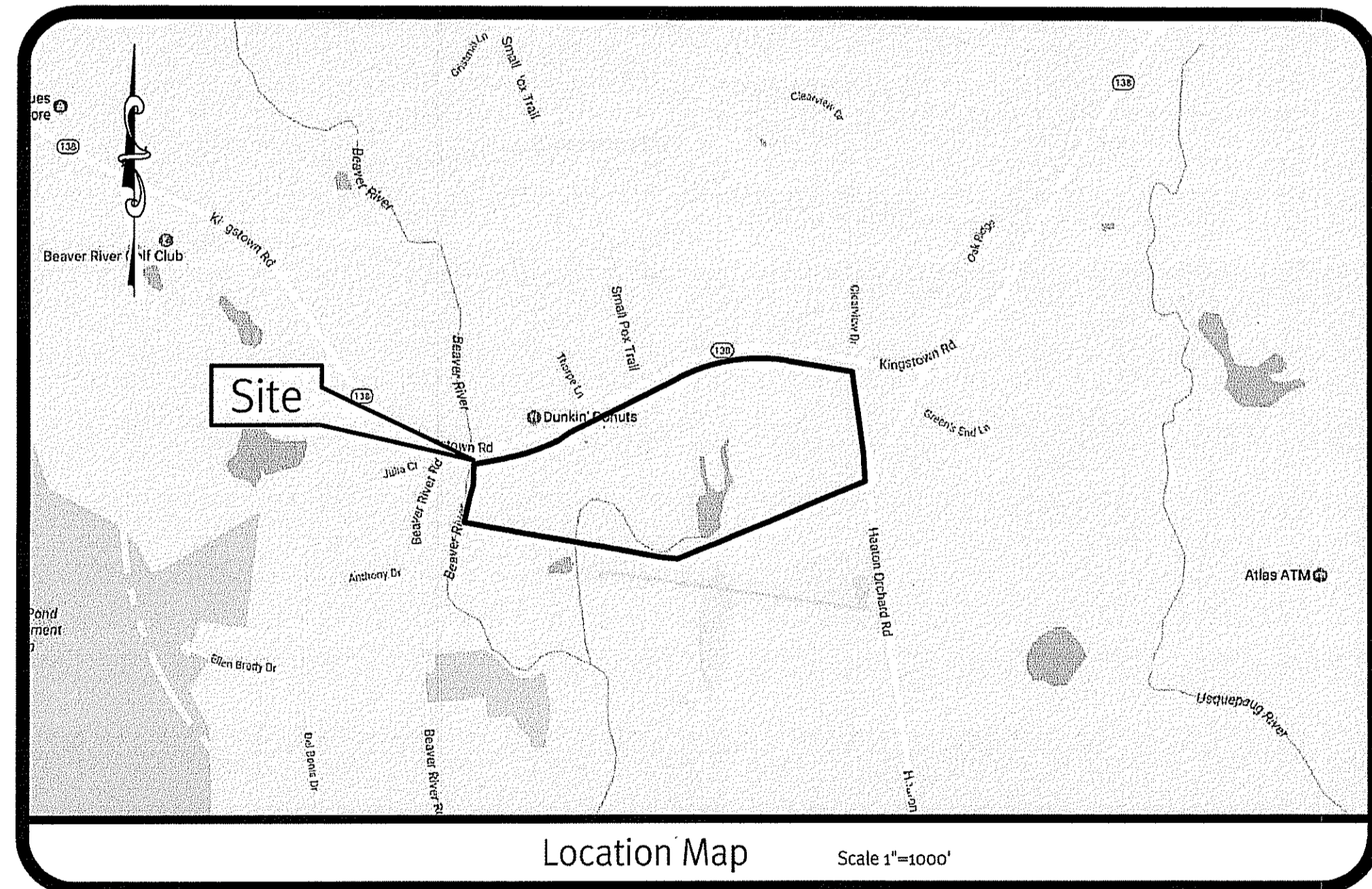


RIDEM Preliminary Determination

WED Kingstown Solar I

421 Kingstown Road
Richmond, Rhode Island

Assessor's Plat 6E Lot 35



Sheet Index

1. Cover Sheet
 2. 1/2 Mile Aerial & USGS
 3. Existing Conditions Plan
 4. Grading Plan
 5. Soil Erosion Control Plan
 6. Detail Sheet
- (1 of 1) Boundary Survey Plan
(1 of 1) One-Line Diagram

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 20 2017 FILE # W-0070
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Jonathan B. Wenzel

SESC / O&M
The Soil Erosion and Sediment Control Plan (SESC) and Operations and Maintenance Plan (O&M) are required documents with this plan set and must be maintained by the contractor and owner onsite.

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel. 401-943-1000 fax 401-664-6006 www.diprete-eng.com

Boston • Providence • Newport

KEVIN C. MORIN
No. 1051
REGISTERED PROFESSIONAL ENGINEER
CIVIL

WIND ENERGY Development LLC
www.WindEnergyDevelopmentLLC.com

This regulatory submission set shall not be used for any other project unless stamped, issued for Construction and signed by a DiPrete Engineering representative.

No.	Date	Description	Drawn By: J.A.C.	Design By: J.A.C.
1	05-24-2017	WED Kingstown Solar I, LLC	J.A.C.	J.A.C.
2	06-03-2017	RIDEM Preliminary Determination	J.A.C.	J.A.C.
3	05-24-2017	RIDEM Preliminary Determination	J.A.C.	J.A.C.

