIN THE SWAMP DELINEATED BY THE W FLAG SERIES AND ADJACENT TO WETLAND EDGE FLAGS Z22 TO Z13 ALONG WITH THEIR ASSOCIATED 100 FOOT RIVERBANK WETLAND EDGES HAVE NOT BEEN VERIFIED BY RIDEM AS PART OF THIS APPLICATION.
7. ENGINEER'S ENDORSEMENT IS FOR PERMITTING PURPOSES ONLY. PLANS NOT INTENDED FOR CONSTRUCTION.

CONSTRUCTION NOTES:

1. NO CHANGES ARE TO BE MADE UNLESS AUTHORIZED BY THE OWNER.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, AND PERMIT CONDITIONS.
3. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, STREETS, PAVEMENTS, HIGHWAY GUARDS, CURBING, EDGING, TREES AND PLANTINGS, ETC. ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AT HIS/HER OWN EXPENSE AS REQUIRED BY THE ENGINEER ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
4. THE CONTRACTOR SHALL DISPOSE OF ALL RUBBISH, AND DEBRIS IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL MAINTAIN THE PROJECT SITE IN SAFE AND CLEAN CONDITION.
5. CONSTRUCTION PHASING SHALL BE IMPLEMENTED TO MINIMIZE THE AMOUNT OF EARTH DISTURBANCE AT ANY ONE TIME. EARTH DISTURBANCE ACTIVITIES DURING EACH PHASE OF CONSTRUCTION SHALL BE LIMITED TO A MAXIMUM OF 5 ACRES. EACH DISTURBED AREA SHALL BE TEMPORARILY STABILIZED PRIOR TO THE INITIATION OF SUBSEQUENT PHASES.
6. CONSTRUCTION SEQUENCE SHALL BE COORDINATED TO MINIMIZE DISTURBANCE OF EXISTING CONDITIONS AND OPERATIONS AND SHALL BE CONDUCTED AS FOLLOWS:

6.1. PHASE 1 ACCESS ROAD AND WETLAND CROSSING:
- 6.1.1. ERECT OR POST A 12 INCH WIDE X 18 INCH LONG WEATHER RESISTANT SIGN WHICH BOLDLY STATES 'DEM #XXX-XXXX' IN ACCORDANCE WITH THE RIDEM WETLAND ALTERATION PERMIT.
- 6.1.2. INSTALL LOD FENCING AROUND ENTIRE PROJECT.
- 6.1.3. INSTALL EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE, TREE PROTECTION, AND SILT SACKS.
- 6.1.4. CONSTRUCT CONSTRUCTION ENTRANCE.
- 6.1.5. CONSTRUCT ROAD, SWALES, AND CULVERT DURING PERIODS OF LOW FLOW.
- 6.1.6. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.

6.2. PHASE 2 BASIN 201A:
- 6.2.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.2.2. CONSTRUCT DETENTION BASIN 201A AND STABILIZE.
- 6.2.3. INSTALL INTERIOR EROSION AND SEDIMENT CONTROLS REQUIRED TO PROTECT DETENTION BASIN 201A FROM RUN-ON.
- 6.2.4. CLEAR AND GRUB WESTERN AREA WITHIN PROPOSED FENCE LINE AND SELECTIVELY REMOVE, BUT DO NOT GRUB, SHADE TREES BETWEEN FENCE LINE AND LOD (EXCLUDING TST-1 AND TST-2 DRAINAGE AREAS) AS SHOWN.
- 6.2.5. INSTALL REMAINING INTERIOR EROSION AND SEDIMENT CONTROLS.
- 6.2.6. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.

6.3. PHASE 3 TEMPORARY SEDIMENT TRAP 1:
- 6.3.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.3.2. CONSTRUCT TEMPORARY SEDIMENT TRAP 1 AND DIVERSION.
- 6.3.3. CLEAR AND GRUB AREA WITHIN THE TST-1 DRAINAGE AREA SHOWN ON PLANS.
- 6.3.4. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.
- 6.3.5. ONCE TEMPORARY STABILIZATION OF THE UPGRADIENT AREA IS COMPLETED, CLEAR DEBRIS FROM THE TEMPORARY SEDIMENT TRAP AND DIVERSION, COMPLETE FINAL GRADING, AND STABILIZE.

6.4. PHASE 4 TEMPORARY SEDIMENT TRAP 2:
- 6.4.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.4.2. CONSTRUCT TEMPORARY SEDIMENT TRAP 2 AND DIVERSION.
- 6.4.3. CLEAR AND GRUB UPGRADIENT AREA WITHIN PROPOSED FENCE LINE AND SELECTIVELY REMOVE, BUT DO NOT GRUB, SHADE TREES BETWEEN FENCE LINE AND LOD WITHIN THE TST-2 DRAINAGE AREA AS SHOWN.
- 6.4.4. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.
- 6.4.5. ONCE TEMPORARY STABILIZATION OF THE UPGRADIENT AREA IS COMPLETED, CLEAR DEBRIS FROM THE TEMPORARY SEDIMENT TRAP AND DIVERSION, COMPLETE FINAL GRADING, AND STABILIZE.

6.5. PHASE 5 BASINS 202A, 202B, 202C:
- 6.5.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.5.2. CONSTRUCT DETENTION BASINS 202A, 202B, AND 202C AND STABILIZE.
- 6.5.3. INSTALL INTERIOR EROSION AND SEDIMENT CONTROLS REQUIRED TO PROTECT DETENTION BASINS 202A, 202B, AND 202C FROM RUN-ON.
- 6.5.4. CLEAR AND GRUB NORTHERN AREA WITHIN PROPOSED FENCE LINE AND SELECTIVELY REMOVE, BUT DO NOT GRUB, SHADE TREES BETWEEN FENCE LINE AND LOD (EXCLUDING TST-1, TST-2, AND TST-3 DRAINAGE AREAS) AS SHOWN.
- 6.5.5. INSTALL REMAINING INTERIOR EROSION AND SEDIMENT CONTROLS.
- 6.5.6. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.

6.6. PHASE 6 BASIN 202D AND CONVEYANCE SWALE:
- 6.6.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.6.2. CONSTRUCT DETENTION BASIN 202D AND CONVEYANCE SWALE 202D AND STABILIZE.
- 6.6.3. INSTALL INTERIOR EROSION AND SEDIMENT CONTROLS REQUIRED TO PROTECT DETENTION BASIN 202D AND CONVEYANCE SWALE 202D FROM RUN-ON.
- 6.6.4. CLEAR AND GRUB UPGRADIENT AREA (EXCLUDING TST-3 DRAINAGE AREA).
- 6.6.5. INSTALL REMAINING INTERIOR EROSION AND SEDIMENT CONTROLS.
- 6.6.6. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.

6.7. PHASE 7 TEMPORARY SEDIMENT TRAP 3:
- 6.7.1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES DOWNGRADIENT OF AREAS TO BE DISTURBED IN THIS PHASE.
- 6.7.2. CONSTRUCT TEMPORARY SEDIMENT TRAP 3 AND DIVERSION.
- 6.7.3. CLEAR AND GRUB UPGRADIENT AREA WITHIN PROPOSED FENCE LINE AND SELECTIVELY REMOVE, BUT DO NOT GRUB, SHADE TREES BETWEEN FENCE LINE AND LOD WITHIN THE TST-3 DRAINAGE AREA AS SHOWN.
- 6.7.4. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.
- 6.7.5. ONCE TEMPORARY STABILIZATION OF THE UPGRADIENT AREA IS COMPLETED, CLEAR DEBRIS FROM THE TEMPORARY SEDIMENT TRAP AND DIVERSION, COMPLETE FINAL GRADING, AND STABILIZE.
- 6.7.6. INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED AND PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.

6.8. PHASE 8 EQUIPMENT AND FENCE INSTALLATION:
- 6.8.1. MAINTAIN TEMPORARY STABILIZATION AND EROSION AND SEDIMENT CONTROLS DURING INSTALLATION OF EQUIPMENT AND FENCE. INTERIOR FILTER SOCKS MAY BE TEMPORARILY RELOCATED AS REQUIRED FOR ACCESS AND MUST BE RETURNED AS SOON AS PRACTICAL.
- 6.8.2. REMOVE ANY ACCUMULATED DEBRIS AND SEDIMENT FROM ALL PERMANENT SWALES AND DETENTION BASINS.
- 6.8.3. COMPLETE FINAL SITE STABILIZATION.
- 6.8.4. REMOVE RIDEM PERMIT SIGN, SAFETY FENCE, TEMPORARY POLLUTION PREVENTION MEASURES, AND TEMPORARY EROSION AND SEDIMENT CONTROLS. BIODEGRADABLE FILTER SOCKS MAY REMAIN.

CONSTRUCTION NOTES (CONTINUED):

7. ALL NECESSARY FEES AND CONSTRUCTION PERMITS SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
8. WORK WITHIN PUBLIC WAYS SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
9. THE CONTRACTOR SHALL USE DESIGNATED LOCATIONS WITHIN THE ESTABLISHED LIMITS OF DISTURBANCE TO ACCESS THE SITE.
10. DUST CONTROL PROCEDURES AND PRACTICES SHALL BE USED TO SUPPRESS DUST DURING THE CONSTRUCTION PROCESS. EXAMPLES OF DUST CONTROL MEASURES INCLUDE DAILY SWEEPING OF DANIELE STREET, WATER TREATMENT, MULCH, AND TEMPORARY VEGETATION.
11. CARE SHOULD BE TAKEN TO THE BEST OF THE OPERATOR'S ABILITY TO AVOID DISTURBING LARGE AREAS PRIOR TO ANTICIPATED PRECIPITATION EVENTS. AT A MINIMUM, STORM EVENTS MUST BE MONITORED AND TRACKED IN ORDER TO DETERMINE WHEN POST-STORM EVENT INSPECTIONS MUST BE CONDUCTED. INSPECTIONS MUST BE CONDUCTED AND DOCUMENTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY-FOUR (24) HOURS AFTER ANY STORM EVENT, WHICH GENERATES AT LEAST 0.25 INCHES OF RAINFALL PER TWENTY-FOUR (24) HOUR PERIOD AND/OR AFTER A SIGNIFICANT AMOUNT OF RUNOFF OR SNOWMELT.
12. ONCE GRADED, THE QUALIFIED PERVIOUS AREA (QPA) SHOWN ON DRAWINGS GD-1 AND GD-2 SHALL BE SURROUNDED WITH A SNOW FENCE. CONSTRUCTION VEHICLES MUST NOT DRIVE OVER THE QPA. IF THE SOIL WITHIN THE QPA BECOMES COMPACTED, IT MUST BE SUITABLY AMENDED, TILLED, AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE TO RESTORE INFILTRATION CAPACITY.

UTILITIES NOTES:

1. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO EXCAVATION.
2. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES AND UTILITY COMPANIES, IN WRITING, A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION WITHIN 15 FEET OF A UTILITY LINE.
3. EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. ADDITIONAL UTILITIES MAY EXIST THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT DIGSAFE, NOTIFY ALL NON-MEMBER UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
4. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OR JURISDICTION OF THE UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT.
5. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES.
6. IF REQUIRED, OVERHEAD LINES SHALL BE RELOCATED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
7. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

SEDIMENTATION & EROSION CONTROL NOTES:

1. THE CONTRACTOR IS REQUIRED TO REVIEW AND IMPLEMENT THE SOIL EROSION AND SEDIMENT CONTROL PLAN THROUGHOUT CONSTRUCTION. THE PLAN MUST BE MAINTAINED AT THE SITE. IT IS THE OPERATOR'S RESPONSIBILITY TO MANAGE THE SITE DURING EACH CONSTRUCTION PHASE SO AS TO PREVENT POLLUTANTS FROM LEAVING THE SITE. THIS MAY REQUIRE THE CONTRACTOR TO REVISE AND AMEND THE SESC PLAN DURING CONSTRUCTION TO ADDRESS VARYING SITE AND/OR WEATHER CONDITIONS, SUCH AS ADDING OR REALIGNING EROSION OR SEDIMENT CONTROLS TO ENSURE THE SESC PLAN REMAINS COMPLIANT WITH THE RIPDES CONSTRUCTION GENERAL PERMIT.
2. EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN HEREIN OR AS DIRECTED BY THE ENGINEER.
3. PERIMETER SOIL AND EROSION CONTROLS SHALL BE PLACED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE TRIBUTARY WATERSHED. CONTRACTOR TO NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES. ALL SOIL AND EROSION CONTROLS SHALL BE INSPECTED AND REPAIRED AS NECESSARY.
4. ALL TEMPORARY EROSION, RUNOFF, SEDIMENT, AND POLLUTION PREVENTION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE BEGINNING OF EACH PHASE OF EARTH DISTURBANCE.
5. EARTH DISTURBANCE SHALL BE PHASED TO AVOID GREATER THAN 5 ACRES OF DISTURBANCE AT ONE TIME. DISTURBED AREAS IN EACH PHASE SHALL BE TEMPORARILY STABILIZED PRIOR TO COMPLETION.
6. EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EACH STORM EVENT GREATER THAN 0.25 INCHES OF RAINFALL. ALL DAMAGED EROSION AND SEDIMENT CONTROLS SHALL BE REPLACED. ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.
7. SURFACE ROUGHENING IMPLEMENTS SHALL BE USED ON SLOPES WHOSE GRADIENTS ARE BETWEEN 2:1 AND 4:1, INCLUSIVE, AS DESCRIBED IN THE MOST RECENT RHODE ISLAND SEDIMENT AND EROSION CONTROL HANDBOOK, SECTION 4. SURFACE ROUGHENING IMPLEMENTS INCLUDE BUT ARE NOT LIMITED TO:
   - 7.1. DISCS
   - 7.2. TILLERS
   - 7.3. SPRING-TOOTH HARROWS
   - 7.4. DOZER TRACK CLEATS
   - 7.5. FRONT LOADER BUCKET TEETH

   GROOVES MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT, AS MENTIONED ABOVE, WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION. GROOVES SHALL NOT BE LESS THAN 3-INCHES DEEP NOR FURTHER THAN 15-INCHES APART AVOID EXCESSIVE COMPACTION OF THE SOIL SURFACE WHEN ROUGHENING THE SURFACE. AVOID EXCESSIVE COMPACTION OF THE SOIL SURFACE WHEN ROUGHENING THE SURFACE.

   AREAS WHICH WILL NOT BE MOWED:
   CUT SLOPES: GROOVES SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.
   FILL SLOPES: SHALL BE GROOVED OR ALLOWED TO REMAIN ROUGH AS THEY ARE CONSTRUCTED.

   AREAS WHICH WILL BE MOWED:
   EXCESSIVE ROUGHNESS IS UNDESIRABLE WHERE MOWING IS PLANNED. AREAS TO BE SEEDED AND MOWED MAY BE ROUGHENED WITH SHALLOW DEPRESSIONS SUCH AS THOSE THAT REMAIN AFTER HARROWING, RAKING, OR USING A CULTIPACKER-SEEDER. DEPRESSIONS FORMED BY SUCH EQUIPMENT SHOULD BE AT LEAST 1 INCH DEEP AND NOT FURTHER THAN 12 INCHES APART. THE FINAL PASS OF ANY EQUIPMENT SHALL BE ON THE CONTOUR (PERPENDICULAR TO THE DIRECTION OF THE SLOPE).

   CUT SLOPES:
   GROOVES MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION.

   FILL SLOPES: AS LIFTS OF THE FILL ARE CONSTRUCTED, SOIL AND ROCK MATERIALS MAY BE ALLOWED TO FALL NATURALLY ONTO THE SLOPE SURFACE AFTER FILLING IS COMPLETED. AFTER FILLING IS COMPLETED, IF THE SURFACE IS NOT SUFFICIENTLY ROUGHENED, GROOVE OR TRACK THE SURFACE THE SAME AS FOR CUT SLOPES. SLOPES SHALL NOT BE BLADED OR SCRAPED TO PRODUCE A SMOOTH, HARD SURFACE, EXCEPT WHERE SLOPES ARE MEANT TO BE USED AS A TRAVELWAY FOR VEHICLES AND ADDITIONAL EROSION AND SEDIMENT CONTROLS ARE INSTALLED.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION CONTROL MEASURES TO PREVENT OFF-SITE TRACKING OF EARTH, SEDIMENT AND DEBRIS.
9. INITIATE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE AREA HAS TEMPORARILY OR PERMANENTLY CEASED. ANY DISTURBED AREA THAT WILL NOT HAVE ACTIVE CONSTRUCTION ACTIVITY OCCURRING WITHIN 14 DAYS MUST BE STABILIZED IN ACCORDANCE WITH THE RI SESC HANDBOOK USING STRAW MULCH, TEMPORARY SEEDING, OR PERMANENT SEEDING.
10. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF FOUR INCHES OF LOAM PLACED BEFORE BEING PERMANENTLY SEEDED OR MULCHED. EXISTING LOAM TO BE REUSED, SHALL BE FREE OF DEBRIS. LOAM FROM AN OFF SITE BORROW SOURCE SHALL BE SAMPLED AND APPROVED FOR USE BY THE ENGINEER PRIOR TO ITS DELIVERY TO THE SITE.
11. EROSION CONTROL MEASURES SHALL BE REMOVED WHEN THE DISTURBED AREA IS STABILIZED OR AS SPECIFIED BY THE ENGINEER. DISTURBED AREA RESULTING FROM THE FILTER SOCK REMOVAL OPERATION SHALL BE PERMANENTLY SEEDED. ALL ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.
12. TEMPORARY STRAW MULCH OR TEMPORARY EROSION CONTROL BLANKETS SHALL BE USED WHERE NON-VEGETATIVE COVER IS REQUIRED FOR A PERIOD GREATER THAN 14 DAYS BUT LESS THAN SIX MONTHS. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MACHINE RESULTING IN 100% COVERAGE OF THE DISTURBED SOIL. IF ANCHORING IS NECESSARY, TACKIFIERS AND/OR NETTING EITHER WITH THE MULCH OR IMMEDIATELY FOLLOWING MULCH APPLICATION SHALL BE USED.
13. TEMPORARY SEEDING SHALL BE USED WHERE VEGETATIVE COVER IS REQUIRED FOR A PERIOD GREATER THAN ONE MONTH BUT LESS THAN TWELVE MONTHS ON DISTURBED SOIL AREAS. RAPIDLY GROWING ANNUAL GRASSES WILL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING).THE SITE SHALL BE CHECKED PERIODICALLY TO ASSESS THE GROWTH OF THE PLANTS. IF SEEDING FAILS TO GROW, THE AREA SHALL BE RE-ESTABLISHED TO PROVIDE ADEQUATE EROSION CONTROL. THE SEED MIXTURE SHALL BE RIDOT TEMPORARY SEED MIX (M18.10.5), OR APPROVED EQUIVALENT.
14. PERMANENT SEEDING SHALL BE USED ON AREAS WHERE PERMANENT VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL AND REDUCE EROSION AND SEDIMENTATION. RAPIDLY GROWING ANNUAL GRASSES SHALL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING). THE SEED MIXTURES TO BE USED FOR PERMANENT STABILIZATION ARE SHOWN HEREIN.
15. SEEDING SHALL OCCUR PRIOR TO OCTOBER 15TH. AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15TH, MUST BE STABILIZED THROUGH THE USE OF NON- VEGETATIVE EROSION CONTROL MEASURES. AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHALL BE COVERED WITH STRAW MULCH. DURING THESE MONTHS, TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.
16. TREATMENT CHEMICALS SHALL NOT BE APPLIED.

JURISDICTIONAL WETLAND DISTURBED AREA NOTES

1. ALL DISTURBED AREAS WITHIN JURISDICTIONAL WETLANDS SHALL BE STABILIZED USING A WETLAND SEED MIX (NEW ENGLAND WETMIX, TABLE 1) WHICH WILL BE SEEDED AT A RATE OF 18 BULK LBS. PER ACRE THROUGH THE WETLAND IMPACT AREAS. DISTURBED PERIMETER AND RIVERBANK LOCATIONS SHALL BE SEEDED WITH NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES AT A RATE OF 25 BULK LBS. PER ACRE (TABLE 2). ALL SEEDED AREAS WILL BE MULCHED WITH BLOWN STRAW. DURING CONSTRUCTION SEEDING WILL TAKE PLACE IMMEDIATELY AFTER THE APPLICATION OF TOPSOIL TO ENSURE RAPID COVERAGE FOR THE SITE. SEED SURVIVAL IS GENERALLY OPTIMIZED BY SPRING PLANTING; EARLY FALL PLANTING IS ALSO ACCEPTABLE (APRIL 15TH TO JUNE 15TH OR SEPTEMBER 1ST TO NOVEMBER 1ST.)