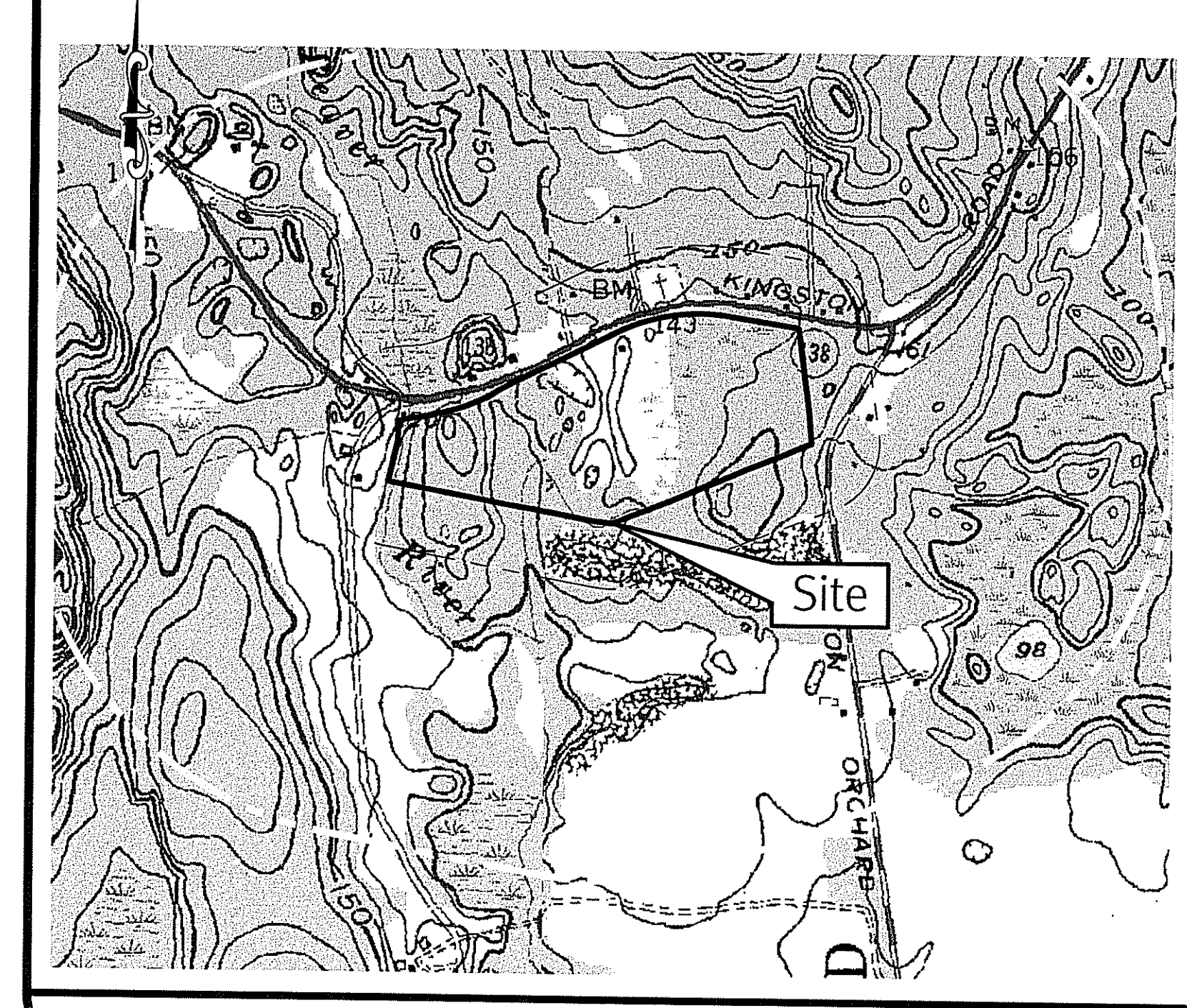
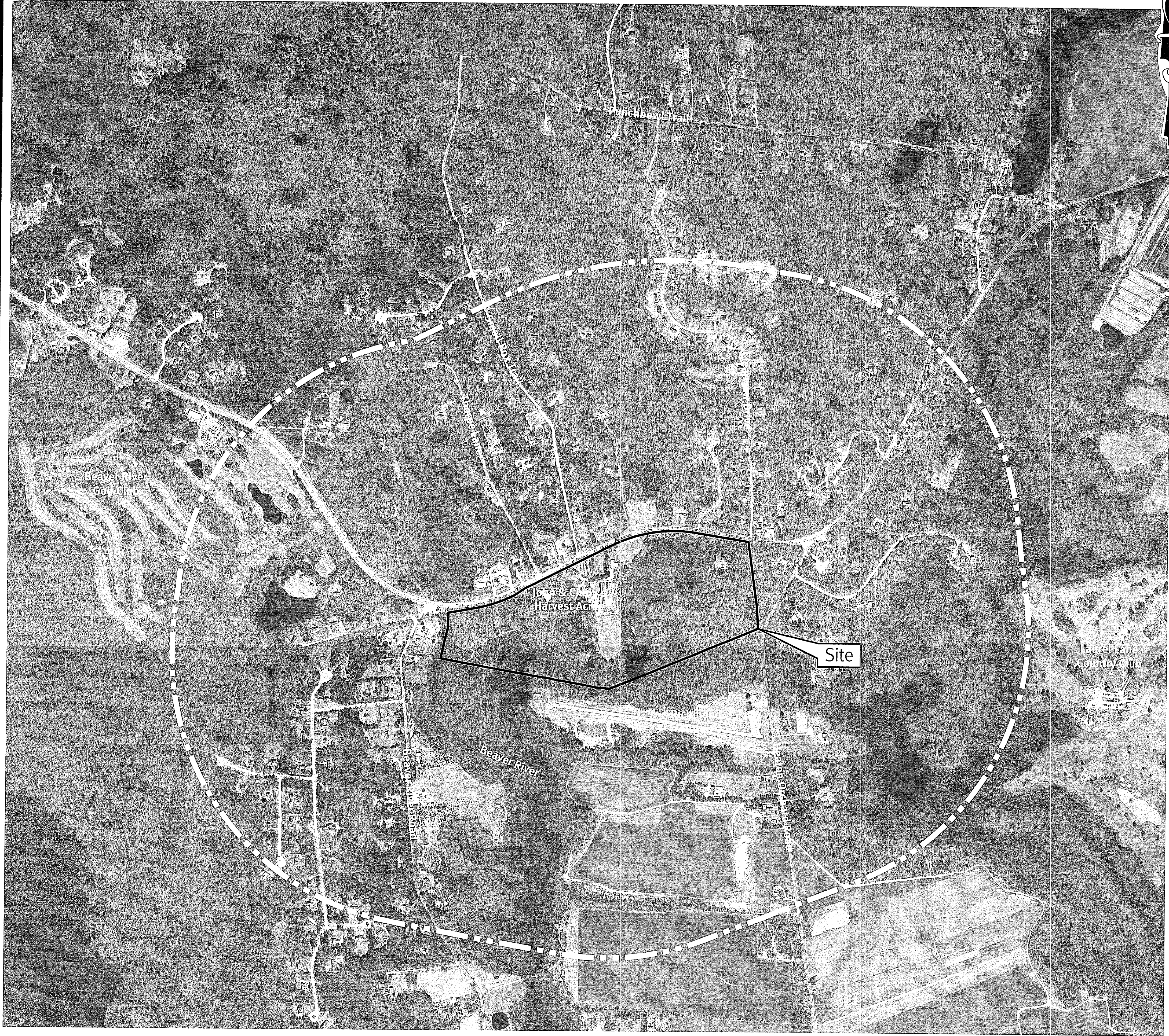
Cover Sheet
WED Kingstown Solar I
Richmond, Rhode Island
Assessor's Plat 6E, Lot 35

Owner: **John & Cindy Duncan**
WED Kingstown Solar I, LLC
3750 Quaker Lane, North Kingstown - 419 Kingstown Road
West Kingstown, Rhode Island 02892
Tel: (401) 935-4998

DATE: MAY 24 2017

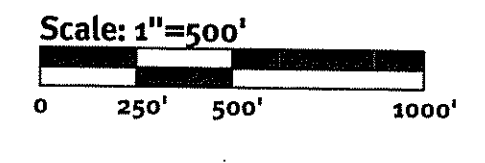
C:\Main\projects\0601-016-kingstown_road_solar\autocad drawings\0601-016-dean-wlp-retc.dwg Plotted: 5/23/2017

Z:\mmanah\project\0603_036 Kingstown road solar\airboard drawings\0603-036-solar-wfp-ret-ctg Plotred: 5/23/2017



USGS Map Scale: 1"=1000'

Photo obtained from the RI-GIS.



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

Boundary Data:

- PROPERTY LINE _____
- 1/2 MILE RADIUS _____
- 500' RADIUS - - - - -

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Martin D. Wenzel

1/2 Mile Aerial and USGS Map
WED Kingstown Solar I
 Richmond, Rhode Island
 Assessors Plat 6E, Lot 35
 Applicant:
WED Kingstown Solar I, LLC
 John & Cindy Duncan
 North Kingstown
 Rhode Island 02882
 tel (401) 295-1998
 DE Job No. 0601-0316 Copyright 2017 by DiPrete Engineering Associates, Inc.

No.	Date	Description	Drawn By: J.A.C.	Design By: J.A.C.
3	03-23-2017	RI-GIS Response to Comments	J.A.C.	J.A.C.
2	02-20-2017	RI-GIS Preliminary Determination	J.A.C.	J.A.C.
1	02-24-2017	Construction Plan Submission	J.A.C.	J.A.C.
0				

The contractor is responsible for all of the means, methods, safety precautions and requirements, and OSHA conformance in the implementation of this plan and design.

This regulatory submission set shall not be used for construction purposes unless stamped 'Issued for Construction' and signed by a DiPrete Engineering representative.



KEVIN C. MORIN
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 Boston • Providence • Newport

General Notes:

- THE SITE IS LOCATED IN THE TOWN OF RICHMOND, RHODE ISLAND, ASSESSOR'S PLAT 6E LOT 35.
- THE SITE IS APPROXIMATELY 70.05± ACRES AND IS ZONED LI.
- THE OWNER OF AP 6E LOT 35 IS: JOHN & CINDY DUNCAN
419 KINGSTOWN ROAD
WEST KINGSTOWN, RI 02892
- THE SITE IS LOCATED IN FEMA FLOOD ZONES A AND X. REFERENCE FEMA FLOOD INSURANCE RATE MAP 4409C0160H AND 4409C0180H, MAP REVISED OCTOBER 19TH, 2010. (FLOOD PLAIN DESCRIPTIONS SHOWN BELOW)

FEMA ZONE A - THIS SITE IS LOCATED IN FEMA FLOOD ZONE A. ZONE A ARE AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARD FACTORS NOT DETERMINED.

ZONE X (UNSHADED) - THIS SITE IS LOCATED IN FEMA FLOOD ZONE X. ZONE X ARE AREAS WHERE THERE IS MINIMAL FLOODING.
- THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE SURVEY MAY DISCLOSE.
- THE BOUNDARY LINE AS SHOWN ON THIS PLAN DEPICTS A CLASS I SURVEY AS PERFORMED BY NATIONAL SURVEYORS-DEVELOPERS, INC. THE PLAN ITSELF CONFORMS ONLY TO A CLASS III STANDARD AS ADOPTED BY RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.
- SOIL MAPPING OBTAINED FROM SOIL SURVEY OF RHODE ISLAND, PREPARED BY U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
- THE SITE IS WITHIN A:

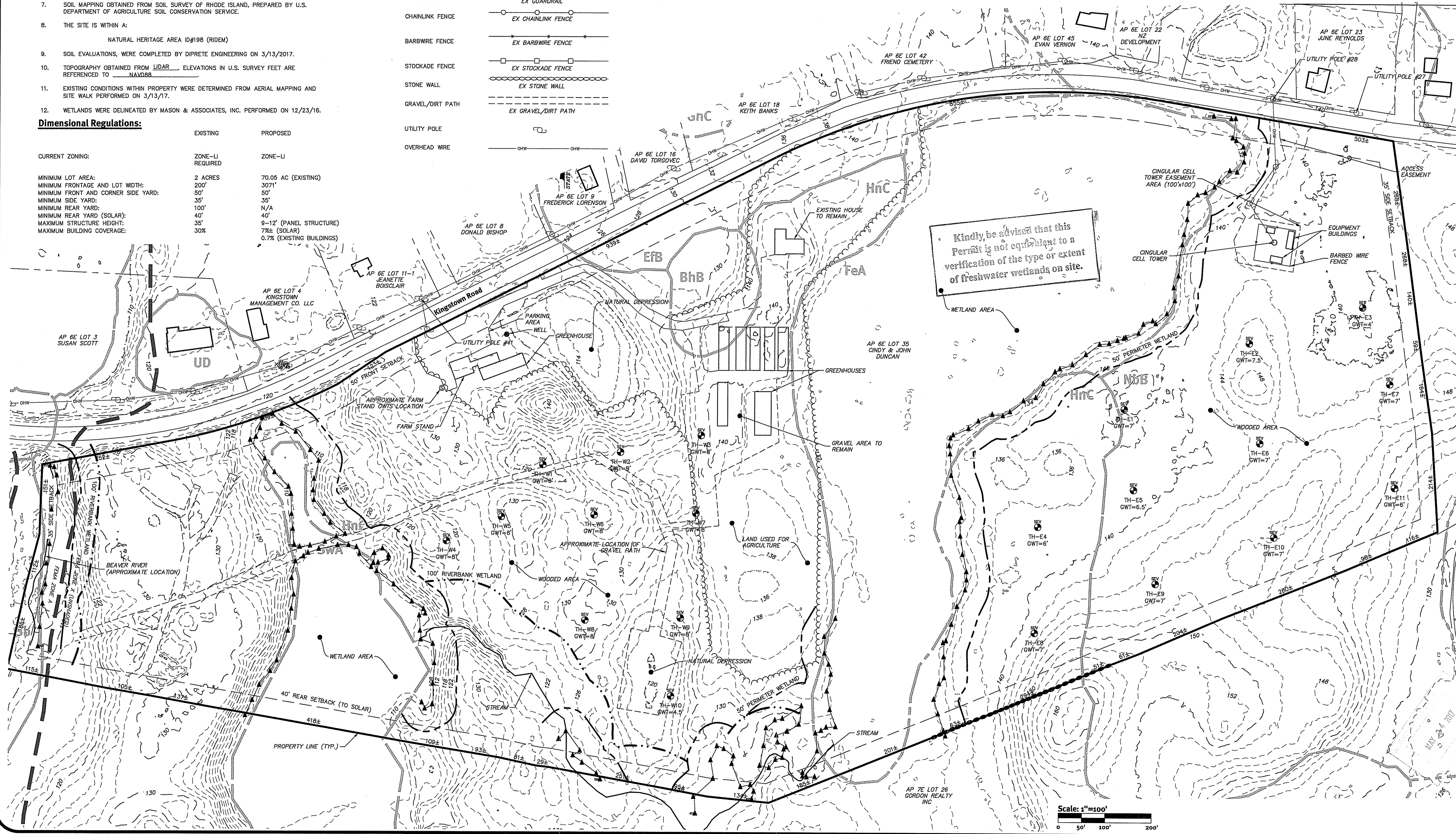
NATURAL HERITAGE AREA ID#198 (RIDEEM)
- SOIL EVALUATIONS, WERE COMPLETED BY DIPRETE ENGINEERING ON 3/13/2017.
- TOPOGRAPHY OBTAINED FROM LIDAR. ELEVATIONS IN U.S. SURVEY FEET ARE REFERENCED TO NAVD83.
- EXISTING CONDITIONS WITHIN PROPERTY WERE DETERMINED FROM AERIAL MAPPING AND SITE WALK PERFORMED ON 3/13/17.
- WETLANDS WERE DELINEATED BY MASON & ASSOCIATES, INC. PERFORMED ON 12/23/16.

Dimensional Regulations:

CURRENT ZONING:	EXISTING	PROPOSED
MINIMUM LOT AREA:	2 ACRES	70.05 AC (EXISTING)
MINIMUM FRONTAGE AND LOT WIDTH:	200'	3071'
MINIMUM FRONT AND CORNER SIDE YARD:	50'	50'
MINIMUM SIDE YARD:	35'	35'
MINIMUM REAR YARD:	100'	40'
MINIMUM REAR YARD (SOLAR):	40'	N/A
MAXIMUM STRUCTURE HEIGHT:	35'	9'-12' (PANEL STRUCTURE)
MAXIMUM BUILDING COVERAGE:	30%	7%± (SOLAR) 0.7% (EXISTING BUILDINGS)

Existing Data:

- SOIL BOUNDARY LINE: HkC, CaD
- EDGE OF PAVEMENT: EX EDGE OF PAVEMENT
- ASPHALT PAVEMENT
- CONCRETE
- BUILDING
- TREELINE: EX TREELINE
- TREES
- GUARDRAIL: EX GUARDRAIL
- CHAINLINK FENCE: EX CHAINLINK FENCE
- BARBWIRE FENCE: EX BARBWIRE FENCE
- STOCKADE FENCE: EX STOCKADE FENCE
- STONE WALL: EX STONE WALL
- GRAVEL/DIRT PATH: EX GRAVEL/DIRT PATH
- UTILITY POLE
- OVERHEAD WIRE