Table 1. New England Wetmix (Wetland Seed Mix)

Percent of Mixture	Botanical Name	Common Name	Wetland Indicator Status
5	*Agrostis alba*	Redtop	FACW
2	*Asclepias incarnata*	Swamp Milkweed	OBL
10	Carex crinita	Fringed Sedge (Nodding)	OBL
10	Carex lurida	Lurid Sedge (Shallow)	OBL
25	Carex vulpinoidae	Fox Sedge	OBL
10	*Eupatorium maculatum*	Spotted Joe Pye Weed	FACW
10	*Eupatorium perfoliatum*	Boneset	FACW
3	*Juncus effusus*	Soft Rush	FACW+
10	*Scirpus cyperinus*	Wool Grass	FACW
5	*Scirpus validus*	Soft Stem Bulrush	OBL
10	*Verbena hastata*	Blue Vervain	FACW

Table 2. New England Erosion Control/ Restoration Mix for Dry Sites (Upland Seed Mixture)

Percent of Mixture	Botanical Name	Common Name	Wetland Indicator Status
15	*Agrostis perennans*	Upland Bentgrass	FACU
5	*Agrostis scabra*	Rough Bentgrass/Tricklegrass	FAC
5	*Bouteloua gracilis*	Blue Grama	
20	*Elymus canadensis*	Canada Wild Rye	FACU
15	*Festuca rubra*	Creeping Red Fescue	FACU
10	*Lolium multiflorum*	Annual Ryegrass (naturalized)	
10	*Lolium perenne*	Perrenial Ryegrass (naturalized)	
10	*Schizachyrium scoparium*	Little Bluestem	FACU
10	*Sorghastrum nutans*	Indian Grass	UPL

DRYSWALE NOTES:

1. SOIL MIX SHALL HAVE A LOAMY SAND TEXTURE PER USDA TEXTURAL TRIANGLE WITH A MAXIMUM CLAY CONTENT OF LESS THAN 2%. SOIL MIXTURE SHALL BE 85-88% SAND, 8-12% SOIL FINES (NO MORE THAN 2% CLAY), AND 3-5% ORGANIC MATTER.
2. ADD 20% (BY VOLUME) OF WELL AGED (3 MONTHS), WELL AERATED, LEAF COMPOST (OR APPROVED EQUIVALENT) TO THE ABOVE PLANTING SOIL MIXTURE. WHERE SOIL CONTENT IS LESS THAN 12% ADD A CORRESPONDING % OF LEAF COMPOST.
3. THE SOIL SHALL BE UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES, SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARTHUB, OR OTHER NOXIOUS WEEDS.
4. PRIOR TO INSTALLATION, SOIL SHALL BE TESTED AND CONFORM TO THE FOLLOWING CRITERIA.
   - 4.1. PH RANGE: 5.7 - 7.0
   - 4.2. MAGNESIUM: NOT TO EXCEED 32 PPM
   - 4.3. PHOSPHORUS P205: NOT TO EXCEED 69 PPM
   - 4.4. POTASSIUM K20: NOT TO EXCEED 78 PPM
   - 4.5. SOLUBLE SALTS: NOT TO EXCEED 500 PPM

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
4/20/19

EXISTING CONDITIONS LEGEND

- 100-FOOT RIVERBANK WETLAND
- 50-FOOT PERIMETER WETLAND
- YARD SETBACK

PROPOSED CONDITIONS LEGEND

- LIMITS OF DISTURBANCE
- 6-FOOT CHAIN LINK FENCE
- 12-FOOT WIDE CHAIN LINK FENCE GATE
- CRUSHED STONE VEHICLE ACCESS
- ROCK OUTLET PROTECTION APRON / LEVEL SPREADER
- QUALIFIED PERVIOUS AREA
- DETENTION BASIN/ CONVEYANCE SWALE EXTENTS
- DRY SWALE EXTENTS
- AMERICAN MEADOWS INC. SOLAR FARM COLOR SEED MIX
- NEW ENGLAND WETMIX (WETLAND SEED MIX)
- NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES (UPLAND SEED MIXTURE)
- DRAIN LINE
- UNDERDRAIN LINE
- OUTLET CONTROL STRUCTURE
- UTILITY POLE
- OVERHEAD WIRES
- UNDERGROUND WIRES
- 415 PROPOSED CONTOUR
- FS8 8-INCH FILTER SOCK
- FS12 12-INCH FILTER SOCK
- FS24 24-INCH FILTER SOCK
- SLOD COMBINED SILT FENCE AND STRAW BALE/ LIMITS OF DISTURBANCE
- FLOW ARROW
- FLOW PATH
- MATCHLINE

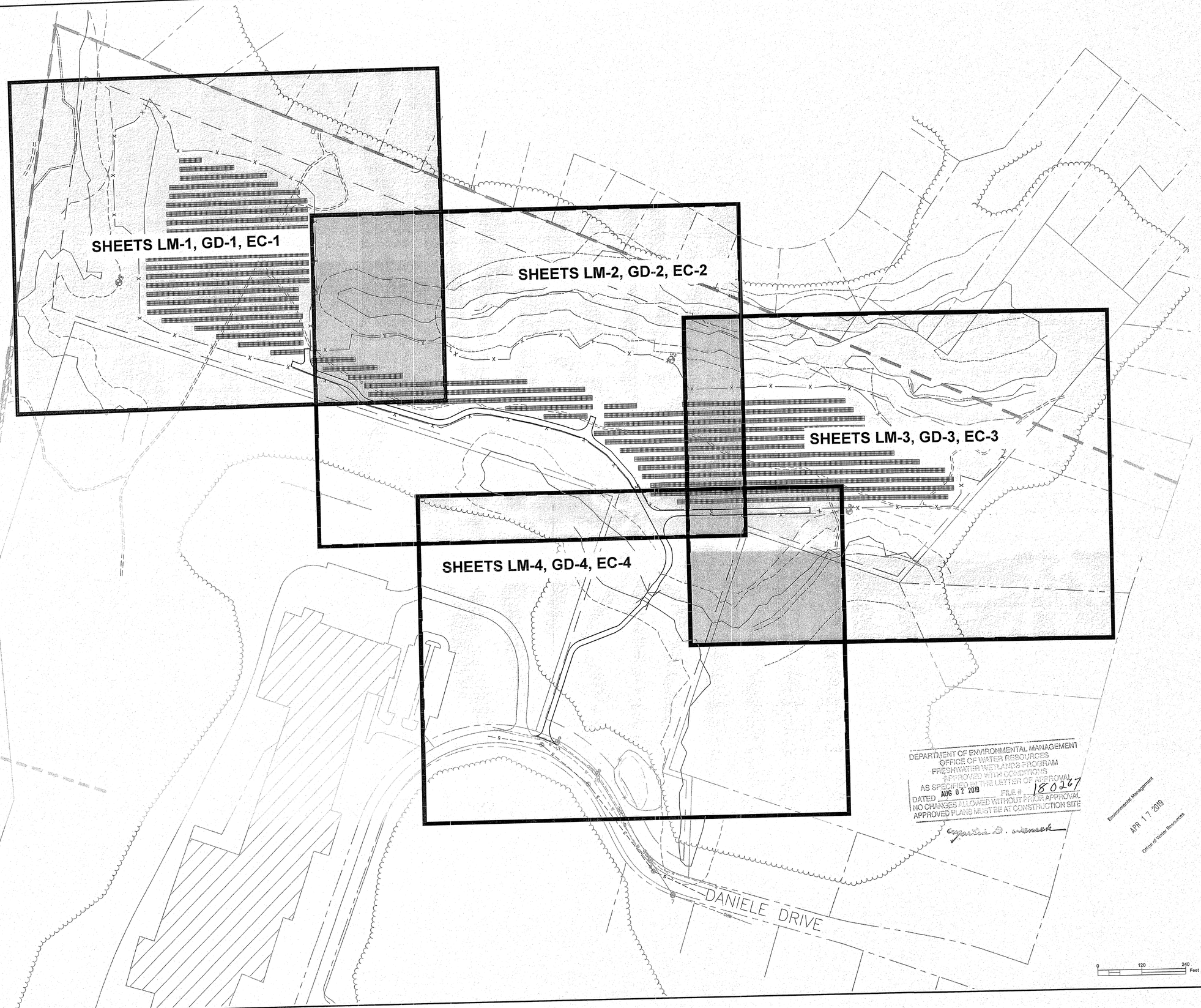
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1	RIDEM COMMENTS	2/20/19	JMG

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DESIGNED BY: JMG | APPROVED BY:

**BURRILLVIL



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DESIGNED BY: JMG	APPROVED BY:

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
INDEX SHEET

PROJECT No.: B456-000	DRAWING No. I-1
DATE OF ISSUE: 9/28/2018	
SHEET No.: 3 OF 28	
SCALE: 1"=120'	

XREF: B456-000 PROPOSED LI V:\B456-000 BURRILLVILLE SOLAR\VA GRAPHICS\CAD\Vir#A\B456-000 PROPOSED.dwg]
XREF: B456-000 EXISTING_LESS_EDITS.dwg]
XREF: B456-000 EPHes Survey [L:\Vir#\B456-000 BURRILLVILLE SOLAR\VA GRAPHICS\CAD\Vir#A\B456-000 EPHes Survey.dwg]
DATE: Feb 20, 2019 - 5:06PM
PLOTTED BY: JEFF
PLOTTED: B456-000 BURRILLVILLE SOLAR\VA GRAPHICS\CAD\Drawings\WIDEN WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_INDEX SHEET.dwg

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Office of Water Resources

JASON M. GOLD
No. 7788
REGISTERED
PROFESSIONAL ENGINEER
CIVIL

2/20/19

EDGE OF FLAGGED WETLAND 1
CLASSIFICATION: SWAMP

BETTEY BROOK

100-FOOT SIDE YARD SETBACK

ZONE I-R20 ZONE G1

DETENTION BASIN 201A

LIMITS OF DISTURBANCE (TYP.)

7 FT HIGH CHAIN LINK FENCE

100-FOOT REAR YARD SETBACK

4.2 MW± SOLAR ARRAY
11,448± MODULES

10' MIN

AREA INSIDE FENCE TO BE CLEARED, GRUBBED, LOAMED AND SEEDED

15-FOOT SIDE YARD SETBACK

SHEETS LM-2, GD-2, EC-2

SHEETS LM-1, GD-1, EC-1

SELECTIVELY CUT SHADE TREES BETWEEN FENCE AND LOD. STUMPS AND UNDERGROWTH TO REMAIN.

DETENTION BASIN 202A

0 40 80 Feet

NOTES:
1. PERMANENT SEEDING WITHIN FENCE TO BE AMERICAN MEADOWS INC. SOLAR FARM COLOR SEED MIX OR EQUIVALENT APPROVED BY OWNER.
2. SEED DISTURBED GROUND OUTSIDE FENCE WITH NEW ENGLAND WETLAND PLANTS, INC. NEW ENGLAND CONSERVATION/WILDLIFE MIX OR EQUIVALENT APPROVED BY OWNER.
3. FINAL LOCATION OF ALL ELECTRICAL EQUIPMENT, WIRES, POLES, INVERTERS, ETC. TO BE DETERMINED BY OTHERS AND APPROVED BY OWNER. ALL ELECTRICAL CONNECTION AND DISTRIBUTION WITHIN THE ARRAY SHALL BE UNDERGROUND. ALL UNDERGROUND ELECTRICAL NOT SHOWN ON THIS PLAN SET.
4. FINAL NUMBER AND LOCATION OF SOLAR MODULES TO BE DESIGNED BY OTHERS AND MAY VARY AS NEEDED WITHIN PROPOSED FENCE LINE. ALL MODULES SHALL BE INSTALLED OUTSIDE OF BUILDING SETBACK. MAX PANEL HEIGHT SHALL NOT EXCEED 10 FEET.
5. POST SIGNAGE WITH 24-HOUR EMERGENCY CONTACT INFORMATION ON EACH GATE.
6. EXTERIOR LIGHTING IS NOT PROPOSED.

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DESIGNED BY: JMG	APPROVED BY:		

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
SITE LAYOUT

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	LM-1
SHEET No.: 4 OF 26	
SCALE: 1" = 40'	

SHEETS LM–2, GD–2, EC–2

SELECTIVELY CUT SHADE TREES BETWEEN FENCE AND LOD.
STUMPS AND UNDERGROWTH TO REMAIN.

SHEETS LM–2, GD–2, EC–2

SHEETS LM–1, GD–1, EC–1

ZONE R20
ZONE GM

100-FOOT REAR YARD SETBACK

DETENTION BASIN 202A

DETENTION BASIN 202B

DETENTION BASIN 202C

SHEETS LM–3, GD–3, EC–3

CONVEYANCE SWALE 202D

SHEETS LM–1, GD–1, EC–1

QUALIFIED PERVIOUS AREA
(PROTECT FROM VEHICLE TRAFFIC)

EQUIPMENT PAD
MAINTAIN MAX. 5%
GRADE WITHIN 10 FT

7-FOOT CHAIN LINK FENCE (TYP.)

SELECTIVELY CUT SHADE TREES BETWEEN FENCE AND LOD.
STUMPS AND UNDERGROWTH TO REMAIN.

15-FOOT SIDE YARD SETBACK

CRUSHED STONE DRIVEWAY

12 FT WIDE GATE
WITH KNOX PADLOCK

4.2 MW± SOLAR ARRAY
11,448± MODULES

AREA INSIDE FENCE TO BE CLEARED, GRUBBED, LOAMED AND SEEDED

SHEETS LM–4, GD–4, EC–4

EDGE OF FLAGGED WETLAND 2
CLASSIFICATION: SWAMP

QUALIFIED PERVIOUS AREA
(PROTECT FROM VEHICLE TRAFFIC)

EQUIPMENT PAD
MAINTAIN MAX. 5%
GRADE WITHIN 10 FT

12 FT WIDE
GATE WITH
KNOX PADLOCK

SHEETS LM–2, GD–2, EC–2

0 40 80 Feet

NOTES:
1. PERMANENT SEEDING WITHIN FENCE TO BE AMERICAN MEADOWS INC. SOLAR FARM COLOR SEED MIX OR EQUIVALENT APPROVED BY OWNER.
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6. EXTERIOR LIGHTING IS NOT PROPOSED.

N

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Environmental Management

APR 17 2019

Office of Water Resources

JASON M. GOLD
No. 7788
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2/20/19

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1	RIDEM COMMENTS	2/20/19	JMG

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BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
SITE LAYOUT

PROJECT No.: B456–000	DRAWING No.
DATE OF ISSUE: 9/28/2018	**LM-2**
SHEET No.: 5 OF 26	
SCALE: 1" = 40'	

N

SHEETS LM-3, GD-3, EC-3

SHEETS LM-3, GD-3, EC-2

SHEETS LM-2, GD-2, EC-2

SHEETS LM-3, GD-3, EC-3

CONVEYANCE SWALE 202D

100-FOOT REAR YARD SETBACK

EDGE OF FLAGGED WETLAND 3
CLASSIFICATION: SWAMP

DETENTION BASIN 202D

ZONE R20
ZONE GI

4.2 MW± SOLAR ARRAY
11,448± MODULES

AREA INSIDE FENCE TO BE CLEARED, GRUBBED, LOAMED AND SEEDED

SHEETS LM-4, GD-4, EC-4

12 FT WIDE GATE WITH KNOX PADLOCK

7-FT HIGH CHAIN LINK FENCE (TYP.)

15-FOOT SIDE YARD SETBACK

7 FT HIGH CHAIN LINK FENCE

SELECTIVELY CUT SHADE TREES BETWEEN FENCE AND LOD. STUMPS AND UNDERGROWTH TO REMAIN.

SHEETS LM-3, GD-3, EC-3

0 40 80 Feet

NOTES:
1. PERMANENT SEEDING WITHIN FENCE TO BE AMERICAN MEADOWS INC. SOLAR FARM COLOR SEED MIX OR EQUIVALENT APPROVED BY OWNER.
2. SEED DISTURBED GROUND OUTSIDE FENCE WITH NEW ENGLAND WETLAND PLANTS, INC. NEW ENGLAND CONSERVATION/WILDLIFE MIX OR EQUIVALENT APPROVED BY OWNER.
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6. EXTERIOR LIGHTING IS NOT PROPOSED.

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JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 4/20/19

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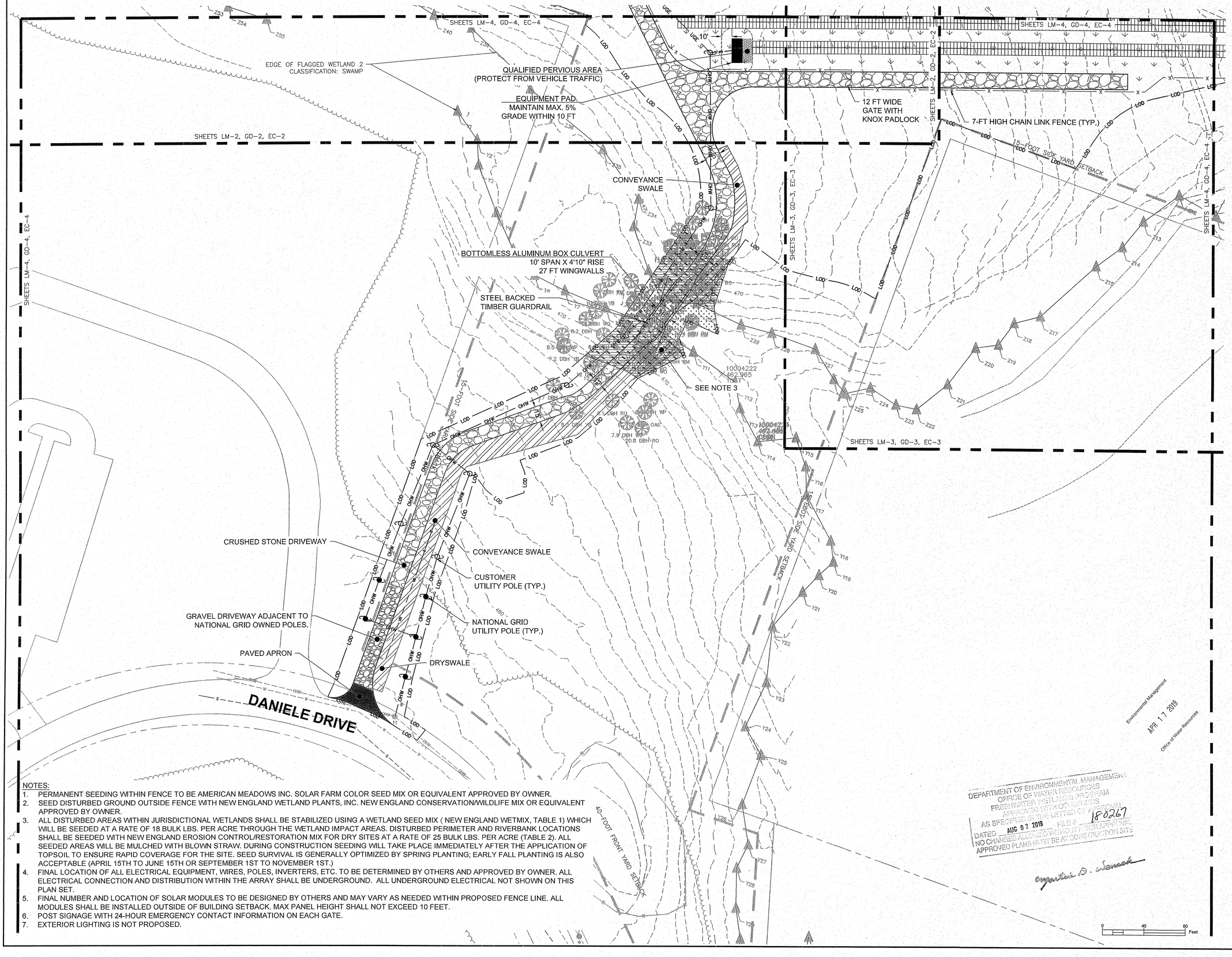
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DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
SITE LAYOUT

PROJECT No.: B456-000	DRAWING No. LM-3
DATE OF ISSUE: 9/28/2018	
SHEET No.: 6 OF 26	
SCALE: 1" = 40'	



NOTES:

1. PERMANENT SEEDING WITHIN FENCE TO BE AMERICAN MEADOWS INC. SOLAR FARM COLOR SEED MIX OR EQUIVALENT APPROVED BY OWNER.
2. SEED DISTURBED GROUND OUTSIDE FENCE WITH NEW ENGLAND WETLAND PLANTS, INC. NEW ENGLAND CONSERVATION/WILDLIFE MIX OR EQUIVALENT APPROVED BY OWNER.
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BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICAITION TO ALTER WETLANDS
SITE LAYOUT

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	LM-4
SHEET No.: 7 OF 26	
SCALE: 1" = 40'	

ROCK OUTLET PROTECTION LEVEL SPREADER
EL: 414.50

SPILLWAY
CREST EL: 417.75
CREST LENGTH: 10 FT

FLARED CONCRETE END SECTION
RIDOT 2.3.0

12 IN RCP
INV IN: 415.00
INV OUT: 414.50
L=50 FT
S=1%

6 IN PVC
INV IN: 415.10
INV OUT: 415.00
L=10 FT
S=1%

EDGE OF FLAGGED WETLAND 1
CLASSIFICATION: SWAMP

BETTEY BROOK

100-FOOT SIDE YARD SETBACK

100-FOOT REAR YARD SETBACK

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 418.00
1 IN LOW FLOW ORIFICE INV.:416.10

OUTLET CONTROL STRUCTURE - 201A
RIM: 417.20
16 IN X 8.4 IN NOTCH INV.: 416.50
6-INCH UNDERDRAIN INV.: 415.00

EXTENDED DRY DETENTION BASIN - 201A
BERM ELEV: 419
BERM WIDTH: 5 FT
BOTTOM ELEV: 416
SIDE SLOPES: 3H:1V

ZONE/GI
ZONE IR20

15-FOOT SIDE YARD SETBACK

SHEETS LM-2, GD-2, EC-2

SHEETS LM-1, GD-1, EC-1

ROCK OUTLET PROTECTION APRON
S = 33.3%

6 IN PVC
INV IN: 462.00
INV OUT: 461.70
L = 29.8 FT
S = 1 %

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 465.00
1 IN LOW FLOW ORIFICE INV.: 463.00

EXTENDED DRY DETENTION BASIN - 202A
BERM ELEV: 466
BERM WIDTH: 5 FT
BOTTOM ELEV: 463
SIDE SLOPES: 3H:1V

SPILLWAY
CREST EL: 465.75
CREST LENGTH: 10 FT

INSTALL TRM ON SLOPE DOWNSTREAM OF SPILLWAY

SHEETS LM-1, GD-1, EC-1

N

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Environmental Management

APR 17 2019

Office of Water Resources

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
2/20/19

0 40 80 Feet

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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
GRADING AND DRAINAGE PLAN

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	GD-1
SHEET No.: 8 OF 26	
SCALE: 1"=40'	

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DATE: Feb 20, 2019 - 2:09PM
FILENAME: X:\B456-000 BURRILLVILLE SOLAR\04 DRAWINGS\CAD\Drawings\WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_GRADING AND DRAINAGE.dwg
XREF: B456-000 DEPHES Survey [\\ess\vol4\B456-000 BURRILLVILLE SOLAR\04 DRAWINGS\CAD\Xrefs\B456-000 DEPHES Survey.dwg]
XREF: B456-000 DEPHES Survey [\\ess\vol4\B456-000 BURRILLVILLE SOLAR\04 DRAWINGS\CAD\Xrefs\B456-000 DEPHES Survey.dwg]
XREF: B456-000 EXISTING_SSS_EDITS [\\ess\vol4\B456-000 BURRILLVILLE SOLAR\04 DRAWINGS\CAD\Xrefs\B456-000 EXISTING_SSS_EDITS.dwg]
XREF: B456-000 PROPOSED_LAYOUT [\\ess\vol4\B456-000 BURRILLVILLE SOLAR\04 DRAWINGS\CAD\Xrefs\B456-000 PROPOSED.dwg]

XREF: B456-000 PROPOSED [J:\B456-000 BURRILLVILLE SOLAR\A GRAPHICS\CAD\Xrefs\B456-000 PROPOSED.dwg]
XREF: B456-000 EXISTING_ESS EDITS [J:\B456-000 BURRILLVILLE SOLAR\A GRAPHICS\CAD\Xrefs\B456-000 EXISTING_ESS EDITS.dwg]
XREF: B456-000 BPrelim Survey [\\Ad\vol\B456-000 BURRILLVILLE SOLAR\A GRAPHICS\CAD\Xrefs\B456-000 BPrelim Survey.dwg]

SHEETS LM-2, GD-2, EC-2

SHEETS LM-1, GD-1, EC-1

ZONE: R20

ZONE: C1

100-FOOT REAR YARD SETBACK

ROCK OUTLET PROTECTION APRON
S = 33.3%

6 IN PVC
INV IN: 462.00
INV OUT: 461.70
L = 29.8 FT
S = 1 %

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 465.00
1 IN LOW FLOW ORIFICE INV.: 463.00

EXTENDED DRY DETENTION BASIN - 202A
BERM ELEV: 466
BERM WIDTH: 5 FT
BOTTOM ELEV: 463
SIDE SLOPES: 3H:1V

SPILLWAY
CREST EL: 465.75
CREST LENGTH: 10 FT

INSTALL TRM ON SLOPE DOWNSTREAM OF SPILLWAY

SPILLWAY
CREST EL: 469
CREST LENGTH: 10 FT

EXTENDED DRY DETENTION BASIN - 202B
BERM ELEV: 470
BERM WIDTH: 5 FT
BOTTOM ELEV: 468
SIDE SLOPES: 3H:1V

ROCK OUTLET PROTECTION APRON
S = 33.3%

ROCK OUTLET PROTECTION
S = 33.3%

6 IN PVC
INV IN: 457.00
INV OUT: 456.69
L = 31.3 FT
S = 0.99%

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 460.00
1 IN LOW FLOW ORIFICE INV.: 458.00

EXTENDED DRY DETENTION BASIN - 202C
BERM ELEV: 461
BERM WIDTH: 5 FT
BOTTOM ELEV: 458
SIDE SLOPES: 3H:1V

SPILLWAY
CREST EL: 460.00
CREST LENGTH: 10 FT

SHEETS LM-3, GD-3, EC-3

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 470.00
1 IN LOW FLOW ORIFICE INV.:468.00

6 IN PVC
INV IN: 467.00
INV OUT: 466.78
L = 22.3 FT
S = 1%

SHEETS LM-1, GD-1, EC-1

MAINTAIN MAX. 5% GRADE WITHIN 10 FT OF EQUIPMENT PAD

15-FOOT SIDE YARD SETBACK

SHEETS LM-4, GD-4, EC-4

EDGE OF FLAGGED WETLAND 2
CLASSIFICATION: SWAMP

MAINTAIN MAX. 5% GRADE WITHIN 10 FT OF EQUIPMENT PAD

SHEETS LM-2, GD-2, EC-2

SHEETS LM-3, GD-3, EC-3

SHEETS LM-2, GD-2, EC-2

0 40 80 Feet

N

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 180267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED AUG 02 2019 FILE # 18-0267
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Environmental Management
APR 17 2019
Office of Water Resources

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 4/20/19

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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
GRADING AND DRAINAGE PLAN

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	GD-2
SHEET No.: 9 OF 26	
SCALE: 1"=40'	

DATE: Feb 20, 2019 - 5:09PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\A GRAPHICS\CAD\Drawings\RIDEM WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_GRADING AND DRAINAGE.dwg

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SHEETS LM-3, GD-3, EC-3

SHEETS LM-3, GD-3, EC-3

SHEETS LM-2, GD-2, EC-2

CONVEYANCE SWALE 202D
LINE WITH TRM
INSTALL CHECK DAMS

STONE CHECK DAM (TYP.)