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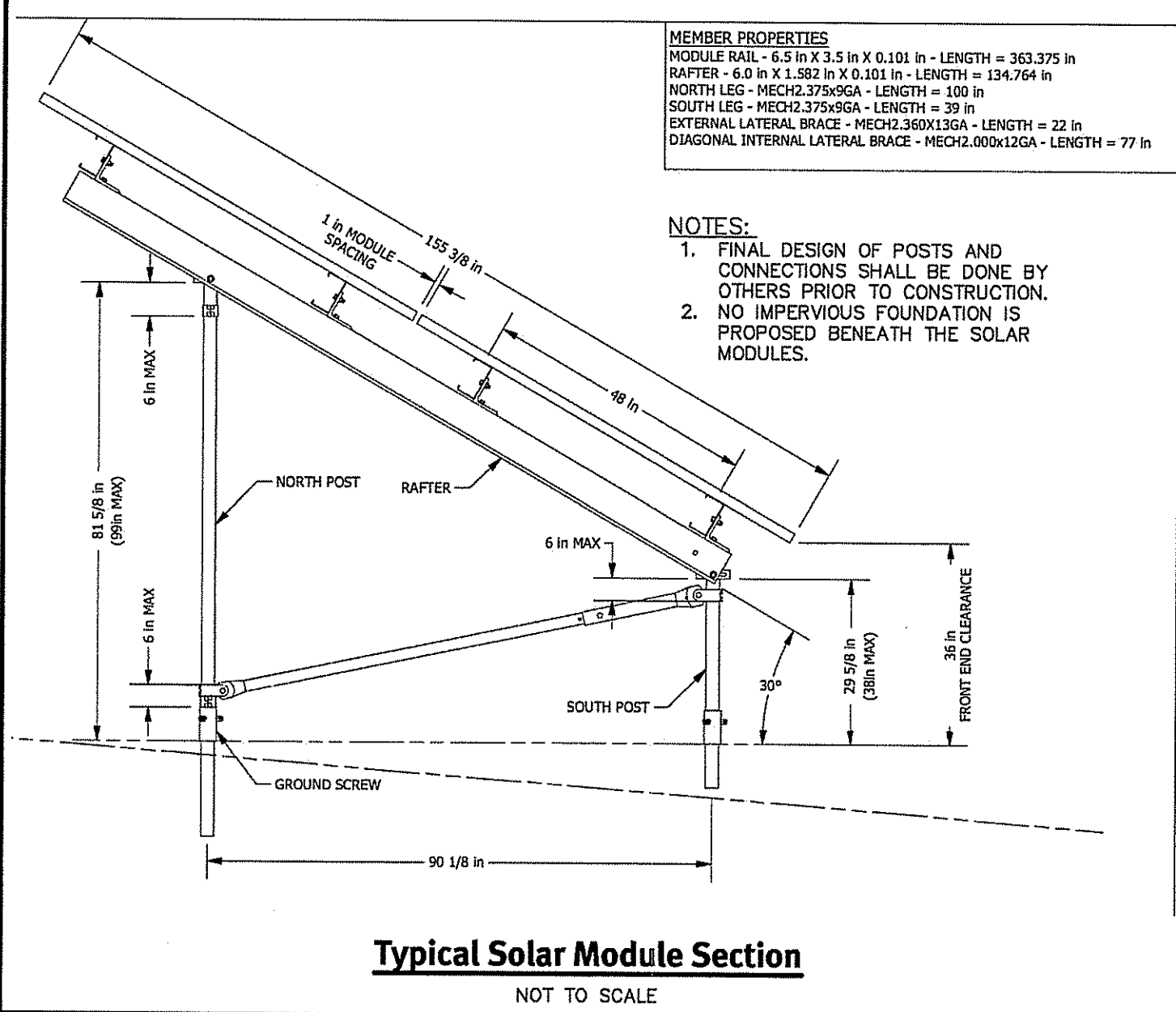
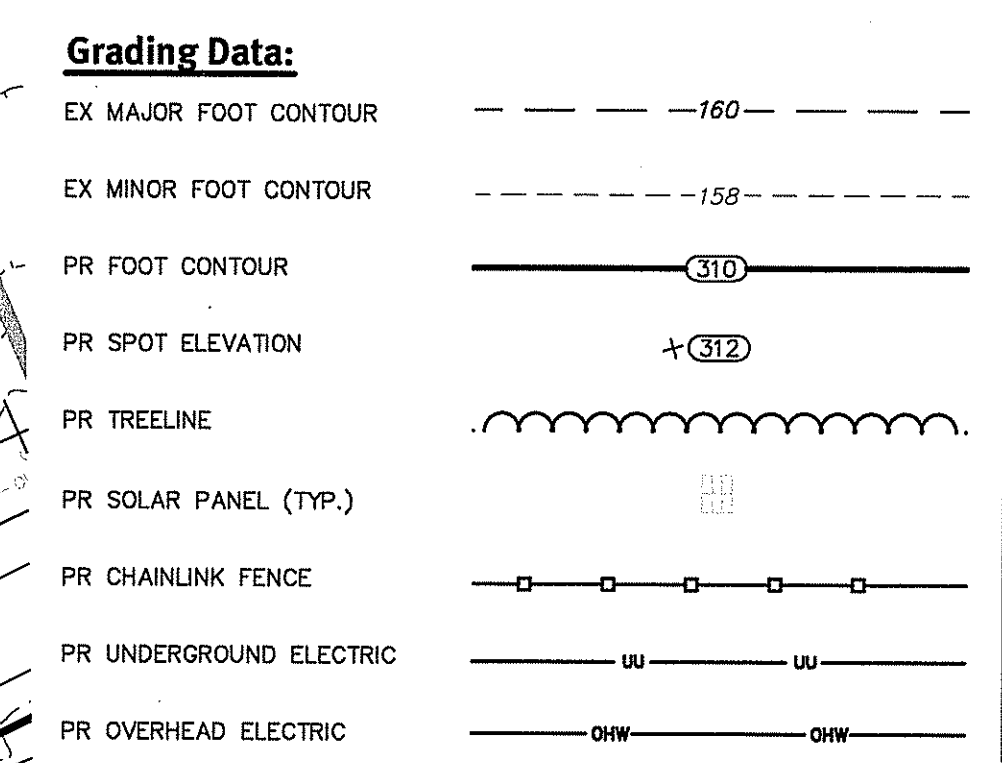
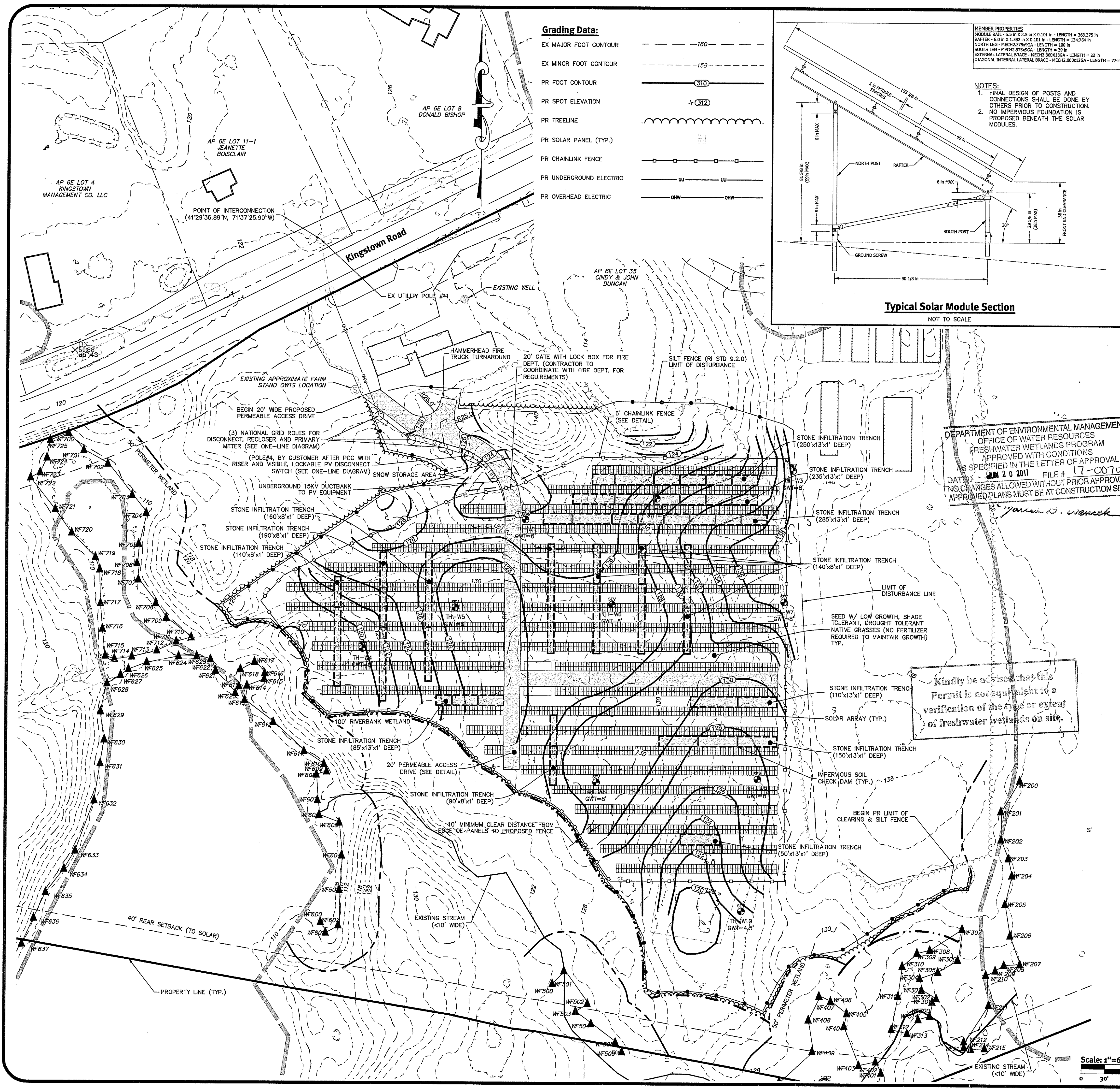
WIND ENERGY Development LLC
www.WindEnergyDevelopmentLLC.com