100-FOOT REAR YARD SETBACK

EDGE OF FLAGGED WETLAND 3
CLASSIFICATION: SWAMP

ROCK OUTLET PROTECTION LEVEL SPREADER
EL: 409.00

FLARED CONCRETE END SECTION
RIDOT 2.3.0

6 IN VERTICAL SLOTTED DRAIN
TOP EL: 418.00
1 IN LOW FLOW ORIFICE INV.: 416.00

SPILLWAY
CREST EL: 419.90
CREST LENGTH: 50 FT

ZONE R20
ZONE GI

18 IN RCP
INV IN: 413.50
INV OUT: 412.89
L = 61 FT
S = 1%

EXTENDED DRY DETENTION BASIN - 202D
BERM ELEV: 421.00
BERM WIDTH: 5 FT
BOTTOM ELEV: 416
SIDE SLOPES: 3H:1V

OUTLET CONTROL STRUCTURE - 202D
RIM: 419.75
32 IN X 6 IN NOTCH.: 419.25
10 IN X 12.6 IN NOTCH.: 418.20
3 IN X 5.3 IN NOTCH.: 417.76
6-INCH INV.: 415.00
18-INCH RCP INV.: 413.50

6 IN PVC
INV IN: 415.10
INV OUT: 415.00
L = 10 FT
S = 1%

SHEETS LM-4, GD-4, EC-4

SHEETS LM-2, GD-2, EC-2

15-FOOT SIDE YARD SETBACK

SHEETS LM-4, GD-4, EC-4

SHEETS LM-3, GD-3, EC-3

SHEETS LM-3, GD-3, EC-3

10000005
0.000
WF

10000004
0.000
WF

10000003
0.000
WF

0 40 80 Feet

N

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPLICATION NUMBER
AS SPECIFIED IN LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES AS CONSTRUCTED WITHOUT PRIOR APPROVAL
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Environmental Management
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Office of Water Resources

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OFFICE OF WATER RESOURCES
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DESIGNED BY: JMG	APPROVED BY:		

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
GRADING AND DRAINAGE PLAN

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	GD-3
SHEET No.: 10 OF 26	
SCALE: 1"=40'	

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XREF: B456-000 EXISTING_LES (J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 EXISTING_LES.dwg)
XREF: B456-000 DPrwtr Survey (J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DPrwtr Survey.dwg)

DATE: Feb 20, 2019 - 5:05PM
DRAWING: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WDRM WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_GRADING AND DRAINAGE.dwg

XREF[8456-000 PROPOSED]:B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WBEM WETLAND APPLICATION TO ALTER\B456-000 PROPOSED.dwg]
XREF[8456-000 EXISTING_ESS EDITS]:\\ess\Work\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WBEM WETLAND APPLICATION TO ALTER\B456-000 EXISTING_ESS EDITS.dwg]
XREF[8456-000 DPrwtr Survey]:\\ess\Work\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DPrwtr Survey.dwg]

SHEETS LM-4, GD-4, EC-4

EDGE OF FLAGGED WETLAND 2
CLASSIFICATION: SWAMP

MAINTAIN MAX. 5% GRADE
WITHIN 10 FT OF EQUIPMENT PAD

SHEETS LM-2, GD-2, EC-2

SHEETS LM-4, GD-4, EC-4

SHEETS LM-2, GD-2, EC-2

SHEETS LM-3, GD-3, EC-3

SHEETS LM-4, GD-4, EC-4

15-FOOT SIDE YARD SETBACK

CONVEYANCE SWALE 203G
LINE WITH TRM
INSTALL CHECK DAMS

CONVEYANCE SWALE 203F
LINE WITH TRM
INSTALL CHECK DAMS

CONVEYANCE SWALE 203E
LINE WITH TRM
INSTALL CHECK DAMS

CONVEYANCE SWALE 203D
LINE WITH TRM
INSTALL CHECK DAMS

SHEETS LM-3, GD-3, EC-3

CONVEYANCE SWALE 203C
LINE WITH TRM
INSTALL CHECK DAMS

CHECK DAM (TYP.)

4-IN SOLID PVC
INV IN: 491.02
INV OUT: 490.57
L=45FT
S=1%

4-IN PERFORATED PVC UNDERDRAIN
INV IN: 492.00
INV OUT: 491.02
L=98 FT
S=1%

CONVEYANCE/ DRY SWALE 203B
INSTALL CHECK DAMS

15-FOOT SIDE YARD SETBACK

DANIELE DRIVE

40-FOOT FRONT YARD SETBACK

0 40 80 Feet

N

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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FRESHWATER WETLANDS PROGRAM
APPROVED
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Jason D. Schmidt

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL

Jason Gold 2/20/19

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OFFICE OF WATER RESOURCES
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Jason D. Schmidt

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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
GRADING AND DRAINAGE PLAN

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	GD-4
SHEET No.: 11 OF 26	
SCALE: 1"=40'	

DATE: Feb 20, 2019 - 8:46PM
FILENAME: P:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WBEM WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_GRADING AND DRAINAGE.dwg
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XREF: B456-000 PROPOSED LAYOUT.dwg XREF: B456-000 BURRILLVILLE SOLAR.ctb XREF: B456-000 DISTRICTS.dwg XREF: B456-000 EXISTING_ESS_EDITS.dwg XREF: B456-000 BURRILLVILLE SOLAR.ctb XREF: B456-000 DiPrete Survey (1).dwg

EDGE OF FLAGGED WETLAND 1
CLASSIFICATION: SWAMP

BETTEY BROOK

100-FOOT SIDE YARD SETBACK

ZONE I R20

100-FOOT REAR YARD SETBACK

DIVERSION

TST-1

TST-1 DRAINAGE AREA
1.41 AC ±

DIVERSION

TST-2

TST-2 DRAINAGE AREA
2.52 AC ±

TEMPORARY SOIL STOCKPILE

15-FOOT SIDE YARD SETBACK

SHEETS LM-2, GD-2, EC-2

SHEETS LM-1, GD-1, EC-1

SHEETS LM-1, GD-1, EC-1

COMBINED STRAW BALE AND SILT FENCE / LIMITS OF DISTURBANCE

NOTES:
1. LOCATION OF ROLL-OFF CONTAINER, CONCRETE WASHOUT AREA, AND SOIL STOCKPILE TO BE LOCATED AS FAR FROM WETLAND EDGE AS PRACTICAL. FINAL LOCATION TO BE DETERMINED BY CONTRACTOR AS APPROVED BY THE OWNER.
2. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH OR COVERED WITH POLYETHYLENE SHEETING.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED AUG 02 2019 FILE # 18-0267
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APR 17 2019

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JASON M. GOLD
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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG

DRAWN BY: PKN/GJR | CHECKED BY: JMG
DESIGNED BY: JMG | APPROVED BY:

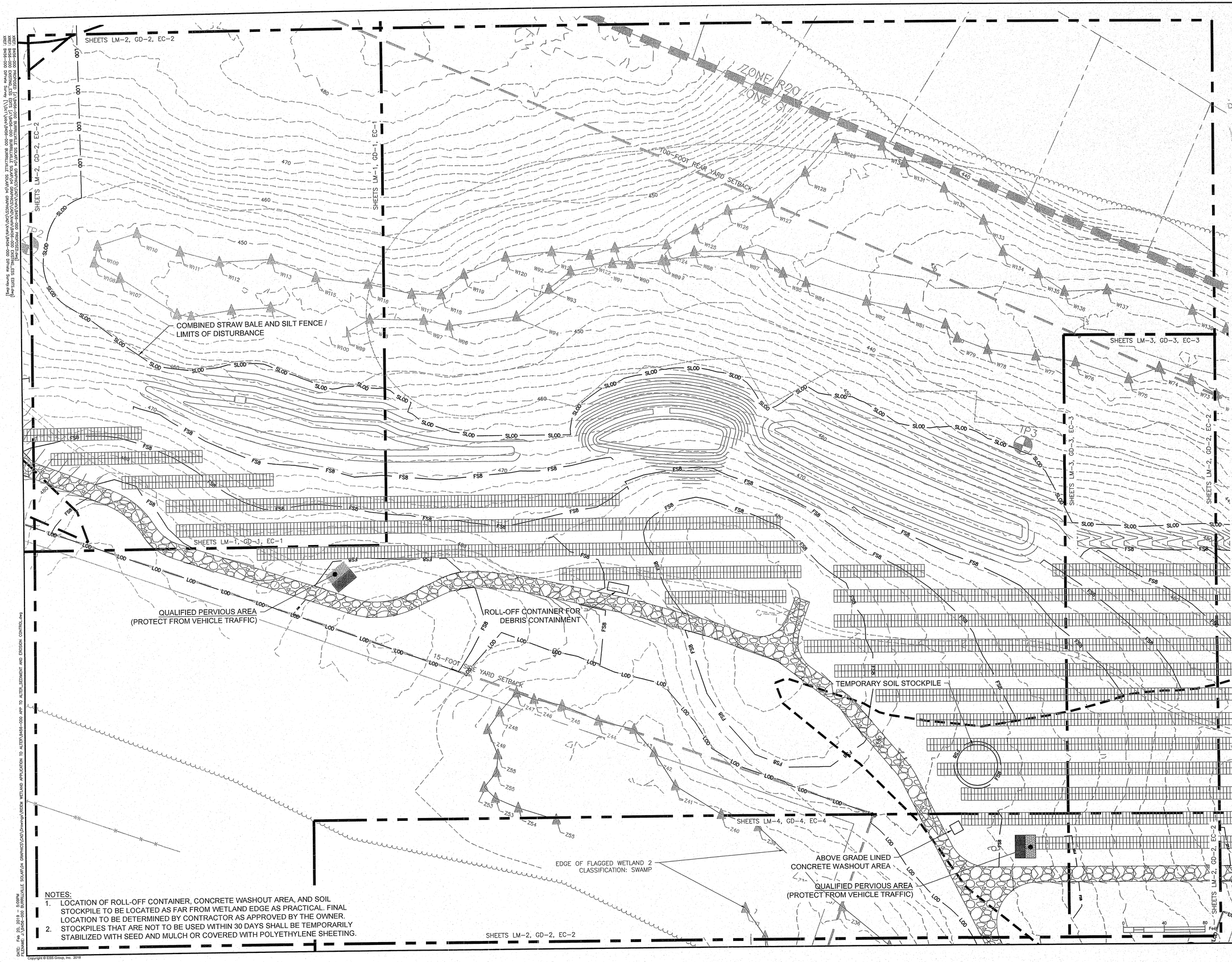
BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
EROSION AND SEDIMENT CONTROL

PROJECT No.: B456-000
DATE OF ISSUE: 9/28/2018
SHEET No.: 12 OF 26
SCALE: 1"=40'

DRAWING No.
EC-1

DATE: Feb 20, 2019 - 5:09PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_SEDIMENT AND EROSION CONTROL.dwg
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NOTES:

1. LOCATION OF ROLL-OFF CONTAINER, CONCRETE WASHOUT AREA, AND SOIL STOCKPILE TO BE LOCATED AS FAR FROM WETLAND EDGE AS PRACTICAL. FINAL LOCATION TO BE DETERMINED BY CONTRACTOR AS APPROVED BY THE OWNER.
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

AUG 02 2019 18-0267

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Jason Gold 7/20/19

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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR	CHECKED BY: JMG		
DESIGNED BY: JMG	APPROVED BY:		

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
EROSION AND SEDIMENT CONTROL

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	EC-2
SHEET No.: 13 OF 26	
SCALE: 1"=40'	

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XREF: B456-000 PROPOSED LOD.dwg XREF: B456-000 EXISTING_ESS EDITS.dwg XREF: B456-000 DiPrete Survey [\\Vol1\Jobs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\04D\Working\B456-000 PROPOSED.dwg] XREF: B456-000 EXISTING_ESS EDITS.dwg [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\04D\Working\B456-000 EXISTING_ESS EDITS.dwg] XREF: B456-000 DiPrete Survey.dwg
DATE: Feb 20, 2019 - 8:49am
PLOTTED BY: KAREN CHAN
PLOTTED: B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\04D\Drawings\WRDM WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_SEDIMENT AND EROSION CONTROL.dwg

SHEETS LM-3, GD-3, EC-3

SHEETS LM-2, GD-2, EC-2

SHEETS LM-3, GD-3, EC-3

EDGE OF FLAGGED WETLAND 3
CLASSIFICATION: SWAMP

100-FOOT REAR YARD SETBACK

ZONE R20
ZONE GI

TST-3

TST-3 DRAINAGE AREA
4.95 AC ±

COMBINED STRAW BALE AND SILT FENCE/
LIMITS OF DISTURBANCE

DIVERSION

SHEETS LM-4, GD-4, EC-4

SHEETS LM-2, GD-2, EC-2

ROLL-OFF CONTAINER FOR
DEBRIS CONTAINMENT

15-FOOT SIDE YARD SETBACK

SHEETS LM-4, GD-4, EC-4

SHEETS LM-3, GD-3, EC-3

SHEETS LM-3, GD-3, EC-3

SLOD

LOD

FSB

TP

10000005
0.000
WF

10000004
0.000
WF

10000003
0.000
WF

NOTES:
1. LOCATION OF ROLL-OFF CONTAINER, CONCRETE WASHOUT AREA, AND SOIL STOCKPILE TO BE LOCATED AS FAR FROM WETLAND EDGE AS PRACTICAL. FINAL LOCATION TO BE DETERMINED BY CONTRACTOR AS APPROVED BY THE OWNER.
2. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH OR COVERED WITH POLYETHYLENE SHEETING.

0 40 80 Feet

N

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED AUG 02 2019 FILE # 180267
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Environmental Management
APR 17 2019
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DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

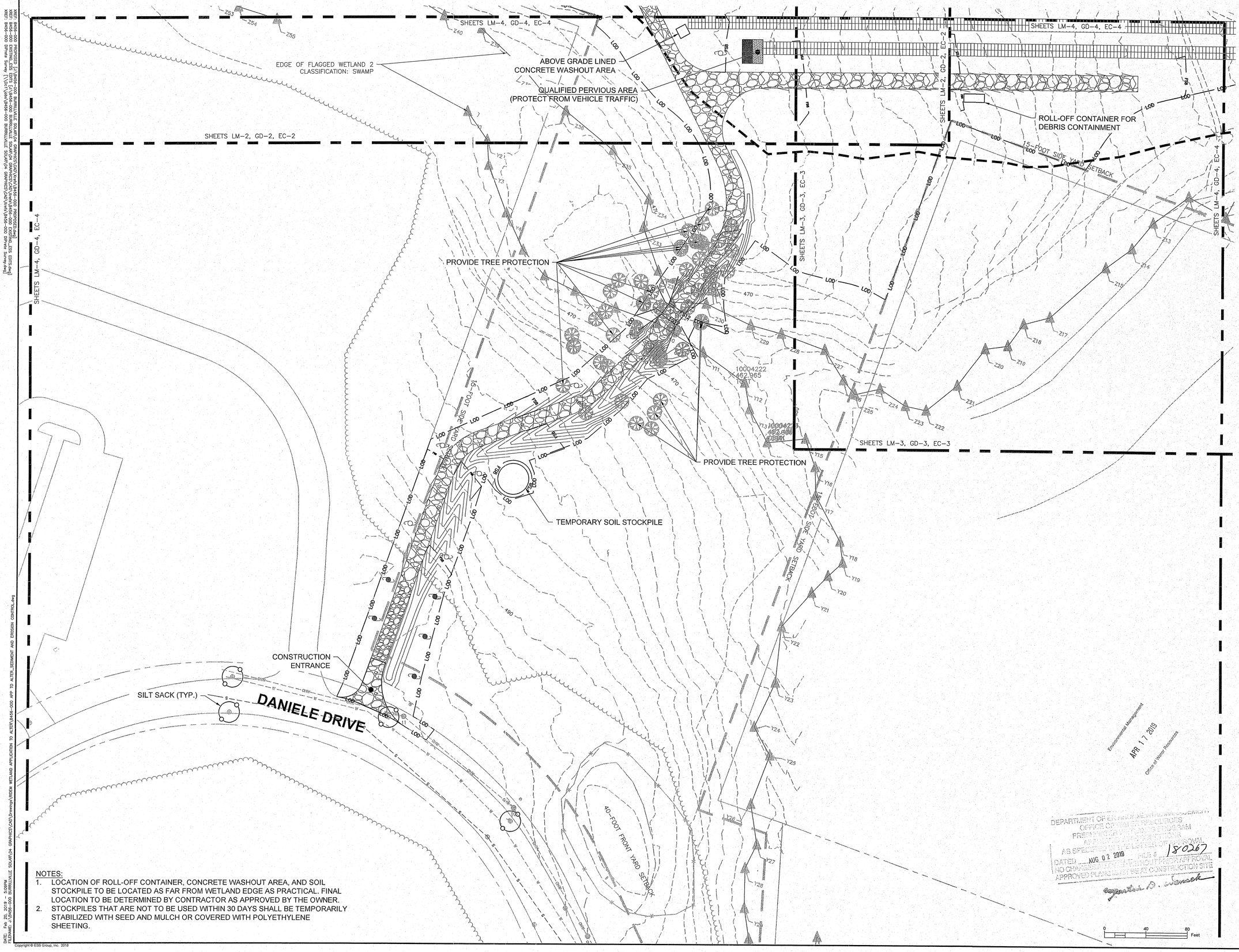
APPLICATION TO ALTER WETLANDS
EROSION AND SEDIMENT CONTROL

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	EC-3
SHEET No.: 14 OF 26	
SCALE: 1"=40'	

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XREF: B456-000 EXISTING_CONDITIONS_SURVEY.dwg [C:\Users\jmg\ESS GROUP, INC\BURRILLVILLE SOLAR\VA GRAPHICS\CAD\VHA\B456-000 BURRILLVILLE SOLAR VA GRAPHICS\CAD\VHA\B456-000 EXISTING_CONDITIONS_SURVEY.dwg]
XREF: B456-000 DPHeris Survey [C:\Users\jmg\ESS GROUP, INC\BURRILLVILLE SOLAR\VA GRAPHICS\CAD\VHA\B456-000 BURRILLVILLE SOLAR VA GRAPHICS\CAD\VHA\B456-000 DPHeris Survey.dwg]
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XREF: B456-000 PROPOSED [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WDEA WETLAND APPLICATION TO ALTER\B456-000 PROPOSED.dwg]
XREF: B456-000 EXISTING_LESS EDITS [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 EXISTING_LESS EDITS.dwg]
XREF: B456-000 DrPrint Survey [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DrPrint Survey.dwg]



NOTES:
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Environmental Management
APR 17 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 180267
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JASON M. GOLD
No. 7788
REGISTERED
PROFESSIONAL ENGINEER
CIVIL
2/20/19

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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR	CHECKED BY: JMG		
DESIGNED BY: JMG	APPROVED BY:		

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
EROSION AND SEDIMENT CONTROL

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	EC-4
SHEET No.: 15 OF 26	
SCALE: 1"=40'	

DATE: Feb 20, 2019 - 5:09PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WDEA WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_SEDIMENT AND EROSION CONTROL.dwg

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DRAINAGE AREA 101 / DESIGN POINT 1 (WETLAND 1)	
AREA (AC)	12.30
CURVE NUMBER (CN)	54
1- YEAR FLOW (CFS)	0.18
2-YEAR FLOW (CFS)	0.74
10-YEAR FLOW (CFS)	4.77
25-YEAR FLOW (CFS)	9.60
100-YEAR FLOW (CFS)	21.82

WETLAND 2/ DESIGN POINT 2	
AREA (AC)	26.33
CURVE NUMBER (CN)	55
1- YEAR FLOW (CFS)	0.49
2-YEAR FLOW (CFS)	1.91
10-YEAR FLOW (CFS)	10.96
25-YEAR FLOW (CFS)	21.40
100-YEAR FLOW (CFS)	47.59

DRAINAGE AREA 103	
AREA (AC)	19.45
CURVE NUMBER (CN)	56
1- YEAR FLOW (CFS)	0.69
2-YEAR FLOW (CFS)	2.44
10-YEAR FLOW (CFS)	14.03
25-YEAR FLOW (CFS)	27.26
100-YEAR FLOW (CFS)	59.72

DRAINAGE AREA 103A	
AREA (AC)	1.41
CURVE NUMBER (CN)	90
1- YEAR FLOW (CFS)	2.69
2-YEAR FLOW (CFS)	3.47
10-YEAR FLOW (CFS)	5.71
25-YEAR FLOW (CFS)	7.45
100-YEAR FLOW (CFS)	10.94

WETLAND 3/DESIGN POINT 3	
1- YEAR FLOW (CFS)	0.69
2-YEAR FLOW (CFS)	2.44
10-YEAR FLOW (CFS)	14.03
25-YEAR FLOW (CFS)	30.72
100-YEAR FLOW (CFS)	67.93

SOILS TABLE			
NAME	ABBREVIATION	HSG	AREA (AC)
CANTON AND CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	CdB	B	0.10
CANTON AND CHARLTON FINE SANDY LOAMS, 0 TO 8 PERCENT SLOPES, VERY STONY	ChB	B	43.8
CANTON AND CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES, VERY STONY	ChC	B	14.6
HINKLEY LOAMY SAND, 8 TO 15 PERCENT SLOPES	HkC	A	0.5
SUTTON EXTREMELY STONY FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES	SvB	B	0.5

WETLAND 1
101
WETLAND 2
102
103
103A
WETLAND 3
ROOFS HSG B CN=98
WOODS HSG B CN-55
GRASS HSG B CN=51
PAVEMENT HSG B CN=98
WATER SURFACE HSG B CN=98
ChB HSG B
HkC HSG A
Wa HSG D
HkA HSG A
Ss HSG B
CdA HSG B
SvB HSG B
CdB HSG B
ChC HSG B