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No.	Date	Description	By:
1	4-23-2017	REVISION TO COMMENTS	JAC
2	5-22-2017	REVISION TO COMMENTS	JAC
3	5-24-2017	REVISION TO COMMENTS	JAC
4	5-24-2017	REVISION TO COMMENTS	JAC
5	5-24-2017	REVISION TO COMMENTS	JAC

Drawn By: JAC, Design By: JAC

Existing Conditions Plan
WED Kingstown Solar I
Richmond, Rhode Island
Assessors Plat 6E, Lot 35
Owner: **John & Cindy Duncan**
WED Kingstown Solar I, LLC
3765 Quaker Lane, North Kingstown
West Kingstown, Rhode Island 02892
tel (401) 295-6998



- General Notes:**
- THE SITE IS LOCATED IN THE TOWN OF RICHMOND, RHODE ISLAND, ASSESSOR'S PLAT 6E LOT 35.
 - THE SITE IS APPROXIMATELY 70.05± ACRES AND IS ZONED L1.
 - THE OWNER OF AP 6E LOT 35 IS: JOHN & CINDY DUNCAN, 419 KINGSTOWN ROAD, WEST KINGSTON, RI 02892
 - THIS SITE IS LOCATED IN FEMA FLOOD ZONES A AND X. REFERENCE FEMA FLOOD INSURANCE RATE MAP 44009C0160H AND 44009C0180H, MAP REVISED OCTOBER 19TH, 2010. (FLOOD PLAIN DESCRIPTIONS SHOWN BELOW)
FEMA ZONE A - THIS SITE IS LOCATED IN FEMA FLOOD ZONE A. ZONE A ARE AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARD FACTORS NOT DETERMINED.
ZONE X (UNSHADED) - THIS SITE IS LOCATED IN FEMA FLOOD ZONE X. ZONE X ARE AREAS WHERE THERE IS MINIMAL FLOODING.
 - THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE SURVEY MAY DISCLOSE.
 - THE BOUNDARY LINE AS SHOWN ON THIS PLAN DEPICTS A CLASS I SURVEY AS PERFORMED BY NATIONAL SURVEYORS-DEVELOPERS, INC. THE PLAN ITSELF CONFORMS ONLY TO A CLASS III STANDARD AS ADOPTED BY RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.
 - SOIL MAPPING OBTAINED FROM SOIL SURVEY OF RHODE ISLAND, PREPARED BY U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
 - THE SITE IS NOT WITHIN A:
GROUNDWATER PROTECTION AREA (RIDEM)
NARROW RIVER SPECIAL AREA MANAGEMENT PLAN (CRMC)
SALT POND SPECIAL AREA MANAGEMENT PLAN (CRMC)
GROUNDWATER PROTECTION OVERLAY DISTRICT (TOWN)
 - THE SITE IS WITHIN A:
NATURAL HERITAGE AREA ID#198 (RIDEM)
 - THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE PROJECT PLANS AND THE CONTRACTOR/ OWNER MUST MAINTAIN THESE DOCUMENTS AS PART OF A FULL PLAN SET:
• SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC). THE SESC CONTAINS THE FOLLOWING:
o EROSION CONTROL MEASURES
o SHORT TERM MAINTENANCE
o ESTABLISHMENT OF VEGETATIVE COVER
o CONSTRUCTION POLLUTION PREVENTION
o SEQUENCE OF CONSTRUCTION
• OPERATIONS AND MAINTENANCE PLAN (O&M). THE O&M CONTAINS THE FOLLOWING:
o LONG TERM MAINTENANCE
o LONG TERM POLLUTION PREVENTION
 - THIS PLAN SET REFERENCES RIDOT STANDARD DETAILS (DESIGNATED AS RIDOT STD X.X.X.). RIDOT STANDARD DETAILS ARE AVAILABLE FROM RIDOT AND ONLINE AT: [HTTP://WWW.DOT.RI.GOV/BUSINESS/CONTRACTORSANDCONSULTANTS.PHP](http://www.dot.ri.gov/business/contractorsandconsultants.php).
 - DETAILED SOIL EROSION AND SEDIMENT CONTROL MEASURES TO BE INCORPORATED AT THE PRELIMINARY DESIGN STAGE AND WILL CONFORM TO RIDEM BEST MANAGEMENT PRACTICES.
 - THE SITE IS SERVICED BY PRIVATE WELL AND PRIVATE OWTS, WHICH IS TO REMAIN.
 - THE SITE IS PROPOSED TO BE BUILT IN 1 PHASE.
 - SOIL EVALUATIONS WERE COMPLETED BY DIPRETE ENGINEERING ON MARCH 13TH, 2017.
 - THERE ARE NO HISTORIC CEMETERIES LOCATED ON SITE.
 - TRENCH DEPTHS NOTED ARE FOR AREAS OF MINIMAL FILL WHERE BOTTOM TRENCH IS LOCATED IN NATIVE SOIL. DEPTH SHALL BE INCREASED WHERE APPLICABLE TO ALLOW FOR BOTTOM TRENCHES IN NATIVE SOIL.

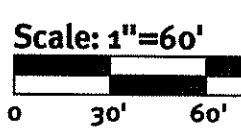
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: **MAY 20 2017** FILE # **17-0070**
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

John W. Wenczek

- Grading and Utility Notes:**
- THE CONTRACTOR IS RESPONSIBLE FOR ALL SOIL EROSION AND SEDIMENT CONTROL ON SITE. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER, THE DIRECTOR OF PUBLIC WORKS, THE TOWN ENGINEER, AND RI DEPT. OF ENVIRONMENTAL MANAGEMENT AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
 - CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
 - CONSTRUCTION TO COMMENCE SPRING 2017 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
 - ALL WORK PERFORMED HEREIN SHALL BE COVERED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND TOWN OF RICHMOND STANDARD SPECIFICATIONS AND DETAILS.
 - SEQUENCE OF CONSTRUCTION PROVIDED/SHOWN IN SESC MAY BE MODIFIED AS FIELD CONDITIONS WARRANT WITH PRIOR APPROVAL FROM THE OWNER OR OWNER'S REPRESENTATIVE.
 - THE CONTRACTOR SHALL COORDINATE WITH ALL OF THE APPROPRIATE UTILITY COMPANIES FOR AGREEMENTS TO SERVICE THE PROPOSED SITE. THIS SHALL BE DONE PRIOR TO CONSTRUCTION. NO REPRESENTATIONS ARE MADE BY DIPRETE ENGINEERING THAT UTILITY SERVICE IS AVAILABLE.
 - PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED DRIVE, TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
 - ALL PROPOSED UNDERGROUND UTILITIES SERVING THE SOLAR PROJECT AREA TO BE COORDINATED WITH APPLICANT AND ENGINEER PRIOR TO INSTALLATION.
 - ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION INCLUDING ALL REVISIONS.
 - ALL CUT AND FILL AREAS ARE TO BE DONE UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER WITH TESTING AND CERTIFICATION TO BE PROVIDED TO THE APPLICANT AT THE COMPLETION OF THE PROJECT. DIPRETE ENGINEERING ASSOCIATES, INC. IS NOT PROVIDING THE FILL SPECIFICATION, GEOTECHNICAL ENGINEERING, STRUCTURAL ENGINEERING SERVICES, OR SUPERVISION AS PART OF THESE DRAWINGS.
 - NO STOCKPIILING OF MATERIAL TO BE LOCATED IN THE RIGHT OF WAY AND NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
 - ALL LOAM IN DISTURBED AREAS TO BE STOCKPILED FOR FUTURE USE.
 - ALL EXCESS SOIL, TREES, ROCKS, BOULDERS, AND OTHER REFUSE, SHALL BE DISCARDED OFF SITE IN AN ACCEPTABLE MANNER AT AN APPROVED LOCATION. STUMPS SHALL BE GROUND ON SITE OR REMOVED.
 - NO STUMP DUMPS ARE PROPOSED ON SITE.
 - ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS FROM OTHERS, OR INFORMATION PROVIDED TO DIPRETE ENGINEERING AND ARE SUBJECT TO CHANGE. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM AFORESAID PLANS OF RECORD AND ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, THE PROPER UTILITY ENGINEERING DEPARTMENTS SHALL BE CONTACTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. CALL THE DIG SAFE CENTER TOLL FREE AT 1-888-344-7233 IN MA, ME, NH, RI & VT, CALL 1-800-922-4455 IN CT 72 HOURS (48 HOURS IN VT AND CT) PRIOR TO EXCAVATION. NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO EXCAVATION. ANY DAMAGE TO UTILITIES WHICH ARE SHOWN ON THE PLANS OR DETAILED BY DIG SAFE SHALL BE THE SITE CONTRACTORS RESPONSIBILITY.
 - IF CONCRETE TRUCKS ARE WASHED OUT ON SITE, ALL WASHOUT MUST BE COMPLETED IN THE DESIGNATED CONCRETE WASHOUT AREA.

- Landscape Notes:**
- THE CONTRACTOR IS TO SEED PROPOSED GRASSED AREAS WITH LOW GROWTH, SHADE TOLERANT, DROUGHT TOLERANT NATIVE GRASSES (NO FERTILIZER TO MAINTAIN GROWTH).
 - PUBLIC TREES THAT ARE REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH EQUIVALENT.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.



Diprete Engineering
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tel 401-943-1000 fax 401-943-6006 www.diprete-eng.com

KEVIN C. MORIN
REGISTERED PROFESSIONAL ENGINEER CIVIL

WIND ENERGY Development LLC
www.WindEnergyDevelopmentLLC.com

3	03/29/2017	REVISED PROGRESS TO CONTRACT	JAC	By:	JAC	
2	03/29/2017	REVISED PRELIMINARY DOCUMENTATION	JAC	By:	JAC	
1	03/29/2017	REVISED PRELIMINARY DOCUMENTATION	JAC	By:	JAC	
No.	Date	Description	Drawn By:	JAC	Design By:	JAC

Grading Plan
WED Kingstown Solar I
Richmond, Rhode Island
Assessors Plat 6E Lot 35
Applicant: **WED Kingstown Solar I, LLC**
John & Cindy Duncan
3766 Quaker Lane, North Kingstown
West Kingston, Rhode Island 02892
tel (401) 295-9298

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SHEET 4 OF 6



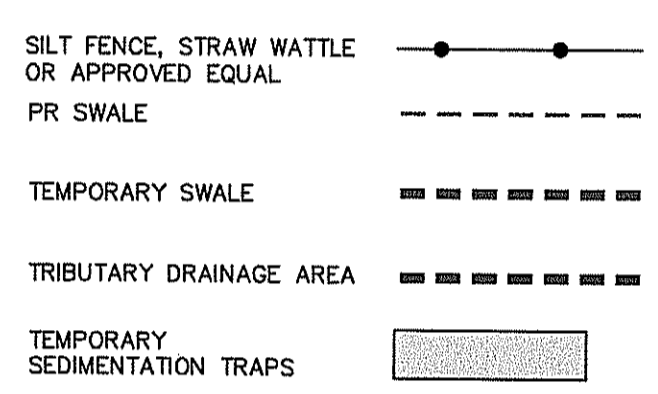
SESC Notes:

1. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS FROM OTHERS, OR INFORMATION PROVIDED TO DIPRETE ENGINEERING AND ARE SUBJECT TO CHANGE. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM AFOREMENTIONED PLANS OF RECORD AND ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, THE PROPER UTILITY ENGINEERING DEPARTMENTS SHALL BE CONTACTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. CALL THE DIG SAFE CENTER TOLL FREE AT 1-888-344-7233, 72 HOURS PRIOR TO EXCAVATION. NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO EXCAVATION. ANY DAMAGE TO UTILITIES WHICH ARE SHOWN ON THE PLANS OR DETAILED BY DIG SAFE SHALL BE THE SITE CONTRACTORS RESPONSIBILITY.
2. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR TO PERFORM DAILY SWEEPING AT CONSTRUCTION ENTRANCE DURING DEMOLITION AND CONSTRUCTION TO MINIMIZE SEDIMENTS ON KINGSTOWN ROAD.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) ALL MATERIALS INDICATED ON THE PLANS UNLESS SPECIFIED OTHERWISE HERE IN. R&D MATERIALS TO INCLUDE BUT NOT LIMITED TO GRAVEL, TREES, STUMPS AND ANY EXCESS SOIL THAT IS NOT INCORPORATED INTO THE WORK.
5. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, ALL DISTURBED AREAS INCLUDING THE CONTRACTOR'S STOCKPILE AND STAGING AREAS WITHIN THE LIMIT OF WORK SHALL BE RESTORED TO MATCH THE DESIGN PLANS.

General Notes:

1. THE SITE IS PROPOSED TO BE BUILT IN ONE PHASE, EACH CATCHMENT AREA IS UNDER 5 ACRES.
2. CONTRACTOR SHALL PROVIDE STORAGE FOR WATER AS NECESSARY TO ENSURE PROPER DUST CONTROL.
3. ALL EROSION CONTROL, TEMPORARY SWALES, TEMPORARY SEDIMENTATION TRAPS, ETC. SHALL BE INSTALLED PER THE RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL LATEST EDITION AND THE SOIL EROSION SEDIMENTATION CONTROL PLAN (SESC).
4. TEMPORARY SWALES SHALL BE USED TO CONTROL RUNOFF DURING CONSTRUCTION. EROSION CONTROL MATS SHALL BE INSTALLED IF NECESSARY TO PREVENT EROSION AND SUPPORT VEGETATION. AFTER CONSTRUCTION IS COMPLETE AND TRIBUTARY AREAS TO THE SWALES HAVE BEEN STABILIZED, THE TEMPORARY SWALES SHALL BE REMOVED.
5. ONCE THE SEDIMENTATION TRAP IS NO LONGER REQUIRED AND ALL TRIBUTARY AREAS HAVE BEEN STABILIZED, THE TEMPORARY SEDIMENTATION TRAP SHALL BE REMOVED AND AREA TO BE BROUGHT TO FINAL DESIGN GRADES.
6. SEE SECTION 1.2 OF THE SESC FOR SEQUENCE OF CONSTRUCTION ACTIVITY.
7. SEE SECTION 2.2 OF THE SESC FOR PROJECT PHASING.
8. CONTRACTOR MAY MODIFY SEQUENCE OF CONSTRUCTION WITH APPROVAL FROM DESIGN ENGINEER.
9. FOR CONSTRUCTION PHASING SEE SECTION 2.2 OF SOIL EROSION AND SEDIMENT CONTROL PLAN.
10. THIS PLAN SET REFERENCES RIDOT STANDARD DETAILS (DESIGNATED AS RIDOT STD X.X.X.), RIDOT STANDARD DETAILS ARE AVAILABLE FROM RIDOT AND ONLINE AT: [HTTP://WWW.DOT.RI.GOV/BUSINESS/CONTRACTORSANDCONSULTANTS.PHP](http://www.dot.ri.gov/business/contractorsandconsultants.php).