0 120 240 Feet

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DATED AUG 02 2019 FILE # 18-0267
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1	RIDEM COMMENTS	2/20/19	JMG
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DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
PRE-DEVELOPMENT DRAINAGE AREA

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	WS-1
SHEET No.: 16 OF 26	
SCALE: 1"=120'	

DRAINAGE AREA	201U	201A
AREA (AC)	8.9	3.4
CURVE NUMBER (CN)	55	61
1- YEAR FLOW (CFS)	0.17	0.17
2-YEAR FLOW (CFS)	0.67	0.67
10-YEAR FLOW (CFS)	3.89	3.89
25-YEAR FLOW (CFS)	7.60	7.60
100-YEAR FLOW (CFS)	16.88	16.88

DRAINAGE AREA	202U	202A	202B	202C	202D
AREA (AC)	15.4	1.9	0.3	1.1	7.6
CURVE NUMBER (CN)	56	63	61	62	61
1- YEAR FLOW (CFS)	0.38	0.25	0.03	0.15	0.68
2-YEAR FLOW (CFS)	1.35	0.52	0.10	0.36	1.60
10-YEAR FLOW (CFS)	6.98	1.68	0.38	1.28	5.73
25-YEAR FLOW (CFS)	13.32	2.79	0.65	2.17	9.84
100-YEAR FLOW (CFS)	28.89	5.36	1.27	4.23	19.41

DRAINAGE AREA	203U	203A	203B	203C	203D	203E	203F	203G
AREA (AC)	18.9	1.4	0.1	0.3	0.02	0.01	0.04	0.05
CURVE NUMBER (CN)	56	90	75	76	64	61	75	82
1- YEAR FLOW (CFS)	0.68	2.69	0.10	0.27	0.01	0.00	0.04	0.09
2-YEAR FLOW (CFS)	2.38	3.47	0.15	0.41	0.01	0.01	0.06	0.13
10-YEAR FLOW (CFS)	13.68	5.71	0.33	0.86	0.04	0.02	0.13	0.24
25-YEAR FLOW (CFS)	26.57	7.45	0.49	1.23	0.07	0.04	0.19	0.33
100-YEAR FLOW (CFS)	58.21	10.94	0.82	2.02	0.14	0.07	0.32	0.52

DESIGN POINT PEAK RUNOFF

DESIGN STORM	DP-1 WETLAND 1	DP-2 WETLAND 2	DP-3 WETLAND 3
1- YEAR FLOW (CFS)	0.17	0.49	0.68
2-YEAR FLOW (CFS)	0.68	1.62	2.42
10-YEAR FLOW (CFS)	4.37	10.83	14.19
25-YEAR FLOW (CFS)	9.58	21.41	31.05
100-YEAR FLOW (CFS)	21.84	47.47	68.18

WOODS HSG A CN=30
WETLAND 1
WOODS HSG B CN=55
Wa HSG D
HkC HSG A
Ss HSG B
GRASS HSG B CN=61
GRAVEL SURFACE HSG B CN=96
ROOFS HSG B CN=98
WETLAND 2
WETLAND 3
CdB HSG B
ChB HSG B
SvB HSG B
WATER SURFACE HSG B CN=98
PAVEMENT HSG B CN=98
201U
201A
202U
202A
202B
202C
202D
203U
203A

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JASON M. GOLD
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CIVIL
2/20/19

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APR 17 2019
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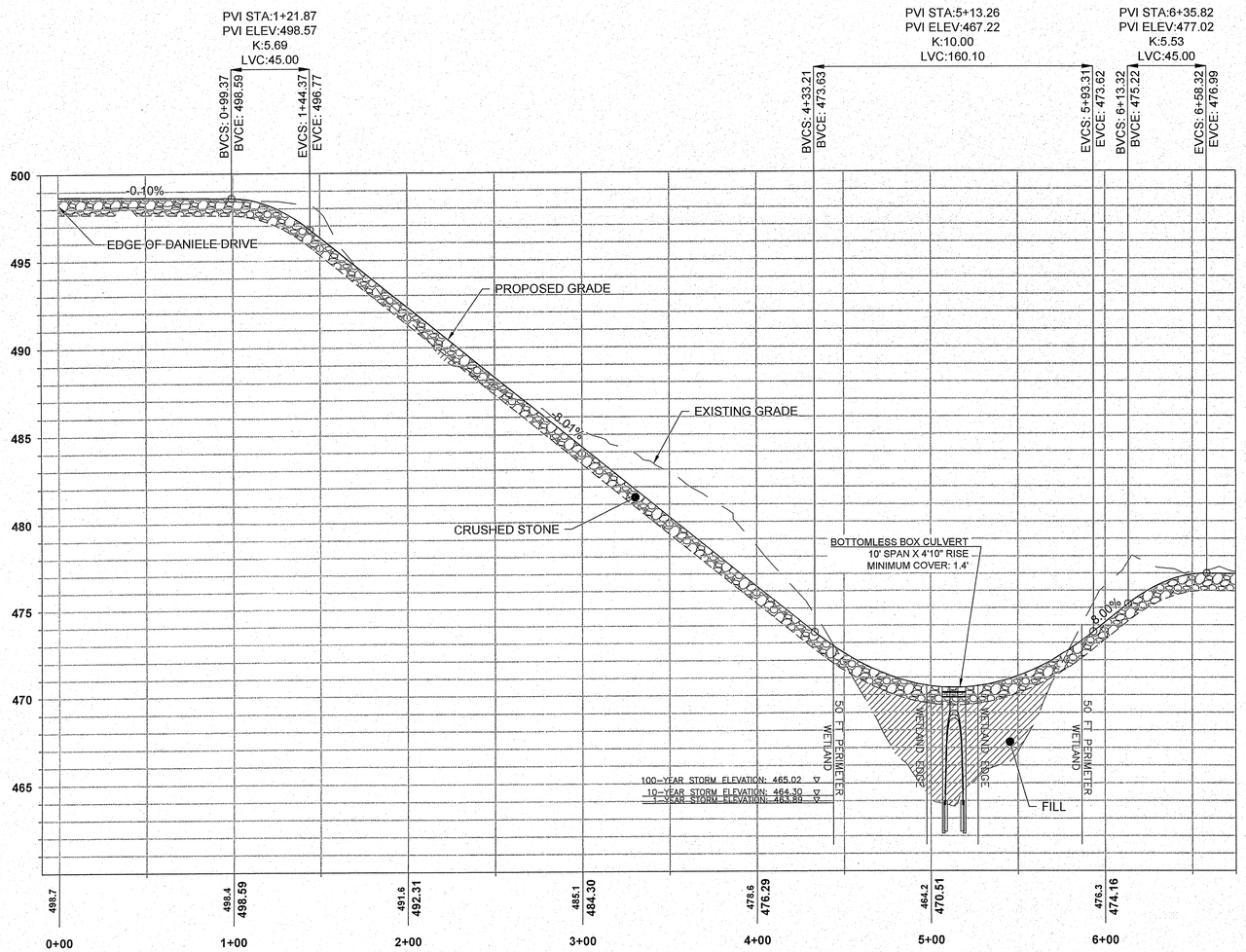
BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
POST-DEVELOPMENT DRAINAGE AREA

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	WS-2
SHEET No.: 17 OF 26	
SCALE: 1"=120'	

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FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\RIDEM WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_POST-DEVELOPMENT DRAINAGE AREA.dwg
XREF: B456-000 DRPrelim Survey [J:\Jobs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\B456-000 DISTRICT_ESS_DATE.dwg]
XREF: B456-000 DRPrelim Survey [J:\Jobs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\B456-000 DRPrelim Survey.dwg]



1/18 ACCESS ROAD & WETLAND CROSSING PROFILE

SCALE: 1" = 40' H, 1"=4' V

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
ACCESS ROAD PROFILE

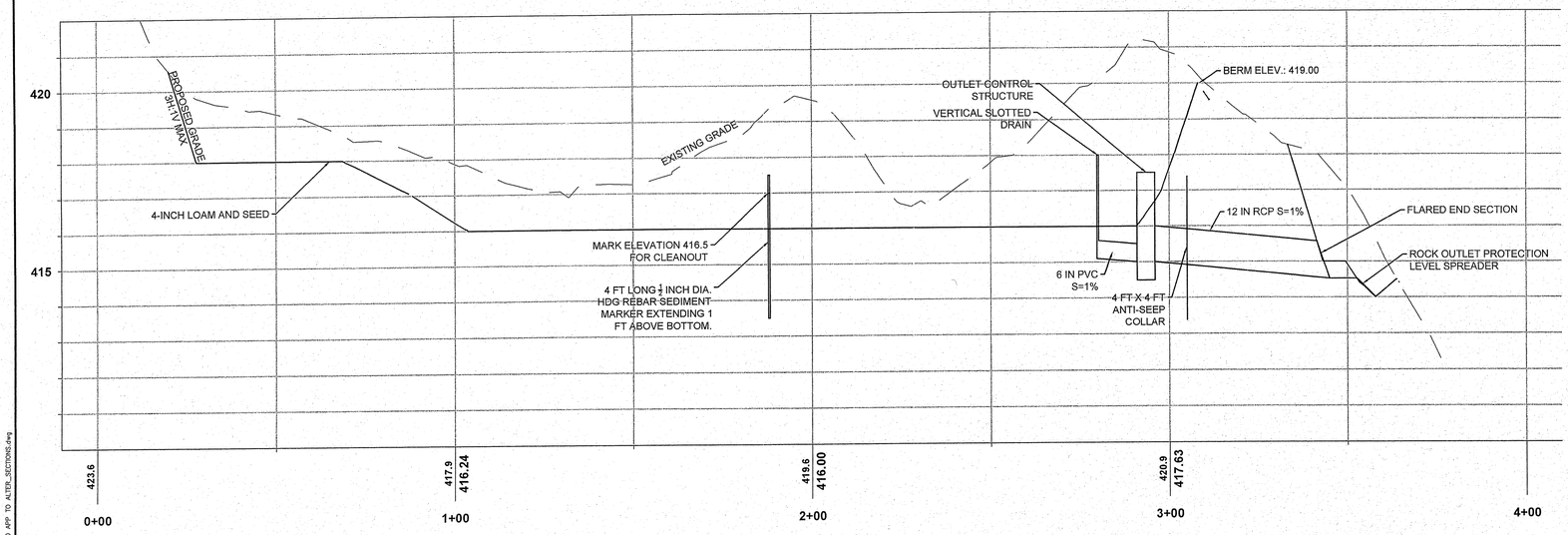
PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	P-1
SHEET No.: 18 OF 26	
SCALE: AS SHOWN	

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AS SPECIFIED IN THE APPROVAL
DATED AUG 02 2019 180269
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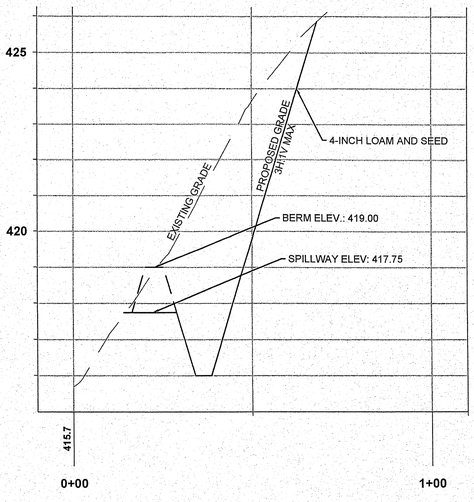
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DATE: Feb 20, 2019 - 5:10PM
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XREF: B456-000 DISTRBLSS EDITS [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DISTRBLSS EDITS.dwg]
XREF: B456-000 DrTree Survey [J:\Act1\Xrefs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DrTree Survey.dwg]



1/19 DETENTION BASIN 201A - SECTION A

SCALE: 1" = 20' H, 1"=2' V



2/19 DETENTION BASIN 201A - SECTION B

SCALE: 1" = 20' H, 1"=2' V

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Jason Gold 4/20/19

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BURRILLVILLE, RI

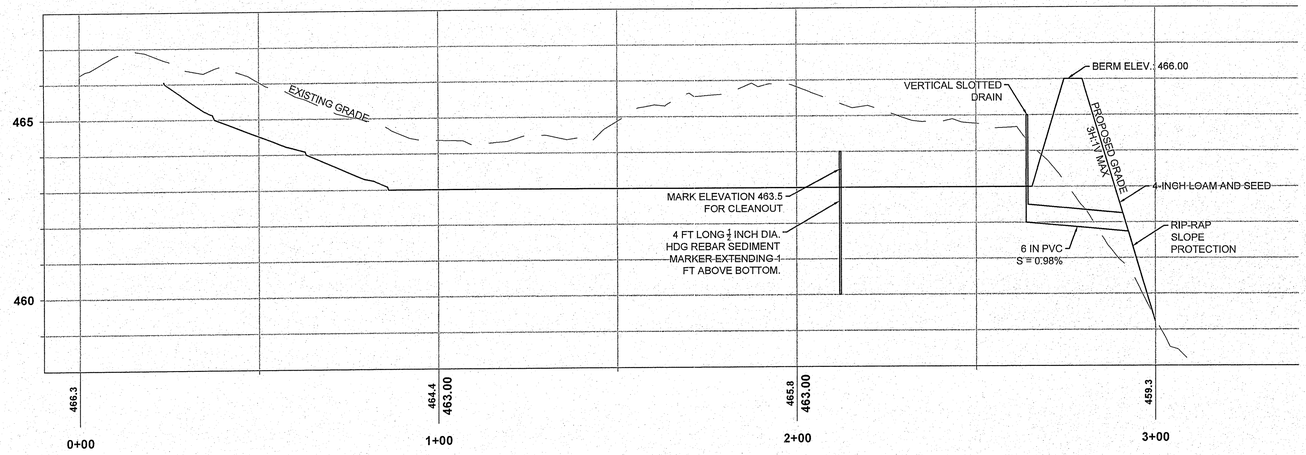
APPLICATION TO ALTER WETLANDS
BASIN SECTIONS

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	S-1
SHEET No.: 19 OF 26	
SCALE: AS SHOWN	

DATE: Feb 20, 2019 - 5:10PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\VIRGIN WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_SECTIONS.dwg

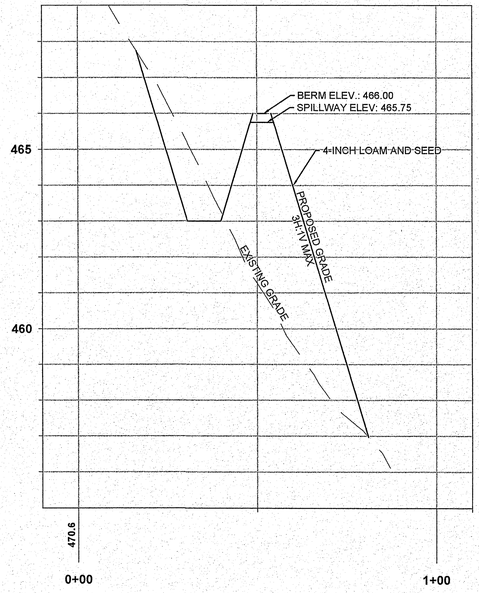
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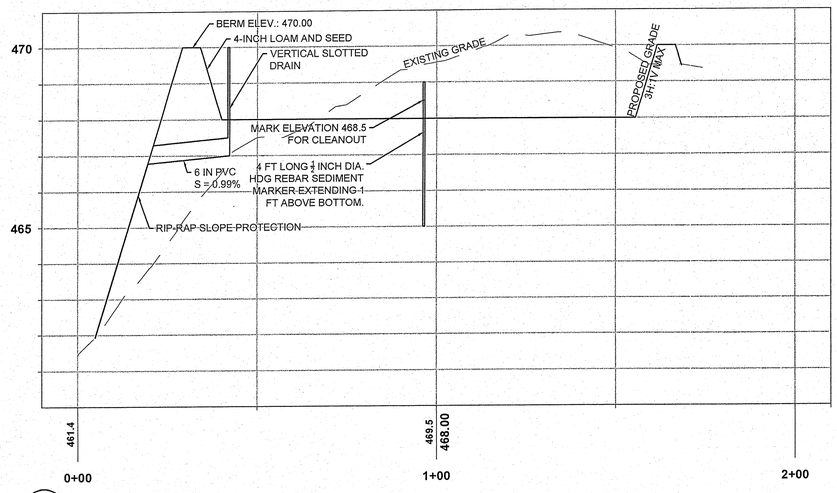
1/20 DETENTION BASIN 202A - SECTION A

SCALE: 1" = 20' H, 1"=2' V



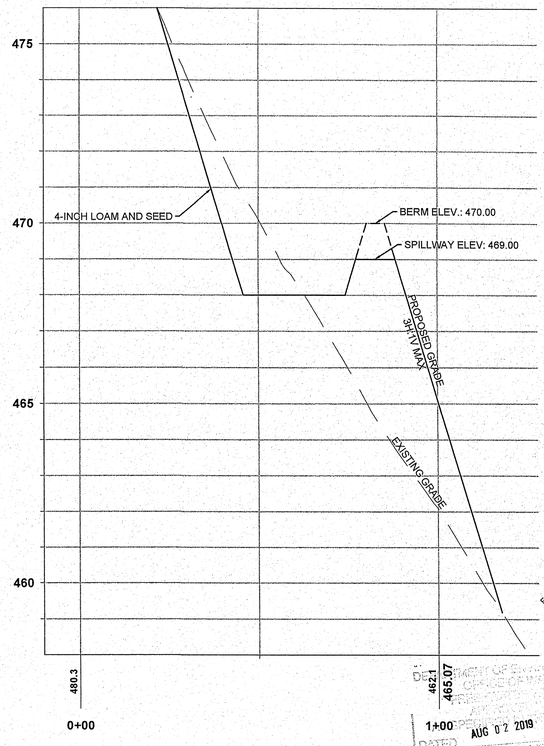
2/20 DETENTION BASIN 202B - SECTION B

SCALE: 1" = 20' H, 1"=2' V



3/20 SCALE: 1" = 20' H, 1"=2' V

DETENTION BASIN 202B - SECTION A



4/20 DETENTION BASIN 202B - SECTION B

SCALE: 1" = 20' H, 1"=2' V

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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
DATE OF APPLICATION APPROVAL
AUG 02 2019 18-0267
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Environmental Management
APR 17 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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AUG 02 2019 180267
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4/20/19

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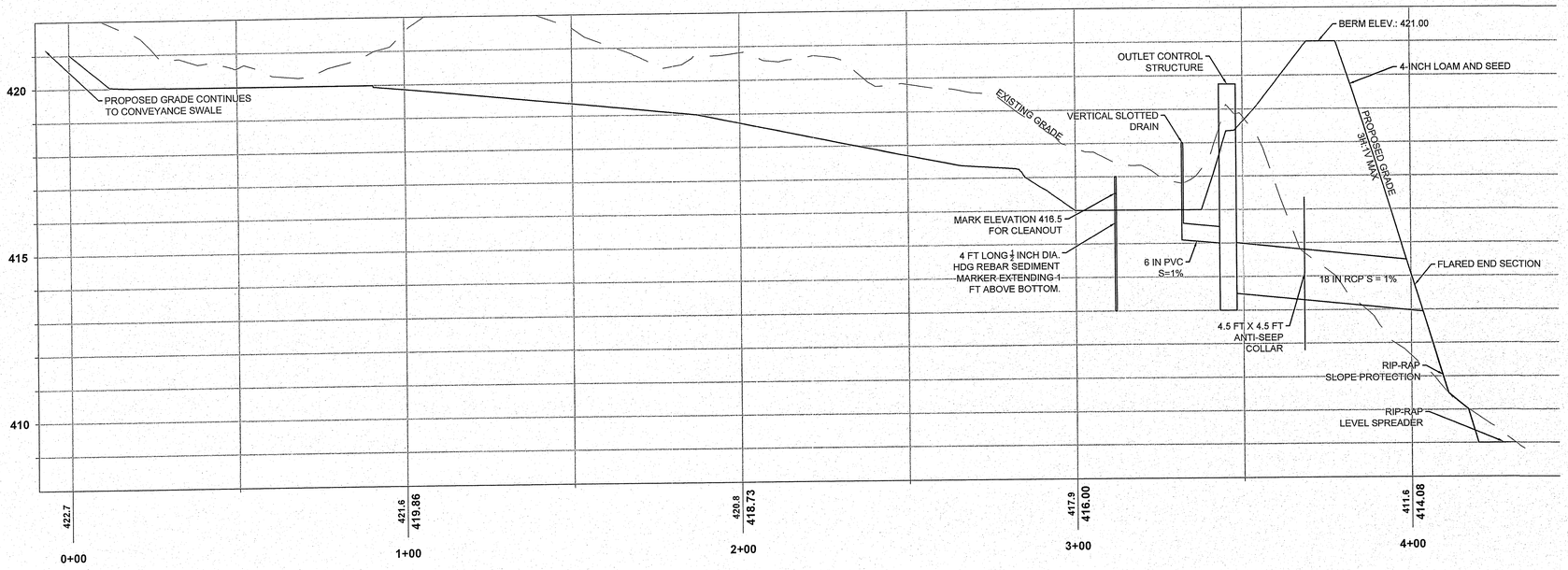
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DESIGNED BY: JMG	APPROVED BY:

BURRILLVILLE SOLAR
AP 195 LOT 15
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BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS BASIN SECTIONS

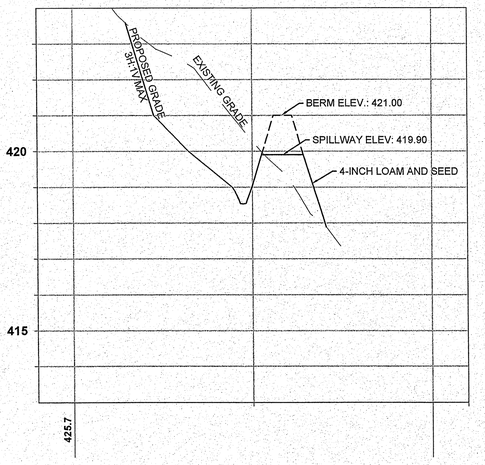
PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	**S-2**
SHEET No.: 20 OF 26	
SCALE: AS SHOWN	

XREF: B456-000 PROPOSED [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 PROPOSED.dwg]
XREF: B456-000 DISTINGUISHING EDITS [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DISTINGUISHING_EDITS.dwg]
XREF: B456-000 DPrint Survey [J:\Jobs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DPrint Survey.dwg]
DATE: Feb 20, 2019 - 5:11PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WB\BH WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_SECTIONS.dwg
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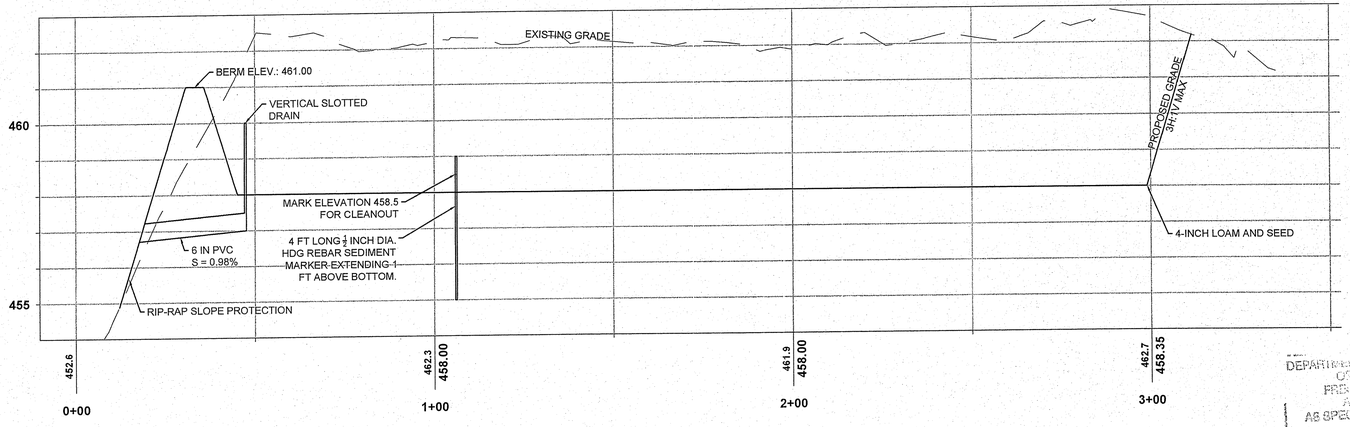
1/21 DETENTION BASIN 202D - SECTION A

SCALE: 1" = 20' H, 1"=2' V



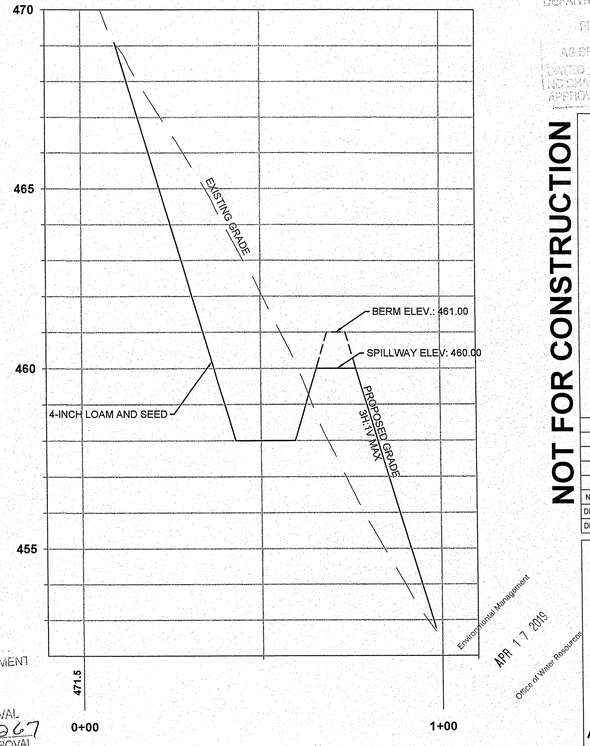
2/21 DETENTION BASIN 202D - SECTION B

SCALE: 1" = 20' H, 1"=2' V



3/21 DETENTION BASIN 202C - SECTION A

SCALE: 1" = 20' H, 1"=2' V



4/21 DETENTION BASIN 202C - SECTION B

SCALE: 1" = 20' H, 1"=2' V

JASON M. GOLD
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REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 7/20/19

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APPLICATION TO ALTER WETLANDS
BASIN SECTIONS

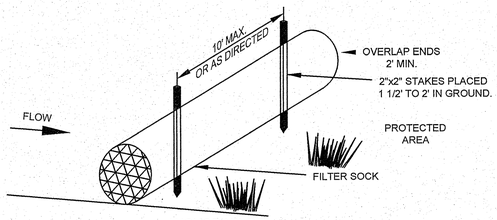
PROJECT No.: B456-000
DATE OF ISSUE: 9/28/2018
SHEET No.: 21 OF 26
SCALE: AS SHOWN

DRAWING No.
S-3

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XREF: B456-000 PROPOSED [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 PROPOSED.dwg]
XREF: B456-000 EXISTING_ESS EDITS [J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 EXISTING_ESS EDITS.dwg]
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DATE: Feb 20, 2019 - 5:11PM
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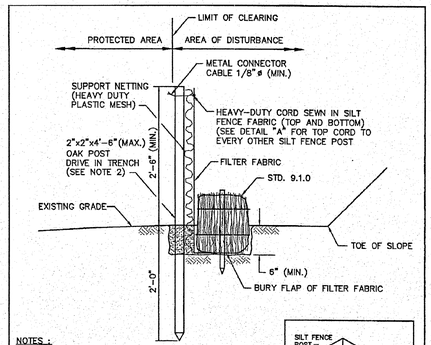


ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. FILTER SOCKS SHALL BE FILTREXX SILTSOXX WITH BIODEGRADABLE MESH, OR EQUIVALENT APPROVED BY THE OWNER. FILTER SOCK AND COMPOST MATERIALS SHALL BE IN ACCORDANCE WITH AASHTO MP 9-06, LATEST REVISION.
2. FILTER SOCKS OF DIAMETER AS SHOWN ON PLAN.
3. FILTER SOCKS SHALL BE PLACED IN ACCORDANCE WITH THIS PLAN SET AND IN A ROW WITH ENDS OVERLAPPING 2 FEET (MIN.).
4. FILTER SOCKS SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES, 10 FEET ON CENTER (MAX).
5. INSPECTION SHALL BE FREQUENT AND REPAIR AND/OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. FILTER SOCKS SHALL NOT BE MOVED TO OTHER LOCATIONS IN THE PROJECT ONCE PLACED.
7. VEGETATED BIODEGRADEABLE FILTER SOCKS TO REMAIN. REMOVE NON-BIODEGRADABLE FILTER SOCKS AFTER SITE HAS BEEN STABILIZED.

1 / 22 TYPICAL FILTER SOCK DETAIL
SCALE: NTS



NOTES :
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. STD. 9.1.0 IS INSTALLED "TIGHT" AGAINST SILT FENCE. THOROUGHLY COMPACT EXCAVATED SOILS BACK INTO TRENCH AFTER INSTALLATION OF EROSION CONTROL DEVICE. SILT FENCE FABRIC SHALL NOT BE SLIT. STD. 9.1.0 POST SHALL BE DRIVEN THROUGH SILT FENCE FABRIC. 2"x2"x4'-6" (MAX.) OAK POST FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
3. 1"x1"x4'-6" (MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
4. SILT FENCE AND BALED HAY SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	BY	DATE

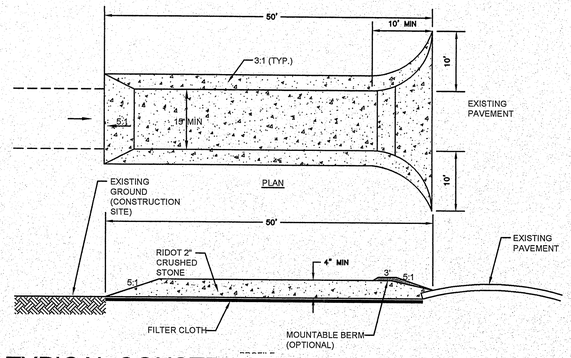
BALED HAY EROSION CHECK AND SILT FENCE COMBINED

CHIEF ENGINEER OPERATIONS — CHIEF DESIGN ENGINEER TRANSPORTATION — JUNE 15, 1998 ISSUE DATE

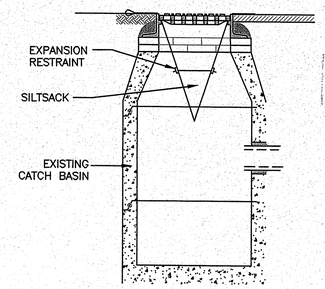
R.I. STANDARD 9.3.0

NOTES:
1. STRAW BALE SHALL BE USED IN PLACE OF HAY BALE.

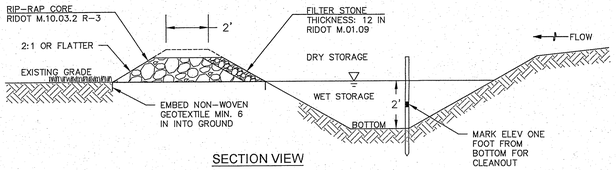
2 / 22 COMBINED STRAWBALE AND SILT FENCE DETAIL
SCALE: NTS



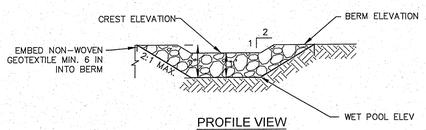
3 / 22 TYPICAL CONSTRUCTION ENTRANCE DETAIL
SCALE: NTS



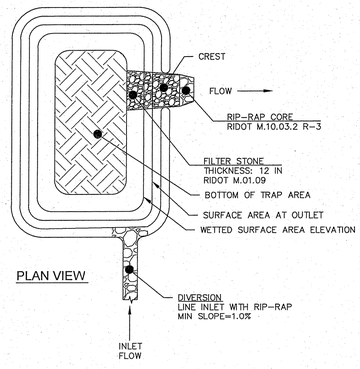
4 / 22 TYPICAL SILT SACK DETAIL
SCALE: NTS



SECTION VIEW

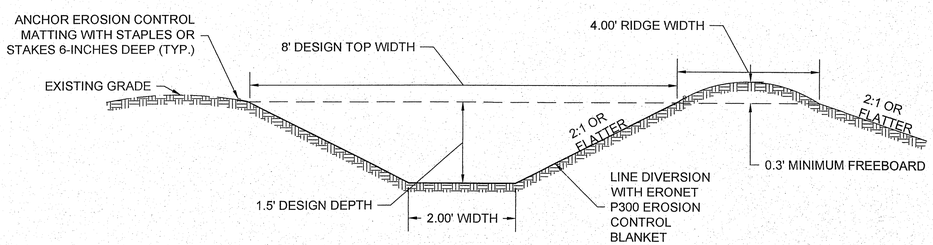


PROFILE VIEW



PLAN VIEW

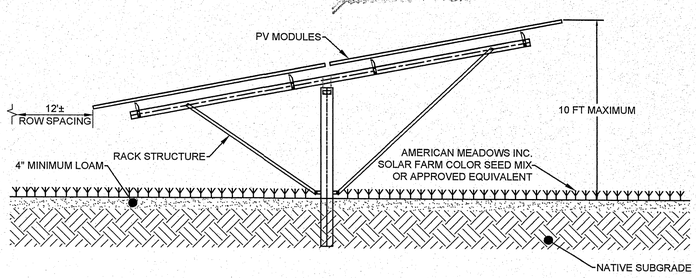
5 / 22 TEMPORARY SEDIMENT TRAP DETAIL
SCALE: NTS



6 / 22 DIVERSION DETAIL
SCALE: NTS

TEMPORARY SEDIMENT TRAPS

PARAMETER	TST-1	TST-2	TST-3
DRAINAGE AREA, AC	1.41	2.52	4.95
WET VOLUME RQD, CF	2,552	4,568	8,984
WET VOLUME PROVIDED, CF	2,552	4,568	8,984
DRY VOLUME RQD, CF	2,552	4,568	8,984
DRY VOLUME PROVIDED, CF	2,552	4,568	8,984
ELEVATIONS			
BOTTOM	430	436	430
SEDIMENT REMOVAL	431	437	431
BOTTOM OF FILTER STONE (WET STORAGE)	432	438	432
WEIR CREST (DRY STORAGE)	433	439	433
EMBANKMENT	434	440	434



NOTES:
1. RACK STRUCTURE AND PV MODULES SHOWN FOR ILLUSTRATIVE PURPOSES. ACTUAL COMPONENTS AND DIMENSIONS AS APPROVED BY OWNER. FOUNDATION TYPE TO BE DETERMINED BY OTHERS. CONCRETE BALLASTS ARE NOT PERMITTED.

7 / 22 TYPICAL SOLAR PANEL RACKING DETAIL
SCALE: NTS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SPECIFIED IN LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

APR 17 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SPECIFIED IN LETTER OF APPROVAL
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JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 2/20/19

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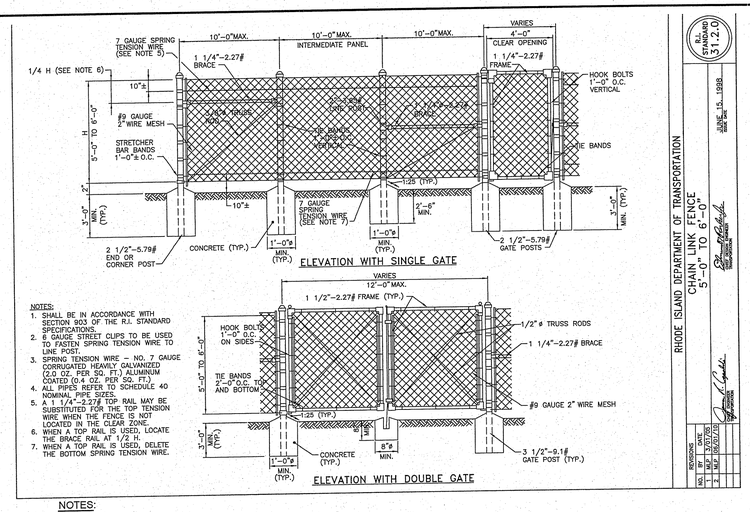
No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
DETAILS

PROJECT No.: B456-000	DRAWING No.
DATE OF ISSUE: 9/28/2018	D-1
SHEET No.: 22 OF 26	
SCALE: NTS	

XREF: B456-000 PROPOSED [\\B456-000 PROPOSED.dwg]
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XREF: B456-000 DPWire Survey [\\Vol1\Jobs\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xrefs\B456-000 DPWire Survey.dwg]
DATE: Feb 20, 2019 - 5:11PM
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NOTES:

1. SHALL BE IN ACCORDANCE WITH SECTION 903 OF THE R.I. STANDARD SPECIFICATIONS.
2. 9 GAUGE STREET CLIPS TO BE USED TO FASTEN SPRING TENSION WIRE TO LINE POST.
3. SPRING TENSION WIRE – NO. 7 GAUGE CORRUGATED HEAVILY GALVANIZED (0.9 OZ. PER SQ. FT.) ALUMINUM (2.0 OZ. PER SQ. FT.) COATED (0.4 OZ. PER SQ. FT.)
4. ALL PIPES REFER TO SCHEDULE 40 NOMINAL PIPE SIZES.
5. A 1 1/4"–2.27# TOP RAIL MAY BE SUBSTITUTED FOR THE TOP TENSION WIRE WHEN THE FENCE IS NOT LOCATED IN THE CLEAR ZONE.
6. WHEN A TOP RAIL IS USED, LOCATE THE BRACE RAIL AT 1/2 H.
7. WHEN A TOP RAIL IS USED, DELETE THE BOTTOM SPRING TENSION WIRE.

R.I. STANDARD 7.1.2

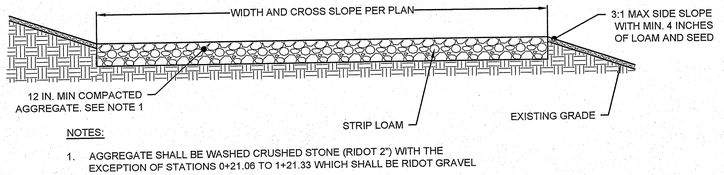
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
5'-0" TO 6'-0"

REVISIONS		
NO.	BY	DATE
1	MJP	6/20/05
2	MJP	10/03/13

JUNE 15, 1998 ISSUE DATE

1 / 23 TYPICAL CHAIN LINK FENCE DETAIL

SCALE: NTS

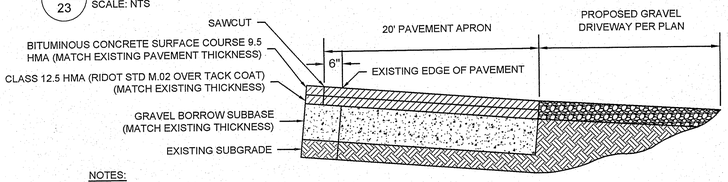


NOTES:

1. AGGREGATE SHALL BE WASHED CRUSHED STONE (RIDOT 2") WITH THE EXCEPTION OF STATIONS 0+21.06 TO 1+21.33 WHICH SHALL BE RIDOT GRAVEL BORROW (OR EQUAL).
2. REGRADE CRUSHED STONE TO REJUVENATE PERVIOUS CHARACTERISTICS AFTER CONSTRUCTION AS NEEDED IF PONDING IS OBSERVED AFTER PRECIPITATION EVENTS OF 1.2 INCHES OR GREATER OVER A 24 HOUR PERIOD.

3 / 23 TYPICAL GRAVEL DRIVEWAY DETAIL

SCALE: NTS

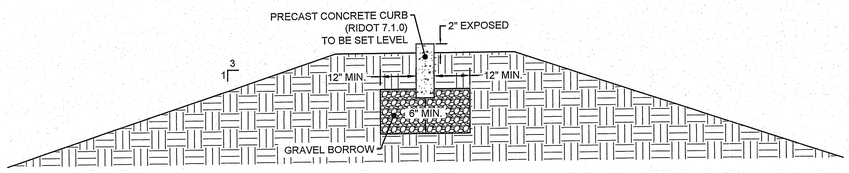


NOTES:

1. SAW CUT EXISTING PAVEMENT 6" FROM EDGE OF PAVEMENT TACK COAT FACE BEFORE PAVING.
2. PAVEMENT MATCH DESIGN SHALL MATCH EXISTING SHEET FLOW PATTERNS.

4 / 23 TYPICAL PAVEMENT APRON DETAIL

SCALE: NTS



LOCATION	TOP OF POND / BERM ELEVATION	CURB WEIR INVERT ELEVATION	WEIR LENGTH
BASIN 201A	419	417.75	10
BASIN 202A	466	465.75	10
BASIN 202D	421	419.90	50

NOTES:

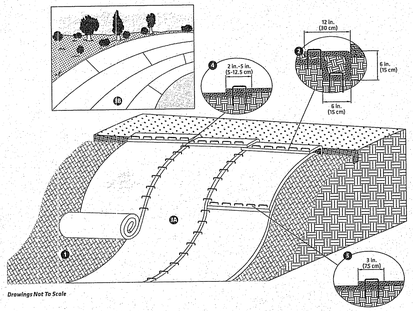
1. CONCRETE CURB SHALL BE SET LEVEL ON A GRAVEL BORROW SUBBASE BEDDING.
2. GRAVEL BORROW SUBBASE SHALL BE INSTALLED IN ACCORDANCE WITH RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

5 / 23 TYPICAL CURB OUTLET WEIR DETAIL

SCALE: NTS

Slope Installation

The following slope guide outlines general recommendations for installing RollMax™ System temporary and/or permanent RECPs on sloping applications. Consult the staple pattern guide (Figure 1) for fastener spacing recommendations based on the slope severity.



Drawings Not To Scale

SLOPE INSTALLATION STEPS

1. Prepare soil before installing RECPs, including any necessary application of lime, fertilizer and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench with approximately 12 in. (30 cm) of RECPs extended beyond the upslope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12 in. (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12 in. (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12 in. (30 cm) apart across the width of the RECPs.
3. Roll the RECPs (3A) down or (3B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with an approximately 2 in.-5 in. (5-12.5 cm) overlap depending on the RECP type.
5. Consecutive RECPs spliced down the slope must be end-over-end (shingle style) with an approximate 3 in. (7.5 cm) overlap. Staple through overlapped area, approximately 12 in. (30 cm) apart across entire RECPs width.*

**NOTE: In adverse soil conditions longer staples/stakes or earth anchors may be necessary to properly secure the RECPs.*

Installation Made Easy

When under the pressure of severe conditions, even the best erosion control products can't function to their full potential without proper installation and anchoring. North American Green supplies a wide variety of fastener options for nearly every application and soil type.

For use in cohesive soils, wire staples are a cost-effective means to fasten RollMax™ System Rolled Erosion Control Products (RECPs). Available in 6 in., 8 in., 10 in. and 12 in. lengths, our U-shaped staples reach various depths to ensure adequate pull-out resistance. For installation using our handy Pin Pounder installation tool, 6 in. V-top staples or 6 in. circle top pins are available.

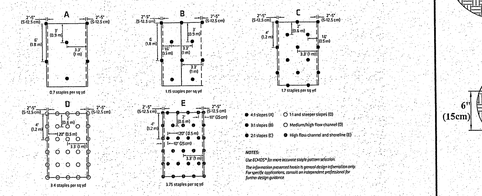
Our biodegradable BioStakes® are available in 4 in. and 6 in. lengths and provide an environmentally friendly alternative to metal staples. For an even more durable, deeper reaching yet all-natural anchoring option, our wood EcoStakes® are available in 6 in., 12 in., 18 in. and 24 in. lengths.

For severe applications needing the ultimate, long-lasting hold, try our 12 in. and 18 in. rebar staples, our 12 in. plastic ShoreMax® stakes, or our complete line of percussion earth anchors. The earth anchors reach deep into the soil strata to offer enhanced anchoring in the worst conditions. Our variety of earth anchors are designed for durability and holding power under extreme hydraulic stresses and adverse soil conditions.

STAPLE PATTERNS

Proper staple patterns must be used to achieve optimal results in RECP installation. We recommend the following general stapling patterns as guidance for use with our RECPs as seen in (Figure 1). Site-specific staple pattern recommendations based on soil type and severity of application may be acquired through our Erosion Control Materials Design Software (ECMDS®), **www.ecmds.com**.

STAPLE PATTERN GUIDE



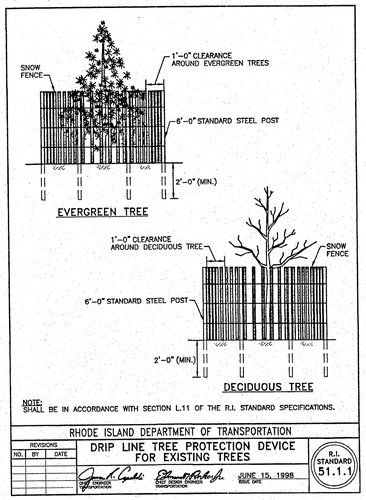
NOTES:
Use EVER™ for even recurved staple pattern selection
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

2 / 23 TYPICAL TURF REINFORCEMENT MAT (TRM) INSTALLATION

SCALE: NTS

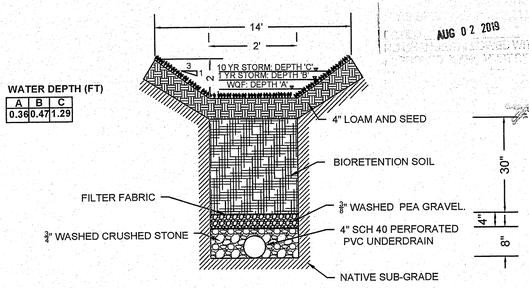
NOTE:

1. TRM SHALL BE ERONET P300 OR EQUAL



6 / 23 TREE PROTECTION DEVICE DETAIL

SCALE: NTS

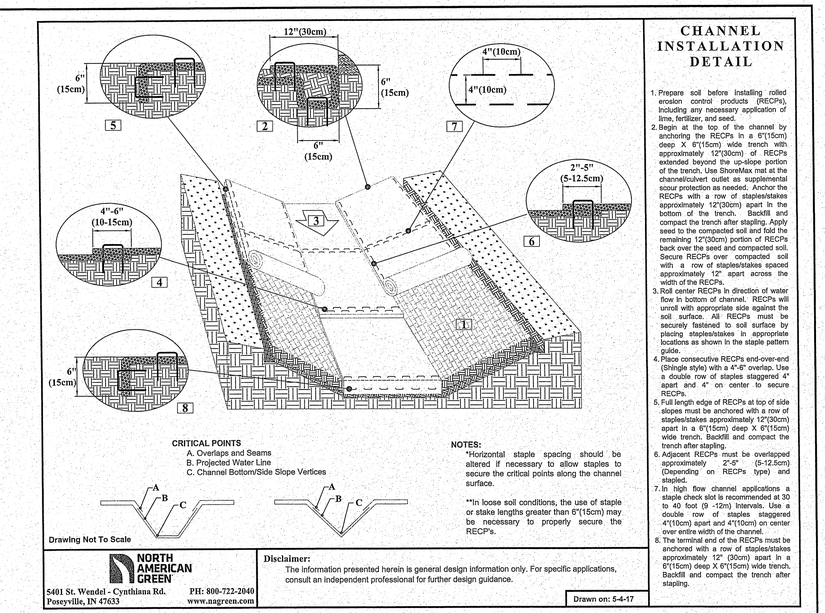


7 / 23 DRY SWALE CROSS SECTION

SCALE: NTS

NOTE:

1. REFER TO DRYSWALE NOTES ON NOTES PAGE.



CRITICAL POINTS

A. Overlaps and Seams
B. Projected Water Line
C. Channel Bottom/Side Slope Vertices



Drawing Not To Scale

NOTES:

*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

**In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

CHANNEL INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12"(30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12"(30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12"(30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 2"-5" (5-12.5cm) (Depending on RECPs type) and stapled.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) Intervals. Use a double row of staples staggered 4"(10cm) apart and 4"(10cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.