Legend:



Construction Phasing:

1. FLAG/SURVEY LIMIT OF DISTURBANCE. EACH TRIBUTARY DRAINAGE AREA SHALL DISTURB A MAXIMUM OF 5 ACRES. INSTALL PERIMETER EROSION CONTROL DEVICES (SILT FENCE, SEDIMENT TRAP).
2. CLEAR AND GRUB SITE, INSTALL TEMPORARY SWALES AND SEDIMENTATION TRAPS.
3. RE-GRADE SITE AND LOAM & SEED ALL DISTURBED AREAS. STABILIZE ALL AREAS.
4. CONSTRUCT STONE INFILTRATION TRENCHES AND BERMS.
5. REMOVE TEMPORARY SWALES AND SEDIMENTATION TRAPS AFTER TRIBUTARY AREAS ARE FULLY STABILIZED.

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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MAY 24 2017
 CIVIL ENGINEERING

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 Tel: 401-943-1000 Fax: 401-943-4006 www.diprete-eng.com
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KEVIN C. MORIN
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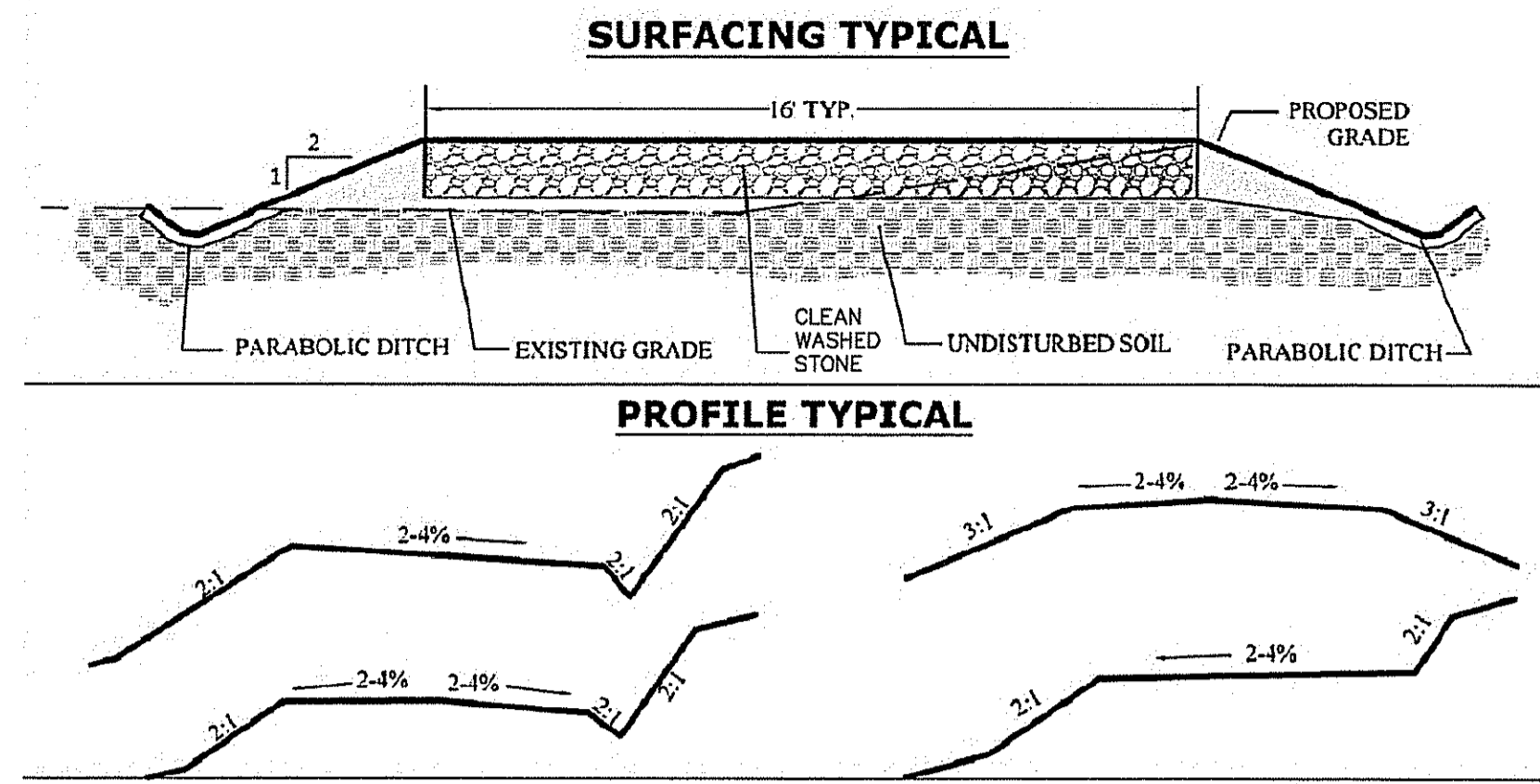
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No.	Date	Description	By	For
1	05/20/2017	80501 Responses to Comments	J.A.C.	J.A.C.
2	05/22/2017	80501 Preliminary Determination	J.A.C.	J.A.C.
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4	05/24/2017	80501 Final Submission	J.A.C.	J.A.C.

Design By: J.A.C.

Soil Erosion Control Plan
WED Kingstown Solar I
 Richmond, Rhode Island
 Assessors Plat 6E, Lot 35
 Applicant: **WED Kingstown Solar I, LLC**
 3760 Quaker Lane, North Kingstown
 Rhode Island 02882
 Tel: (401) 923-6295
 Owner: **John & Cindy Duncan**
 415 Kingstown Road
 West Kingstown, Rhode Island 02892
 DE Job No: 0601-016 Copyright 2017 by Diprete Engineering Associates, Inc.



SURFACING SPECIFICATIONS

Conditions:	Road Thickness	Stone Size	Fines
Base Layer with Geotextile Fabric (not excessively wet)	6" Min.	3-3 1/2"	0-6%
Base Layer with Geotextile Fabric (wet conditions)	6" Min.	3-3 1/2"	0-6%

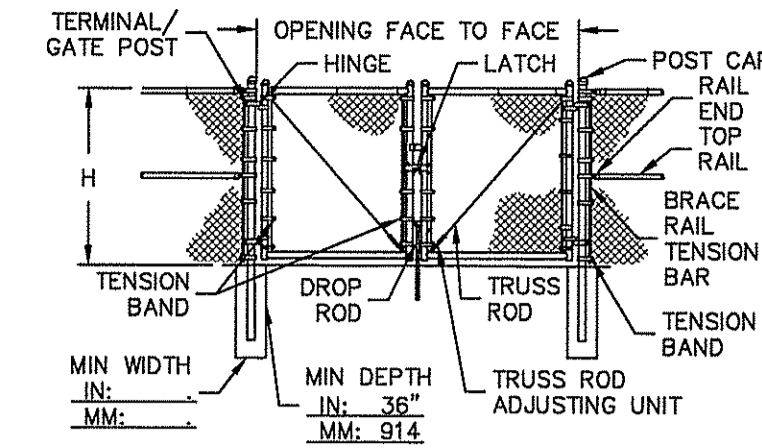
MATERIAL SPECIFICATIONS

Sieve Designation	Percentage by Mass (Weight) Passing Square Mesh Sieves
90mm (3.5 inch)	100
75mm (3 inch)	90-100
50mm (2 inch)	75-100
25mm (1 inch)	50-80
12.5mm (1/2 inch)	30-60
4.75mm (No. 4)	15-40
75um (No. 200)	0-6

DENSE GRADED CRUSHED STONE FOR SUBBASE:
 A. Dense graded crushed stone for subbase shall consist of clean, hard, uniformly graded, rounded stone. It shall be sufficiently free from dirt, deleterious material, and pieces that are structurally weak and shall meet the following requirements:
 B. Source of material shall be that obtained from areas stripped and cleaned of soil and debris before blasting.
 C. Material coarser than the 4.75 mm (No. 4) sieve shall not be more than 35 percent, by mass (weight), of thin and/or elongated pieces.