NORTH AMERICAN GREEN
5401 St. Wendel - Cynthiana Rd. PH: 800-722-2040
Poseyville, IN 47633 www.nagreen.com

Disclaimer:
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

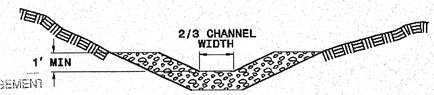
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SUBMITTED APPROVAL
AUG 02 2019 DATED FILE # 18-0267
NO CHANGES ALLOWED PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

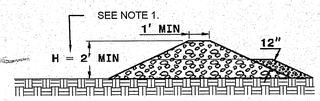
JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
7/20/19

PLAN

Environmental Management
APR 17 2019
Office of Water Resources



SECTION A-A



SECTION B-B

NOTES:

1. MAXIMUM CHECK DAM SPACING SHALL BE SUCH THAT THE TOE OF THE UPSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK DAM. THE DEPTH OF SWALE 202D IS 1 FOOT MINIMUM.
2. USE RIDOT CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.
3. SEDIMENT CONTROL STONE NOT REQUIRED.
4. DETAIL ADAPTED FROM THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.

8 / 23 TYPICAL STONE CHECK DAM (SWALE 202D)

SCALE: NTS

NOT FOR CONSTRUCTION

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Waltham, Massachusetts 02451
p 781.419.7696
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No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

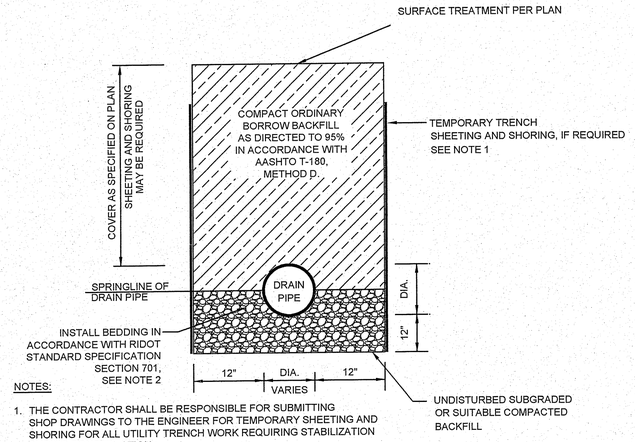
BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS DETAILS

PROJECT No.: B456-000	DRAWING No. D-2
DATE OF ISSUE: 9/28/2018	
SHEET No.: 23 OF 26	
SCALE: NTS	

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XREF: B456-000 PROPOSED SITE PLAN.dwg XREF: B456-000 EXISTING SITE PLAN.dwg XREF: B456-000 BURRILLVILLE SOLAR V04 GRAPHICS.dwg XREF: B456-000 BURRILLVILLE SOLAR V04 GRAPHICS.ctb
DATE: Feb 05, 2019 - 5:12PM
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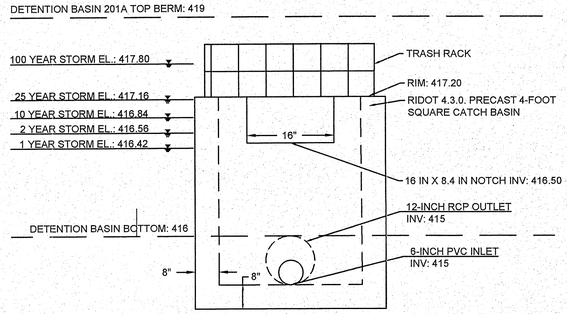


NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS TO THE ENGINEER FOR TEMPORARY SHEETING AND SHORING FOR ALL UTILITY TRENCH WORK REQUIRING STABILIZATION DURING CONSTRUCTION.
2. DRAIN PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 701 - CULVERTS AND STORM DRAINS AND SECTION 205 - TRENCH EXCAVATION OF THE MOST RECENT RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

1/24 TYPICAL DRAIN PIPE TRENCH

SCALE: NTS

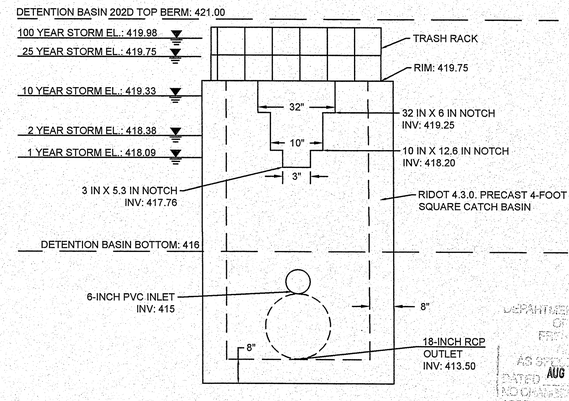


NOTE:

1. INSTALL STORMRAX FLAT TRASH RACK OR APPROVED EQUIVALENT OVER NOTCH AND TOP.

2/24 DETENTION BASIN 201A OUTLET CONTROL STRUCTURE

SCALE: NTS



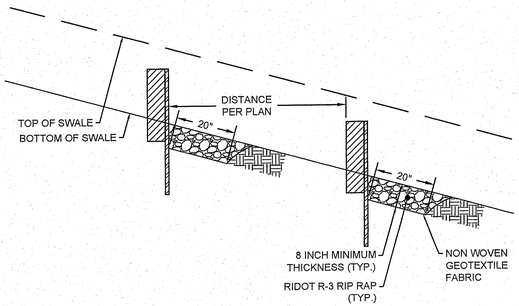
NOTE:

1. INSTALL STORMRAX FLAT TRASH RACK OR APPROVED EQUIVALENT OVER NOTCH AND TOP.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED
AUG 02 2019
FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

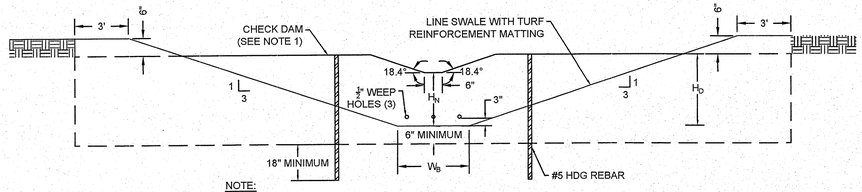
3/24 DETENTION BASIN 202D OUTLET CONTROL STRUCTURE

SCALE: NTS



4/24 TYPICAL CHECK DAM PROFILE

SCALE: NTS



NOTE:

1. CHECK DAM SHALL BE CONSTRUCTED OF RAILROAD TIES, PRESSURE TREATED LOGS OR TIMBERS, OR CONCRETE.

5/24 TYPICAL CHECK DAM SECTION FOR SWALES 203B - 203G

SCALE: NTS

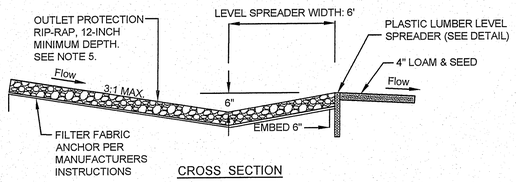
SECTION A-A

END ELEVATION

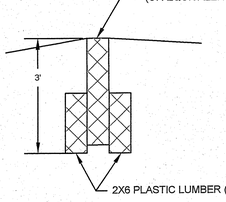
Environmental Management
APR 17 2019
Office of Water Resources

CHECK DAM DIMENSION TABLE

SWALE	W_B	H_N	H_D
203B	2	1.20	1.5
203C	2	1.00	1.5
203D	2	1.00	1.5
203E	2	0.25	0.57
203F	2	1.15	1.5
203G	2	0.90	1.15



CROSS SECTION

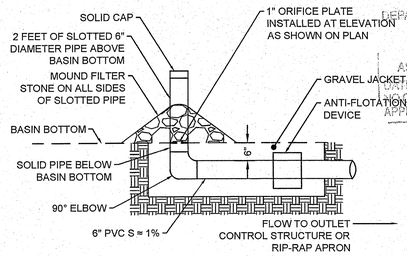


CONSTRUCTION SPECIFICATIONS / NOTES:

1. THE FILTER FABRIC SHOULD BE A MINIMUM OF 6 FEET WIDE EXTENDING 12 INCHES OVER THE LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON BOTH SIDES. THE FABRIC SHOULD BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY DUTY WIRE STAPLES AT LEAST 12 INCHES IN LENGTH.
2. FILTER FABRIC SHALL BE EROSION RESISTANT MATERIAL OR MAT TO PREVENT EROSION AND ALLOW VEGETATION TO BECOME ESTABLISHED.
3. ENSURE THAT THE LIP IS LEVEL TO UNIFORMLY SPREAD STORMWATER DISCHARGE.
4. THE RUNOFF DISCHARGE WILL BE OUTLETED ONTO A STABILIZED VEGETATED SLOPE.
5. ALL OUTLET PROTECTION AND LEVEL SPREADER RIP-RAP SHALL BE RIDOT R-1 RIP-RAP STONE WITH THE EXCEPTION OF BASIN 201A WHICH SHALL USE RIDOT R-3 RIP-RAP STONE .

6/24 LEVEL SPREADER

SCALE: NTS



NOTE:

1. SLOTTED VERTICAL DRAIN MAY BE ELIMINATED IF SUBSEQUENT SOIL EVALUATION CONFIRMS INFILTRATION RATE AT LEAST 1.02 IN/HR AND SHWT ELEVATION IS AT LEAST 3 FT BELOW BASIN BOTTOM ELEV. SOIL EVALUATION SHALL BE CONDUCTED BY A RI P.E

7/24 TYPICAL SLOTTED VERTICAL DRAIN

SCALE: NTS

DIMENSIONS								REINFORCEMENT
DIA.	A	B	C	D	E	R	T	ONE LAYER REINFORCEMENT IN CENTER OF WALL: MIN. AREA OF EACH WAY (SQ. IN./FT.)
1'-0"	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	9"	2"	0.048
1'-3"	5"	2'-3"	3'-10"	6'-1"	2'-8"	11"	2 1/4"	0.054
1'-6"	9"	2'-3"	3'-10"	6'-1"	3'-0"	12"	2 1/2"	0.060
2'-0"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	1'-2"	3"	0.072
2'-6"	1'-0"	4'-5"	1'-7 3/4"	6'-1 3/4"	5'-0"	1'-3"	3 1/2"	0.084
3'-0"	1'-3"	5'-3"	2'-10 3/4"	6'-1 3/4"	6'-0"	1'-8"	4"	0.096
3'-6"	1'-6"	6'-3"	2'-11"	8'-3"	6'-0"	1'-10"	4 1/2"	0.108
4'-0"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	1'-10"	5"	0.120
4'-6"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	2'-0"	5 1/2"	0.132
5'-0"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	2'-0"	6"	0.144

NOTE: SHALL BE IN ACCORDANCE WITH SECTION 701 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE FLARED END SECTION

JUNE 15, 1988

R.I. STANDARD 2.3.0

8/24 FLARED END SECTION

SCALE: NTS

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 9/20/19

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Waltham, Massachusetts 02451
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www.essgroup.com

No.	REVISION	DATE	APP BY
1	RIDEM COMMENTS	2/20/19	JMG

DRAWN BY: PKN/CJR | CHECKED BY: JMG
DESIGNED BY: JMG | APPROVED BY:

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
DETAILS

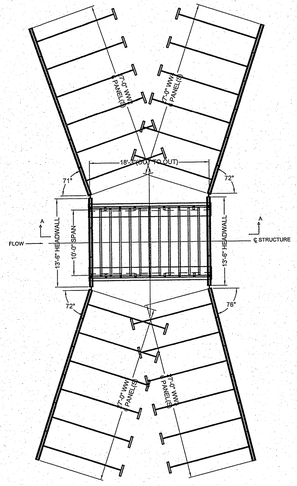
PROJECT No.: B456-000
DATE OF ISSUE: 9/28/2018
SHEET No.: 24 OF 26
SCALE: AS SHOWN

DRAWING No.
D-3

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BRIDGE PLAN

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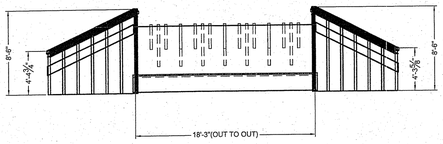
CONTECH STRUCTURAL PLATE

DYOB DRAWING

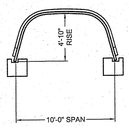
ALBC 4, 10'-0" Span x 4'-10" Rise
Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.: 1 OF 6	

1 CONTECH BOX CULVERT BRIDGE PLAN
25 SCALE: AS SHOWN



SECTION A-A



CROSS SECTION

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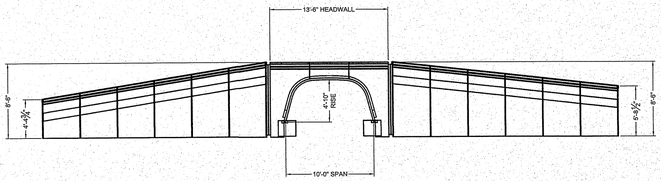
CONTECH STRUCTURAL PLATE

DYOB DRAWING

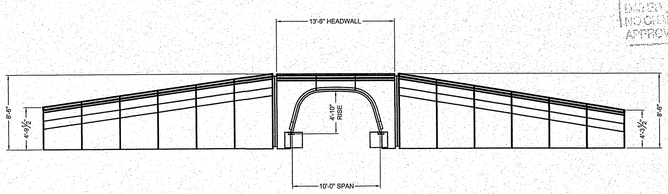
ALBC 4, 10'-0" Span x 4'-10" Rise
Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.: 3 OF 6	

3 CONTECH SECTION VIEW
25 SCALE: AS SHOWN



INLET END ELEVATION



OUTLET END ELEVATION

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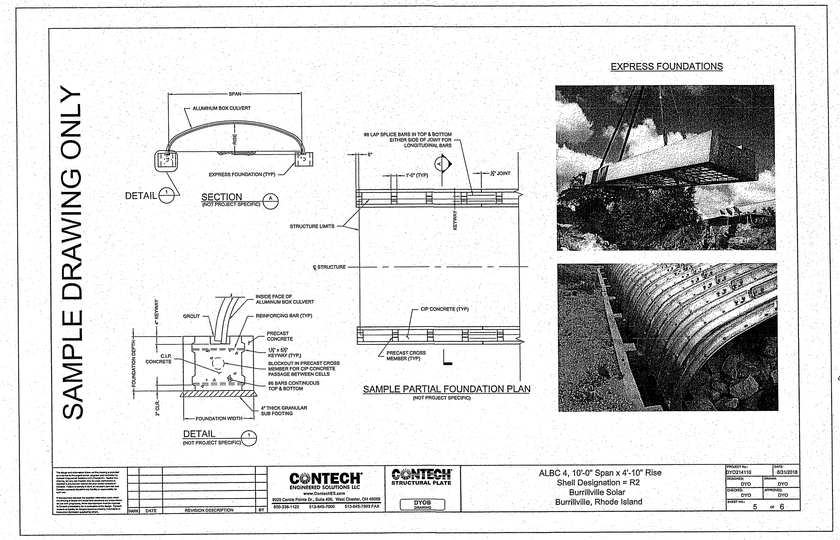
DYOB DRAWING

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Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.: 2 OF 6	

2 CONTECH INLET_OUTLET VIEW
25 SCALE: AS SHOWN

OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Environmental Management
AUG 02 2019
18-0267
Office of Water Resources



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CONTECH STRUCTURAL PLATE

DYOB DRAWING

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Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.: 5 OF 6	

4 CONTECH FOUNDATION PLAN
25 SCALE: NTS

NOTES:
1. FINAL BOX CULVERT FOUNDATION TO BE DESIGNED BY OTHERS

OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 02 2019 FILE # 18-0267
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 7/20/19

Environmental Management
APR 17 2019
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No.	REVISION	DATE	APP BY
DRAWN BY: PKN/GJR		CHECKED BY: JMG	
DESIGNED BY: JMG		APPROVED BY:	

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

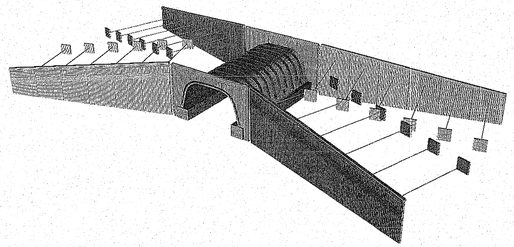
APPLICATION TO ALTER WETLANDS
DETAILS

PROJECT No.: B456-000	DRAWING No. D-4
DATE OF ISSUE: 9/28/2018	
SHEET No.: 25 OF 26	
SCALE: AS SHOWN	

DATE: Feb 20, 2019 — 5:12PM
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XREF: B456-000 EXISTING_ESS_DITS (\\dc1\Data\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Xref\B456-000 Survey.dwg)



CONTECH ALBC DYOB

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CONTECH STRUCTURAL PLATE

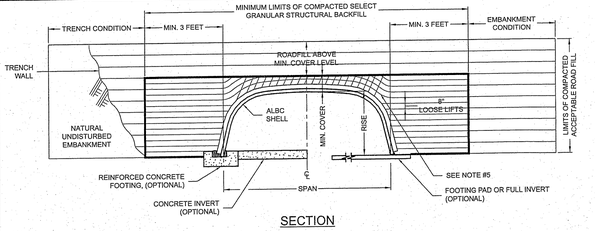
DYOB DRAWING

ALBC 4, 10'-0" Span x 4'-10" Rise
Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO

COVER SHEET

1/26 CONTECH BOX CULVERT PLAN
SCALE: NTS



SECTION

SELECT GRANULAR STRUCTURAL BACKFILL LIMITS.

INITIAL LIFTS OVER THE CROWN OF STRUCTURE AS INDICATED BY SHADED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT OR WITH LIGHTWEIGHT(D-4 OR LIGHTER) EQUIPMENT.

NOTES:

1. ALL SELECT GRANULAR BACKFILL TO BE PLACED IN A BALANCED FASHION IN THIN LIFTS (8" LOOSE TYPICALLY) AND COMPACTED TO 90 PERCENT DENSITY PER AASHTO T-180.
2. COMPLETE AND REGULAR MONITORING OF THE ALUMINUM BOX CULVERT SHAPE IS NECESSARY DURING ALL BACKFILLING OF THE STRUCTURE.
3. PREVENT DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.
4. TRENCH WIDTH OTHER THAN 3 FEET SHALL BE BY DIRECTION OF THE ENGINEER OF RECORD.
5. SWITCH TO PLACING SELECT GRANULAR BACKFILL NEAR IN RADIAL LIFTS THE MIDDLE OF THE HAUNCH CURVE.

ADDITIONAL SELECT GRANULAR STRUCTURAL BACKFILL NOTES:

SATISFACTORY BACKFILL MATERIAL, PROPER PLACEMENT, AND COMPACTION ARE KEY FACTORS IN OBTAINING MAXIMUM STRENGTH AND STABILITY.

THE BACKFILL MATERIAL SHOULD BE FREE OF ROCKS, FROZEN LUMPS, AND FOREIGN MATERIAL THAT COULD CAUSE HARD SPOTS OR DECOMPOSE TO CREATE VOIDS. BACKFILL MATERIAL SHOULD BE WELL GRADED GRANULAR MATERIAL THAT MEETS THE REQUIREMENTS OF AASHTO M-145 FOR SOIL CLASSIFICATIONS A-1, A-2-4, A-2-5, OR A-3 MODIFIED.

SEE THE STRUCTURAL PLATE BACKFILL GROUP CLASSIFICATION TABLE ON THIS SHEET.
BACKFILL MUST BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN 8" LOOSE LIFTS. EACH LIFT IS TO BE COMPACTED TO A MINIMUM OF 90% DENSITY PER AASHTO T-180.

A HIGH PERCENTAGE OF SILT OR FINE SAND IN THE NATIVE SOILS SUGGESTS THE NEED FOR A WELL GRADED GRANULAR BACKFILL MATERIAL TO PREVENT SOIL MIGRATION. IF THE PROPOSED BACKFILL IS NOT A WELL-GRADED MATERIAL, A NON-WOVEN GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE SELECT BACKFILL AND THE IN SITU MATERIAL.

DURING BACKFILL, ONLY LIGHTWEIGHT TRACKED VEHICLES (D-4 OR LIGHTER) SHOULD BE NEAR THE STRUCTURE AS FILL PROGRESSES ABOVE THE CROWN AND TO THE FINISHED GRADE. THE ENGINEER AND CONTRACTOR ARE CAUTIONED THAT THE MINIMUM COVER MAY NEED TO BE INCREASED TO HANDLE TEMPORARY CONSTRUCTION VEHICLE LOADS (HEAVIER THAN D-4).

STRUCTURAL PLATE BACKFILL GROUP CLASSIFICATION, REFERENCE AASHTO M-145

GROUP CLASSIFICATION	A-1-a	A-1-b	A-2-4	A-2-5	A-3
Sieve Analysis Percent Passing					
No. 10 (2.000 mm)	50 max.	----	----	----	----
No. 40 (0.425 mm)	30 max.	50 max.	----	----	51 max.*
No. 200 (0.075 mm)	15 max.	25 max.	35 max.	35 max.	10 max.
Atterberg Limits for Fraction Passing No. 40 (0.425 mm)					
Liquid Limits	----	----	40 max.	41 min.	----
Plasticity Index	6 max.	6 max.	10 max.	10 max.	Non Plastic
Usual Materials	Stone Fragment, Gravel and Sand		Silty or Clayey Gravel and Sand		Coarse Sand

*Modified from M-145.

Fine beach sands, windblown sands, stream deposited sands, etc., exhibiting fine, rounded particles and typically Classified by AASHTO M-145 as A-3 materials should not be used.

Reference the most current version of ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), for comparable soil groups.

1.0 STANDARDS AND DEFINITIONS

1.1 STANDARDS - All standards refer to the current ASTM/AASHTO edition unless otherwise noted.

1.1.1 ASTM B-864 "Standard Specification for Corrugated Aluminum Box Culverts" (AASHTO Designation M-218).

1.1.2 AASHTO Standard Specification for Highway Bridges - Section 12 Division I - Design, AASHTO LRFD Bridge Design Specifications Section 12.

1.1.3 AASHTO Standard Specification for Highway Bridges - Section 26 Division II - Construction, AASHTO LRFD Bridge Construction Specifications - Section 26, ASTM B788, Standard Practice for Installing Corrugated Aluminum Structural Plate Pipe.

1.2 DEFINITIONS

1.2.1 Owner - In these specifications the word "Owner" shall mean .

1.2.2 Engineer - In these specifications the word "Engineer" shall mean the Engineer of Record or Owner's designated engineering representative.

1.2.3 Manufacturer - In these specifications the word "Manufacturer" shall mean CONTECH ENGINEERED SOLUTIONS 800-338-1122 .

1.2.4 Contractor - In these specifications the word "Contractor" shall mean the firm or corporation undertaking the execution of any installation work under the terms of these specifications.

1.2.5 Approved - In these specifications the word "approved" shall refer to the approval of the Engineer or his designated representative.

1.2.6 As Directed - In these specifications the words "as directed" shall refer to the directions to the Contractor from the Owner or his designated representative.

2.0 GENERAL CONDITIONS

2.1 Any installation guidance provided herein shall be endorsed by the engineer; discrepancies herein are governed by the Engineer's plans and specifications.

2.2 The Contractor shall furnish all labor, material and equipment and perform all work and services except those set out and furnished by the Owner, necessary to complete in a satisfactory manner the site preparation, excavation, filling, compaction, grading as shown on the plans and as described therein. This work shall consist of all mobilization clearing and grading, grubbing, stripping, removal of existing material spreading and compaction of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades, slopes, and specifications. This work is to be accomplished under the observation of the Owner or his designated representative.

2.3 Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work.

If conditions other than those indicated are discovered by the Contractor, the Owner shall be notified immediately. The material which the Contractor believes to be a changed condition shall not be disturbed so that the owner can investigate the condition.

2.4 The construction shall be performed under the direction of the Engineer.

2.5 All aspects of the structure design and site layout including foundations, backfill, end treatments and necessary scour consideration shall be performed by the Engineer.

3.0 ASSEMBLY AND INSTALLATION

3.1 Bolts and nuts shall conform to the requirements of ASTM A-307 and/or ASTM A-449. The box culvert shall be assembled in accordance with the plate layout drawings provided by the manufacturer and per the manufacturer's recommendations.

Bolts shall be tightened using an applied torque of between 100 and 150 ft.-lbs.

3.2 The box culvert shall be installed in accordance with the plans and specifications, the manufacturer's recommendations, and AASHTO Standard Specification for Highway Bridges - Section 26 Division II - Construction/AASHTO LRFD Bridge Construction Specifications - Section 26.

3.3 Trench excavation shall be made in embankment material that is structurally adequate. The trench width shall be shown on the plans. Poor quality in situ embankment material must be removed and replaced with suitable backfill as directed by the Engineer.

3.4 Aluminum Box Culvert designs require a minimum allowable soil-bearing pressure of 4,000 psf. Lower bearing capacities may be accommodated with a site specific design for an aluminum foundation or a concrete footing.

If the engineer determines the natural foundation is inadequate to support the structure's backfill, the poor material shall be excavated, removed and replaced to a suitable depth with competent material. The specific depth of excavation required may be reduced by utilizing a geosynthetic reinforced foundation as designed by a qualified geotechnical engineer. For additional information contact your local Contech representative.

3.5 When a metal foundation is used, the soil bedding requires a minimum of 6 inches of loose granular material with a maximum particle size of one half the corrugation depth. The proper width of the bedding material required shall conform to the project plans and specifications.

Bedding preparation is critical to both structure performance and service life. The bedding should be constructed to uniform line and grade to avoid distortions that may create undesirable stresses in the structure and/or rapid deterioration of the roadway. The bed should be free of rock formations, protruding stones, frozen lumps, roots, and other foreign matter that may cause unequal settlement.

3.6 The structure shall be assembled in accordance with the Manufacturer's instructions. All plates shall be unloaded and handled with reasonable care. Plates shall not be rolled or dragged over gravel rock and shall be prevented from striking rock or other hard objects during placement in trench or on bedding.

When installed on a full invert or on flexible footing pads, assembly of the invert or footing pads shall start at the downstream end. Circumferential seam laps shall shingle over the top of the downstream plates as assembly progresses upstream. Whether the box culvert is installed on a concrete footing, full metal invert, or flexible footing pad, assembly of the structure shell shall start at the upstream end. Downstream rings of plates shall be assembled outside of the upstream rings (Circumferential seams are shingled downstream when viewed from inside of the shell).

3.7 The structure shall be backfilled using clean well graded granular material that meets the requirements for soil classifications A-1, A-2-4, A-2-5, or A-3 modified per AASHTO M-145. See the structural plate backfill group classification table on this sheet.

Backfill must be placed symmetrically on each side of the structure in 8 inch loose lifts. Each lift shall be compacted to a minimum of 90 percent density per AASHTO T-180.

3.8 Standard highway loads that meet the permissible design load limits for an Aluminum Box Culvert are not allowed on the structure until it is backfilled completely and pavement is in place.

The addition of temporary soil for heavy construction loads is not feasible or permissible for Aluminum Box Culverts. By design, these structures are limited in the range of permissible fill heights and live loads.

Heavy construction loads that exceed that of the particular highway live load design limits are not allowed on Aluminum Box Culverts without approval from the Engineer.

3.9 If an aluminum headwall and/or wingwall system is specified, the select granular structural backfill limits shall extend past the deadman anchor system. Contact the Engineer if stiff material or rock is encountered where the wingwalls and deadmen are to be installed.

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH ENGINEERED SOLUTIONS LLC. The use of this drawing, and any part thereof, may be used, reproduced or modified in any manner without the prior written consent of CONTECH. By using this drawing, the user accepts sole responsibility for any modifications so made and agrees to indemnify CONTECH against all claims arising from such use.

If dimensions between the supplied information upon which this drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to CONTECH immediately. Failure to do so will void CONTECH's obligation for any liability associated with the use of this drawing.

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH STRUCTURAL PLATE

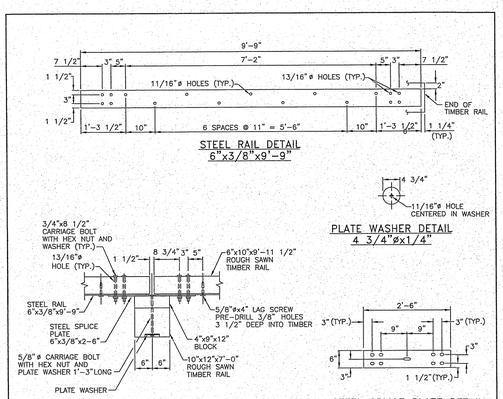
DYOB DRAWING

ALBC 4, 10'-0" Span x 4'-10" Rise
Shell Designation = R2
Burrillville Solar
Burrillville, Rhode Island

PROJECT No.:	DATE:
DYO214110	8/31/2018
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.: 4 OF 6	

2/26 CONTECH NOTES
SCALE: NTS

NOTES:
1. FINAL BOX CULVERT FOUNDATION TO BE DESIGNED BY OTHERS

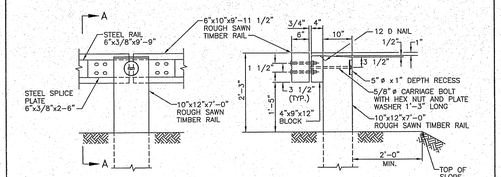


STEEL RAIL DETAIL
6"x3/8"x9'-9"

POST CONNECTION PLAN

PLATE WASHER DETAIL
4 3/4"øx1/4"

STEEL SPLICE PLATE DETAIL
6"x3/8"x2'-6"



POST CONNECTION ELEVATION

SECTION A-A

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL STRUCTURAL STEEL AND FASTENER HARDWARE SHALL BE WEATHERING STEEL AS SPECIFIED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	BY	DATE
1	MLP	3/1/2005

STEEL BACKED TIMBER GUARDRAIL

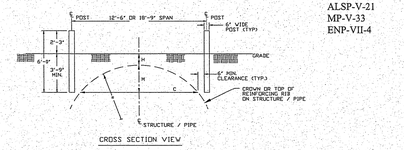
CHIEF ENGINEER
TRANSPORTATION

CHIEF DESIGN ENGINEER
TRANSPORTATION

JUNE 15, 1998
ISSUE DATE

R.I. STANDARD 34.4.0

3/26 STEEL BACKED TIMBER GUARD RAIL DETAIL
SCALE: NTS



CROSS SECTION VIEW

ALSP-V-21
MP-V-33
ENP-VII-4

PROJECT DIMENSIONAL REQUIREMENTS FOR PROPER GUIDE RAIL SPAN USAGE

			Guide Rail Span			
			12'-6"		18'-9"	
H (in)	H (ft)	M (ft)	R (in)	R (ft)	R (in)	R (ft)
12	1	2.75	78	6.5	172	14.3
15	1.25	2.5	83	6.9	185	15.4
16.8	1.4	2.35	85	7.1	196	16.3
18	1.5	2.25	89	7.4	203	16.9
20.4	1.7	2.05	95	7.9	220	18.3
21	1.75	2	96	8	224	18.7
24	2	1.75	107	8.9	253	21.1
27	2.25	1.5	120	10	293	24.4
30	2.5	1.25	142	11.8	348	29
36	3	0.75	228	19	571	47.6
42	3.5	0.25	672	56	1702	141.8

GUIDE RAIL SPAN USAGE OVER BOX CULVERTS

Type	Span Range (B.C. #)	Minimum Cover	Guide Rail Span
Aluminum	8'-9" (1) thru 12'-5" (14)	17"	12'-6"
	11'-7" (15) thru 16'-10" (39)	17"	18'-9"
	17'-9" (40) thru 25'-5" (87)	24"	18'-9"
Steel	9'-8" thru 12'-0"	17"	12'-6"
	12'-2" thru 18'-11"	17"	18'-9"
	19'-0" thru 20'-9"	24"	18'-9"

H = Actual Height of cover (ft)
Measured directly beneath guide rail.

M = Mid-ordinate (ft)
M = (3'-9" post burial) - H

C = Chord of arc (ft)
C = Post span - (6") - (12") - (5")
posts clear max. corr.
If post span is 12'-6", C = 10'-7".
If post span is 18'-9", C = 16'-10".
R = Maximum Radius of crown (plus rib) (ft)
R = (M/2) + (C²/8M)

NOTES:
1. Most low-cover structures and all large pipes will fit in either a 12'-6" or 18'-9" post center span. Compare the table values for "R" with the crown radius on the applicable product shape in question (refer to specific CONTECH catalog). If the product has reinforcing ribs, the height of rib must be added to "R" to allow for proper clearance.
2. Values shown in the tables utilize the FHWA parameters. If the values for a specific project are different, use the equations for dimensional requirements to calculate the proper crown radius and product shape required.
3. The key to this application is the usage of two (2) 12 gage rails nested on top of one another and then bolted to 6" x 8" wooden posts

REFERENCE:
FHWA Memo (9-9-91) on: "W-beam Guardrail over Low-Fill Culverts."

CONTECH CONSTRUCTION PRODUCTS INC.
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GUIDE RAIL APPLICATION
CROWN RADIUS
CORRUGATED METAL PIPE STRUCTURES

DRAWN BY: R.D.B.	REV. BY:	SCALE:
DATE: 04-18-92	DATE: 08-06-96	1008681B

4/26 TYPICAL GUIDE RAIL DETAIL
SCALE: NTS

NOTE:
1. POSTS TO BE SET IN CONCRETE A MINIMUM OF 2 FEET FROM FACE OF HEADWALL

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
FRESHWATER WETLANDS
235 PROMENADE STREET
PROVIDENCE, RI 02908-5767
AS SHOWN ON PLANS
DATED AUG 02 2019
NO CHANGES OR ADDITIONS
APPROVAL
APPROVED WITH CONDITIONS
APPROVAL
DENIED
APPROVAL
APPLICATION NO. 18-0267
PROJECT NOT REQUIRE APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
AUG 02 2019

Environmental Management
APR 17 2019
Office of Water Resources

JASON M. GOLD
No. 7788
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Jason Gold 4/20/19

NOT FOR CONSTRUCTION

ess group
environmental consulting & engineering services

100 Fifth Avenue, 5th Floor
Waltham, Massachusetts 02451
p 781.419.7696
www.essgroup.com

No.	REVISION	DATE	APP BY

DRAWN BY: PKN/GR	CHECKED BY: JMG
DESIGNED BY: JMG	APPROVED BY:

BURRILLVILLE SOLAR
AP 195 LOT 15
DANIELE DRIVE
BURRILLVILLE, RI

APPLICATION TO ALTER WETLANDS
DETAILS

PROJECT No.: B456-000	DRAWING No. D-5
DATE OF ISSUE: 9/28/2018	
SHEET No.: 26 OF 26	
SCALE: AS SHOWN	

DATE: Feb 20, 2019 - 5:12PM
FILENAME: J:\B456-000 BURRILLVILLE SOLAR\04 GRAPHICS\CAD\Drawings\WETLAND APPLICATION TO ALTER\B456-000 APP TO ALTER_DETAILS.dwg
Copyright © ESS Group, Inc. 2018

Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON THE SURVEY

BUILDING		▲/△	NAIL FOUND/SET
AP	ASSESSOR'S PLAT	●/◎	DRILL HOLE FOUND/SET
N/F	NOW OR FORMERLY	⊗/◎	IRON ROD/PIPE FOUND/SET
(D)	DEED	■/□	BOUND FOUND/SET
(M)	MEASURED		SIGN
(CA)	CHORD ANGLE		BOLLARD
HC	HANDICAPPED		SOIL EVALUATION
	PROPERTY LINE	CB	CATCH BASIN
	ASSESSORS LINE	DCB	DOUBLE CATCH BASIN
	TREELINE	DMH	DRAINAGE MANHOLE
		FES	FLARED END SECTION
	GUARDRAIL		GUY POLE
	FENCE	EMH	ELECTRIC MANHOLE/HANDHOLE
	RETAINING WALL	UP	UTILITY/POWER POLE
	STONE WALL		LIGHTPOST
	MINOR CONTOUR LINE	SMH	SEWER/SEPTIC MANHOLE
	MAJOR CONTOUR LINE		SEWER VALVE
	WATER LINE		CLEANOUT
	SEWER LINE		HYDRANT
	SEWER FORCE MAIN		IRRIGATION VALVE
	GAS LINE		WATER VALVE
	ELECTRIC LINE		WELL
	OVERHEAD WIRES		MONITORING WELL
	DRAINAGE LINE		UNKNOWN MANHOLE
			GAS VALVE
		B-1	WETLAND FLAG
			BENCH MARK
			SHRUB
			TREE

Lidar Note:

CONTOUR DATA SHOWN ON THIS PLAN CONFORMS TO A T-4 TOPOGRAPHICAL SURVEY STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS; SAID DATA IS BASED ON ELEVATION INFORMATION THAT WAS COLLECTED WITH AIRBORNE LIDAR TECHNOLOGY FOR THE ENTIRE AREA OF RHODE ISLAND BETWEEN APRIL 22 AND MAY 6, 2011 AS PART OF THE NORTHEAST LIDAR PROJECT.

ALTA/NSPS Land Title Survey Notes

1. THE ADDRESS OF PARCEL IS 0 DANIELE DRIVE.
2. THERE WERE NO PARKING SPACES, OBSERVED AT THE TIME OF THE FIELD SURVEY.
3. THE PARCEL HAS DIRECT ACCESS TO DANIELE DRIVE, A PUBLIC RIGHT OF WAY.
4. THERE ARE NO DIVIDING/PARTY WALLS LOCATED ALONG BOUNDARY OF THE PARCEL.
5. THERE WAS NO OBSERVED EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION AT THE TIME OF THE FIELD SURVEY.
6. THERE WAS NO OBVIOUS EVIDENCE OBSERVED OF A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL ON SITE AT THE TIME OF THE FIELD SURVEY. DIPRETE ENGINEERING IS NOT ACTING AS A EXPERT IN ENVIRONMENTAL MATTERS IN REGARDS TO THIS SURVEY AND IS NOT RESPONSIBLE FOR WHAT A PHASE ONE ENVIRONMENTAL ASSESSMENTS OF THE SUBJECT SITE WOULD REVEAL.
7. RIGHT OF WAY LINES ADJACENT TO SUBJECT PARCEL ARE AS SHOWN.
8. THERE WAS NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED AT THE TIME OF THE FIELD SURVEY.
9. WETLAND LOCATIONS SHOWN BASED ON FIELD SURVEY BY DIPRETE ENGINEERING. WETLAND FLAGS WERE DELINEATED BY ESS GROUP, INC
10. SURVEY BASED ON TITLE COMMITMENT #PC 30715, EFFECTIVE DATA APRIL 28, 2017 BY CATIC.

Utility Notes

1. ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN WERE PROVIDED BY OTHERS AND ARE APPROXIMATE ONLY. LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATION, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS SURVEY. (PLEASE CONTACT DIGSAFE 72 WORKING HOURS PRIOR TO ANY CONSTRUCTION AT 1-888-344-7233). DIPRETE ENGINEERING IS NOT RESPONSIBLE FOR MISSING UNDERGROUND UTILITIES, EITHER IN SERVICE OR ABANDONED, NOT OBSERVED AT THE TIME OF THE SURVEY. DIPRETE ENGINEERING ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
2. UNDERGROUND WATER INFORMATION OBTAINED FROM CITY RECORDS.
   2.1. WATER SERVICE LOCATION FOR SUBJECT PARCEL UNKNOWN.
3. UNDERGROUND SEWER INFORMATION OBTAINED FROM CITY RECORDS
   3.1. SEWER SERVICE LOCATION FOR SUBJECT PARCEL UNKNOWN.
4. UNDERGROUND GAS INFORMATION OBTAINED FROM NATIONAL GRID GIS MAPPING

Datum Note:

1. ELEVATIONS SHOWN HEREON, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), AS DETERMINED BY DIPRETE ENGINEERING USING REAL TIME KINEMATIC G.P.S. OBSERVATIONS.

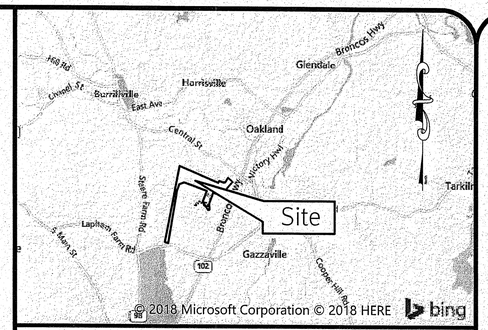
Plan References:

1. REVISED SUBDIVISION OF LAND HEMLOCK FARM; SITUATED IN BURRILLVILLE RHODE ISLAND, PREPARED BY BIBEAULT AND FLORENTZ ENGINEERING COMPANY INCORPORATED, DATED JUNE 1986 RECORD AND BOOK 17 PAGE 10.
2. ADMINISTRATIVE SUBDIVISION, PLAN NUMBER ONE DATED FEBRUARY 10TH 2012 PLAN BY CROSSMAN ENGINEERING RECORDED ON PLAT CARD 521.
3. SUBDIVISION PLAN FINAL SUBDIVISION PLANS, LYNMAR ESTATES PLANT DATED MAY 20TH 1993 PLAN BY MARK W. HUTCHINS AND ASSOCIATES INCORPORATED RECORDED IN PLAT BOOK 22 PAGE 36

List of Possible Encroachments:

A PATHS AND TRAILS CROSS PROPERTY LINE, ACCESS RIGHTS UNKNOWN

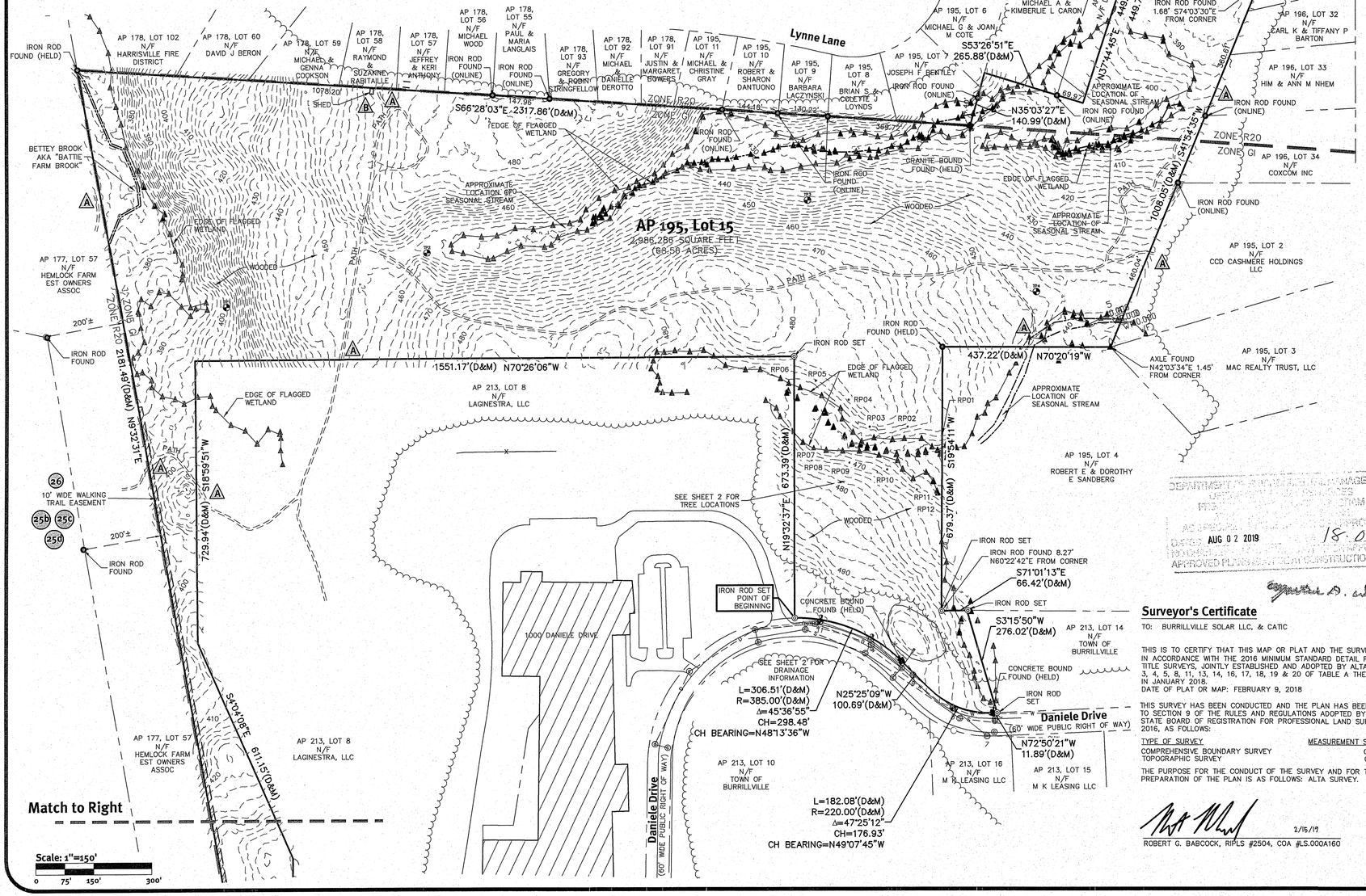
B SHED OVER PROPERTY LINE



Locus Map Not To Scale

General Notes

1. THE PARCEL IS FOUND ON ASSESSOR'S PLAT 195, LOT 15 IN THE TOWN OF BURRILLVILLE, PROVIDENCE COUNTY, RHODE ISLAND.
2. THE OWNER PER DEED BOOK 795, PAGE 212 IS TOWN OF BURRILLVILLE.
3. BASED ON GRAPHICAL PLOTTING ONLY, THE PARCEL IS LOCATED IN X PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP 44007C0135G, DATED MARCH 2, 2009. THIS DESIGNATION MAY CHANGE BASED UPON REVIEW BY A FLOOD ZONE SPECIALIST OR BY THE RESULTS OF A COMPREHENSIVE FLOOD STUDY.
4. THE PARCEL IS ZONED GI & R-20 BASED ON TOWN OF BURRILLVILLE'S GIS MAPPING. ANY OVERLAY DISTRICTS, SPECIAL PERMITS OR VARIANCES SPECIFIC TO THIS SITE ARE NOT TAKEN INTO CONSIDERATION. PLEASE CONTACT THE ZONING DEPARTMENT FOR ANY ADDITIONAL INFORMATION OR FOR A CERTIFICATE OF ZONING. PORTIONS OF THE SITE FALL WITHIN THE A-80 AQUIFER OVERLAY DISTRICT.
5. THERE WERE NO CEMETERIES, GRAVE SITES AND OR BURIAL GROUNDS OBSERVED WITHIN THE LIMITS OF THE SURVEY.
6. FIELD SURVEY PERFORMED BY DIPRETE ENGINEERING IN JANUARY 2018. THIS PLAN REFLECTS ON THE GROUND CONDITIONS AS OF THAT DATE.
7. SUBSTANTIAL PORTIONS OF THE SITE WERE COVERED WITH SNOW AT THE TIME OF THE FIELD SURVEY. DUE TO THIS SNOW COVER PORTIONS OF THE SITE WERE DIGITIZED FROM AERIAL PHOTOGRAPHS. DIPRETE ENGINEERING IS NOT RESPONSIBLE FOR MISSING OR INACCURATE INFORMATION DUE TO SNOW COVER.



Scale: 1"=150'

0 75' 150' 300'

Surveyor's Certificate

TO: BURRILLVILLE SOLAR LLC, & CATIC

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8, 11, 13, 14, 16, 17, 18, 19 & 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED IN JANUARY 2018.
DATE OF PLAT OR MAP: FEBRUARY 9, 2018

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON JANUARY 1, 2016, AS FOLLOWS:

TYPE OF SURVEY	MEASUREMENT SPECIFICATION
COMPREHENSIVE BOUNDARY SURVEY	CLASS I
TOPOGRAPHIC SURVEY	CLASS T-4

THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: ALTA SURVEY.

2/15/19

ROBERT G. BABCOCK, RI/PLS #2504, COA #LS.000A160

ROBERT G. BABCOCK
No. 2504
PROFESSIONAL LAND SURVEYOR

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
WETLANDS PROGRAM
FRESHWATER WETLANDS APPROVAL
AS DESIGNATED BY THE RIDEM
AUG 02 2019
DATED
NO CHANGES MAY BE MADE IN APPROVED PLANS WITHOUT APPROVAL
APPROVED PLANS MUST BE KEPT AT CONSTRUCTION SITE
18-0267

Environmental Management
APR 17 2019
Office of Water Resources

No.	Date	Description	By
0	2/9/18	ALTA/NSPS Land Title Survey	MTI
1	2/23/18	ESS Group, Inc Comments	MTI
2	3/26/18	Drainage & Tree Locations	MTI
3	4/16/18	Wetlands Delineation Note	MTI
4	7/5/19	Stream Locations	MTI

Drawn By: MTI

DiPrete Engineering
Boston • Providence • Newport
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com

ALTA/NSPS Land Title Survey

Daniele Drive

Burrillville, Rhode Island

Client
Burrillville Solar LLC.
20 Park Plaza Suite 320
Boston, MA 02116

SHEET 1 OF 2

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Schedule C Description

THAT CERTAIN TRACT OR PARCEL OF LAND WITH ALL BUILDINGS AND IMPROVEMENTS THEREON, SITUATED ON THE NORTHWESTERLY SIDE OF DANIELE DRIVE, THE NORTHERLY SIDE OF LAPHAM FARM ROAD AND THE EASTERLY SIDE OF STEERE FARM ROAD IN THE TOWN OF BURRILLVILLE, COUNTY OF PROVIDENCE AND THE STATE OF RHODE ISLAND BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT IN THE NORTHERLY SIDE OF DANIELE DRIVE, SAID POINT BEING BOUNDED WESTERLY BY PARCEL A ON SAID PLAN REFERENCED BELOW AND SOUTHERLY BY DANIELE DRIVE;
THENCE N19°–32'–01"E FOR A DISTANCE OF SIX HUNDRED SEVENTY–THREE AND 39/100 (673.39) FEET TO A POINT;
THENCE N70°–26'–42"W FOR A DISTANCE OF ONE THOUSAND FIVE HUNDRED FIFTY–ONE AND 17/100 (551.17) FEET TO A POINT;
THENCE S18°–59'–1"W FOR A DISTANCE OF SEVEN HUNDRED TWENTY–NINE AND 94/100 (729.94) FEET TO A POINT;
THENCE S04°–04'–44"E FOR A DISTANCE OF SIX HUNDRED ELEVEN AND 15/100 (611.15) FEET TO A POINT;
THENCE S19°–32'–08"W FOR A DISTANCE OF ONE HUNDRED TWENTY–SIX AND 53/100 (126.53) FEET TO A POINT;
THENCE S19°–27'–42"W FOR A DISTANCE OF ONE THOUSAND EIGHTY–NINE AND 05/100 (1089.05) FEET TO A POINT;
THENCE S02°–28'–30"E FOR A DISTANCE OF THREE HUNDRED FORTY–EIGHT AND 57/100 (348.57) FEET TO A POINT;
THENCE S80° 18'–15"W FOR A DISTANCE OF TWENTY AND 47/100 (20.47) FEET TO A POINT;
THENCE S88 –03'–15"W FOR A DISTANCE OF TWO HUNDRED EIGHTEEN AND 50/100 (218.50) FEET TO A POINT;
THENCE N55°–11'–45"W FOR A DISTANCE OF ONE HUNDRED NINETY–EIGHT AND 00/100 (198.00) FEET TO A POINT;
THENCE S12°–41'–59"E FOR A DISTANCE OF ONE THOUSAND TWO HUNDRED THIRTY–ONE AND 28/100 (1231.28) FEET TO A POINT;
THENCE N64°–33'–04"E FOR A DISTANCE OF THREE HUNDRED FIFTY–SIX AND 77/100 (356.77) FEET TO A POINT;
THENCE N09°–31'–55"E FOR A DISTANCE OF TWO THOUSAND ONE HUNDRED EIGHTY–ONE AND 49/100 (2181.49) FEET TO A POINT, SAID POINT BEING MARKED BY AN IRON ROD;
THENCE N35°–02'–00"E FOR A DISTANCE OF ONE HUNDRED FORTY AND 99/100 (140.99) FEET TO A POINT;
THENCE S53°–28'–18"E FOR A DISTANCE OF TWO HUNDRED SIXTY–FIVE AND 88/100 (265.88) FEET TO A POINT;
THENCE N37°–43'–18"E FOR A DISTANCE OF FOUR HUNDRED FORTY–NINE AND 76/100 (449.76) FEET TO A POINT;
THENCE S48°–11'–20"E FOR A DISTANCE OF THREE HUNDRED THIRTY–EIGHT AND 69/100 (338.69) FEET TO A POINT;
THENCE S41°–53'–29"W FOR A DISTANCE OF ONE THOUSAND EIGHT AND 05/100 (1008.05) FEET TO A POINT;
THENCE N70°–06'–25"W FOR A DISTANCE OF FOUR HUNDRED THIRTY–SEVEN AND 22/100 (437.22) FEET TO A POINT;
THENCE SL9°–53'–35"W FOR A DISTANCE OF SIX HUNDRED SEVENTY–NINE AND 37/100 (679.37) FEET TO A POINT;
THENCE S70°–06'–25"E FOR A DISTANCE OF SIXTY–SIX AND 42/100 (66.42) FEET TO A POINT;
THENCE S03°–15'–13"W FOR A DISTANCE OF TWO HUNDRED SEVENTY–SIX AND 02/100 (276.02) FEET TO A POINT IN THE NORTHERLY SIDELINE OF SAID DANIELE DRIVE;
THENCE N72°–51'–49"W ALONG THE NORTHERLY LINE OF SAID DANIELE DRIVE FOR A DISTANCE OF ELEVEN AND 89/100 FEET TO A POINT;
THENCE NORTHERLY BEARING NORTHWESTERLY ALONG THE NORTHERLY SIDELINE OF SAID DANIELE DRIVE AND ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF TWO HUNDRED TWENTY AND 00/100 (220.00) FEET AND AN ARC LENGTH OF ONE HUNDRED EIGHTY–TWO AND 08/100 (182.08) FEET TO A POINT;
THENCE N25°–26'–37"W ALONG THE NORTHERLY LINE OF SAID DANIELE DRIVE FOR A DISTANCE OF ONE HUNDRED AND 69/100 (100.69) FEET TO A POINT, SAID POINT MARKED BY A GRANITE BOUND;
THENCE NORTHERLY BEARING NORTHWESTERLY ALONG THE NORTHERLY LINE OF SAID DANIELE DRIVE AND ALONG A CURVE TO THE LEFT HAVING A RADIUS OF THREE HUNDRED EIGHTY–FIVE AND 00/100 (385.00) FEET AND AN ARC LENGTH OF THREE HUNDRED SIX AND 51/1 00 (306.51) FEET TO THE POINT AND PLACE OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS AN AREA OF 68.30 ACRES OF LAND MORE OR LESS AND IS SHOWN AS "PARCEL B" ON A PLAN TITLED "DANIELE FOODS FACILITY EXPANSION, PLAT MAP 195, LOT 15; PLAT MAP 212, LOT 1 AND PLAT MAP 213, LOT 8 PREPARED FOR THE INDUSTRIAL FOUNDATION OF BURRILLVILLE, SCALE: 1 "=200', DATE: FEBRUARY 10, 2012 BY GROSSMAN ENGINEERING"–SAID PLAN RECORDED IN BOOK 2012 PAGES 3 AND 4.

Schedule B Exceptions:

(9) EASEMENT RECORDED IN BOOK 56 AT PAGE 255.
RESPONSE: LOCATION OF PRIVATE ROADWAY UNKNOWN.

(10) EASEMENT RECORDED IN BOOK 58 AT PAGE 8
RESPONSE: LOCATION OF RIGHT OF WAY NOT ESTABLISHED BY DEED.

(11) EASEMENT RECORDED IN BOOK 39 AT PAGE 569.
RESPONSE: LOCATION OF RIGHT OF WAY UNKNOWN.

(12) EASEMENT RECORDED IN BOOK 29 AT PAGE 532.
RESPONSE: AFFECTS SUBJECT PARCEL, BLANKET EASEMENT, NO POWER POLES OBSERVED ON SUBJECT PARCEL.

(13) EASEMENT AND RIGHT OF WAY RECORDED IN BOOK 267 AT PAGE 1083, AS REVISED IN BOOK 029 AT PAGE 533.
RESPONSE: DOES NOT AFFECT, NOT LOCATED ON SUBJECT PARCEL.

(14) WATERLINE EASEMENT DEED RECORDED IN BOOK 277 AT PAGE 258.
RESPONSE: DOES NOT AFFECT, NOT LOCATED ON SUBJECT PARCEL.

(15) EASEMENT RECORDED IN BOOK 278 AT PAGE 267.
RESPONSE: AFFECTS SUBJECT PARCEL, BLANKET EASEMENT.

(16) GRANT OF PERMANENT DRAINAGE EASEMENT RECORDED IN BOOK 437 AT PAGE 236.
RESPONSE: DOES NOT AFFECT, NOT LOCATED ON SUBJECT PARCEL.

(17) GRANT OF EASEMENT RECORDED IN BOOK 290 AT PAGE 207
RESPONSE: DOES NOT AFFECT, NOT LOCATED ON SUBJECT PARCEL.

(18) INSIGNIFICANT ALTERATION – PERMIT DATED JANUARY TO, 2003 RECORDED IN BOOK 272 AT PAGE 0032.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

(19) DECLARATION OF DEED RESTRICTIONS RECORDED IN BOOK 277 AT PAGE 267.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

(20) DECLARATION OF COVENANTS AND RESTRICTIONS COMMERCE PARK RECORDED IN BOOK 537 AT PAGE 192.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

(21) RESTRICTION RECORDED IN BOOK 521 AT PAGE 133.
RESPONSE: DOES NOT AFFECT, NOT LOCATED ON SUBJECT PARCEL.

(22) PERMIT TO ALTER FRESHWATER WETLANDS DATED MARCH 7, 2012 RECORDED IN BOOK 794 AT PAGE 194.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

(23) BURRILLVILLE PLANNING BOARD – FINDINGS OF FACT & DECISION RECORDED IN BOOK 790 AT PAGE 284.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

(24) NOTICE OF VIOLATION DATED AUGUST 18, 1978 COMPLAINT NO. 613 RECORDED IN BOOK 89 AT PAGE 589.
RESPONSE: AFFECTS SUBJECT PARCEL, NOT A SURVEY MATTER.

ALL MATTERS AND CONDITIONS AS SHOWN ON THE FOLLOWING PLANS ENTITLED:

(25a) a. "ADMINISTRATIVE SUBDIVISION ASSESSOR'S MAP 212, LOT 1 AND ASSESSOR'S MAP 213, LOT 3 SITUATED ON BRONCO HIGHWAY – RT. 102, BURRILLVILLE, RHODE ISLAND, SCALE 1"=100'. DATE: NOVEMBER 2002, PREPARED BY CROSSMAN ENGINEERING, INC. SHEET 1 OF 1" RECORDED IN PLAN BOOK 25 AT PAGE 54.
RESPONSE: NO PLOTTLABE EASEMENT ON SUBJECT PARCEL.

(25b) b. "SUBDIVISION OF LAND ASSESSOR'S MAP 212, LOT 1 SITUATED ON BRONCO HIGHWAY – RT. 102 BURRILLVILLE, RHODE ISLAND, SCALE 1"=100'. DATE MARCH, 2003, PREPARED BY GROSSMAN ENGINEERING, INC. SHEET 1 OF 4", RECORDED IN MAP BOOK 2003–6.
RESPONSE: AFFECTS SUBJECT PARCEL, PERTINENT EASEMENTS SHOWN ON SURVEY.

(25c) c. "SUBDIVISION OF LAND ASSESSOR'S MAP 212, LOT 1 SITUATED ON BRONCO HIGHWAY – RT. 102 BURRILLVILLE, RHODE ISLAND, SCALE 1"=200'. DATE APRIL, 2005, PREPARED BY GROSSMAN ENGINEERING, INC. SHEET 1 OF 3", RECORDED IN MAP BOOK 2005–13.
RESPONSE: AFFECTS SUBJECT PARCEL, PERTINENT EASEMENTS SHOWN ON SURVEY.

(25d) d. "SUBDIVISION OF LAND ASSESSOR'S MAP 212, LOT 1 AND ASSESSOR'S MAP 213, LOTS 8 AND 10 SITUATED ON BRONCO HIGHWAY – RT. 102 BURRILLVILLE, RHODE ISLAND, SCALE 1 "=200'. DATE AUGUST, 2005, PREPARED BY GROSSMAN ENGINEERING, INC. SHEET 1 OF 2", RECORDED IN MAP BOOK 2006–19.
RESPONSE: AFFECTS SUBJECT PARCEL, PERTINENT EASEMENTS SHOWN ON SURVEY.

(26) ALL MATTERS AND CONDITIONS AS SHOWN ON PLAN ENTITLED "DANIELE FOODS FACILITY EXPANSION, PLAT MAP 195, LOT 15; PLAT MAY 212, LOT 1 AND PLAT MAP 213, LOT 8 PREPARED BY THE INDUSTRIAL FOUNDATION OF BURRILLVILLE, SCALE: 1"=200', DATE: FEBRUARY 10, 2012 BY GROSSMAN ENGINEERING" – SAID PLAN RECORDED IN BOOK 2012 AT PAGES 3 AND 4.
RESPONSE: AFFECTS SUBJECT PARCEL, PERTINENT EASEMENTS SHOWN ON SURVEY.

Surveyor's Certificate

TO: BURRILLVILLE SOLAR LLC, & CATIC

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8, 11, 13, 14, 16, 17, 18, 19 & 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED IN JANUARY 2018.
DATE OF PLAT OR MAP: FEBRUARY 9, 2018

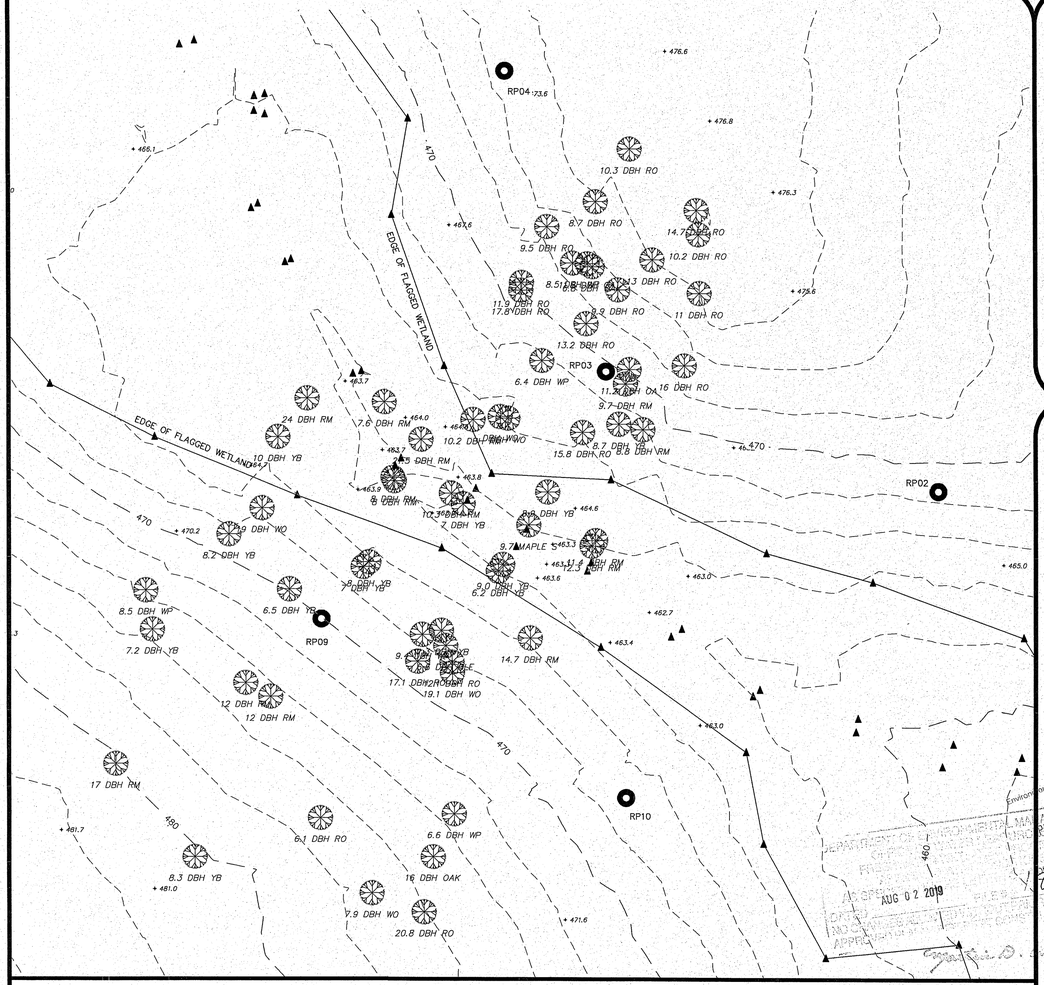
THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON JANUARY 1, 2016, AS FOLLOWS:

TYPE OF SURVEY	MEASUREMENT SPECIFICATION
COMPREHENSIVE BOUNDARY SURVEY	CLASS I
TOPOGRAPHIC SURVEY	CLASS T–4

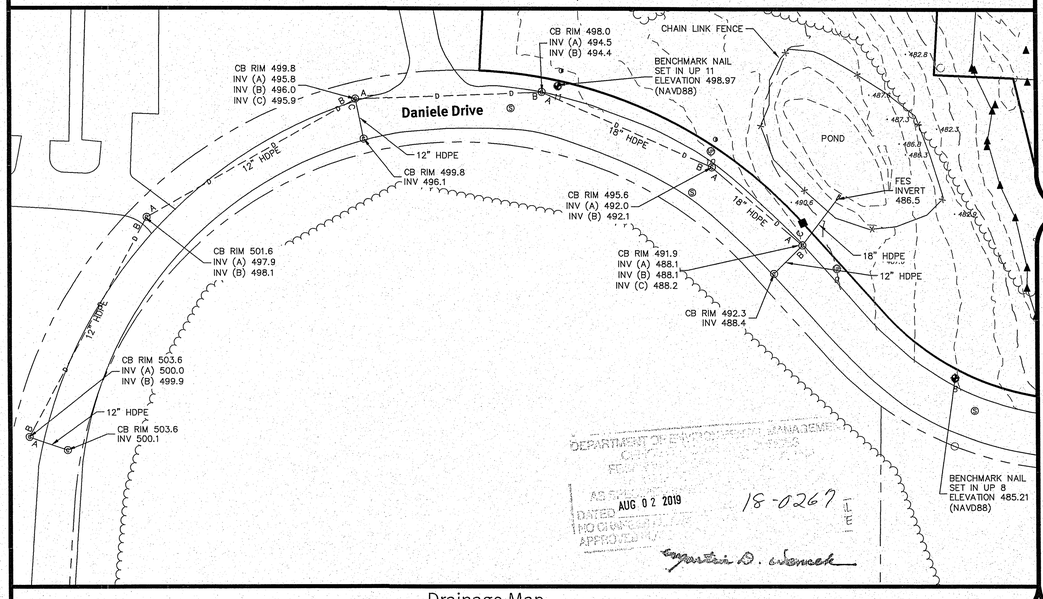
THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: ALTA SURVEY.

2/15/19
ROBERT G. BABCOCK, RIPLS #2504, COA #LS.000A160

ROBERT G. BABCOCK
No. 2504
PROFESSIONAL LAND SURVEYOR



Tree Location Map Scale 1"=20'



Drainage Map Scale 1"=60'

DiPrete Engineering
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Boston • Providence • Newport

No.	Date	Description	By
1	3/5/19	Stream Locations	MTI
2	6/5/18	Wetlands Delineation Note	MTI
3	7/26/18	Drainage & Test Locations	MTI
4	8/16/18	Easements Added & Rev.	MTI
5	2/13/18	EOS comp. W/ Comments	MTI
6	2/9/18	As-Built/ALTA Land Title Survey	MTI

Drawn By: MTI

ALTA/NSPS Land Title Survey
Daniele Drive
Burrillville, Rhode Island

Client
Burrillville Solar LLC.
20 Park Plaza Suite 320
Boston, MA 02116

SHEET 2 OF 2

DE Job No: 2581-001

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources
AS-BUILT
DATE AUG 02 2019
NO CHANGES
APPROVED
18-0267

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