- SOURCES:
 • Surfacing Typical and Surfacing Specs: Derived from USDA NRCS drawing "Access Road; HI-ENG-ARI"
 • Profile Typical: Derived from USDA Forest Service Publication "Forest Road Construction and Maintenance"
 • Material Specs: Derived from Vtrans 704.06 Subbase

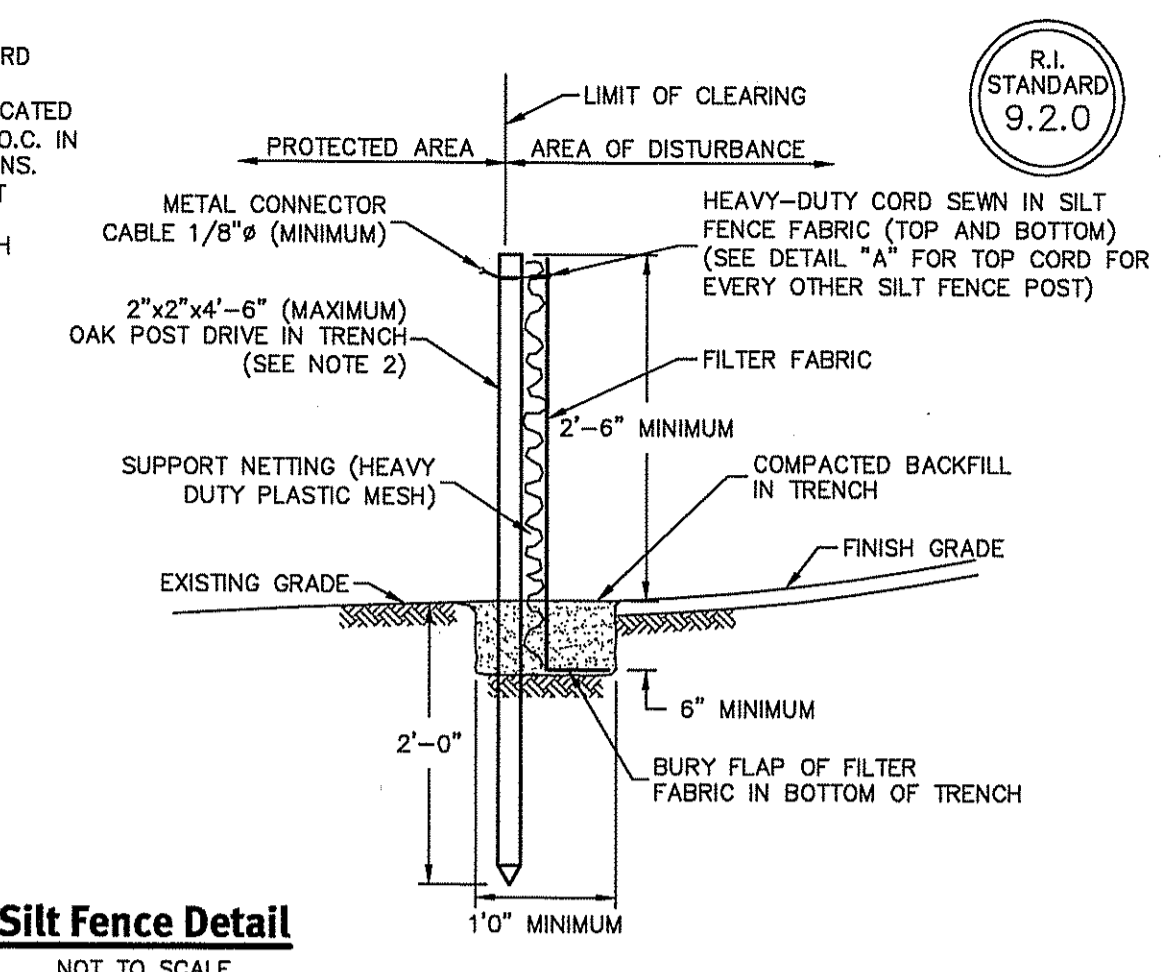
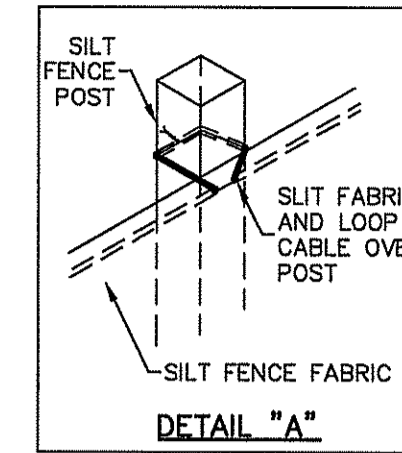
PERMEABLE ACCESS DETAIL
NTS



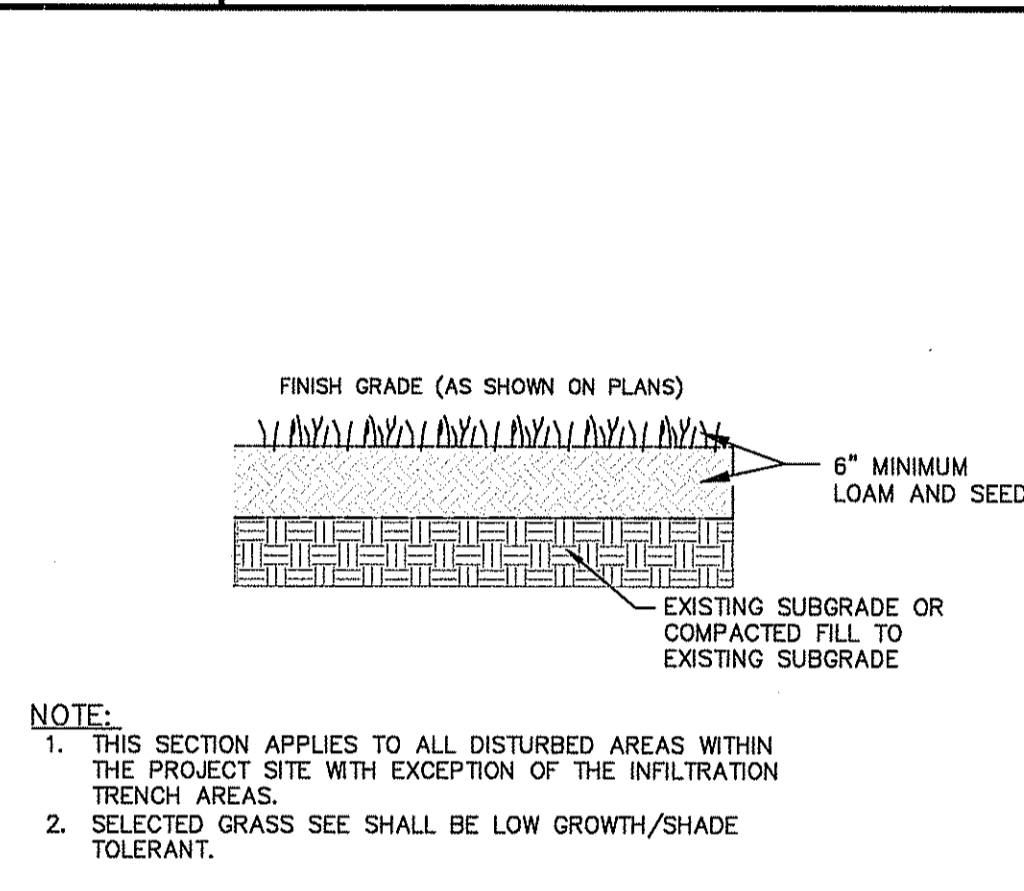
NOTE:
 1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. SPECIFICATIONS SHOWN CAN BE CHANGED BY THE MANUFACTURER ONLY.
 3. FOOTING WIDTH TO BE (4)X POST WIDTH.

DOUBLE SWING GATE 20' OPENING
NOT TO SCALE

- NOTES:**
 1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
 2. 2"x2"x4'-6" (MAXIMUM) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAXIMUM) O.C. IN WETLAND AREAS AND 4'-0" (MAXIMUM) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
 3. 1"x1"x4'-6" (MINIMUM) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
 4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

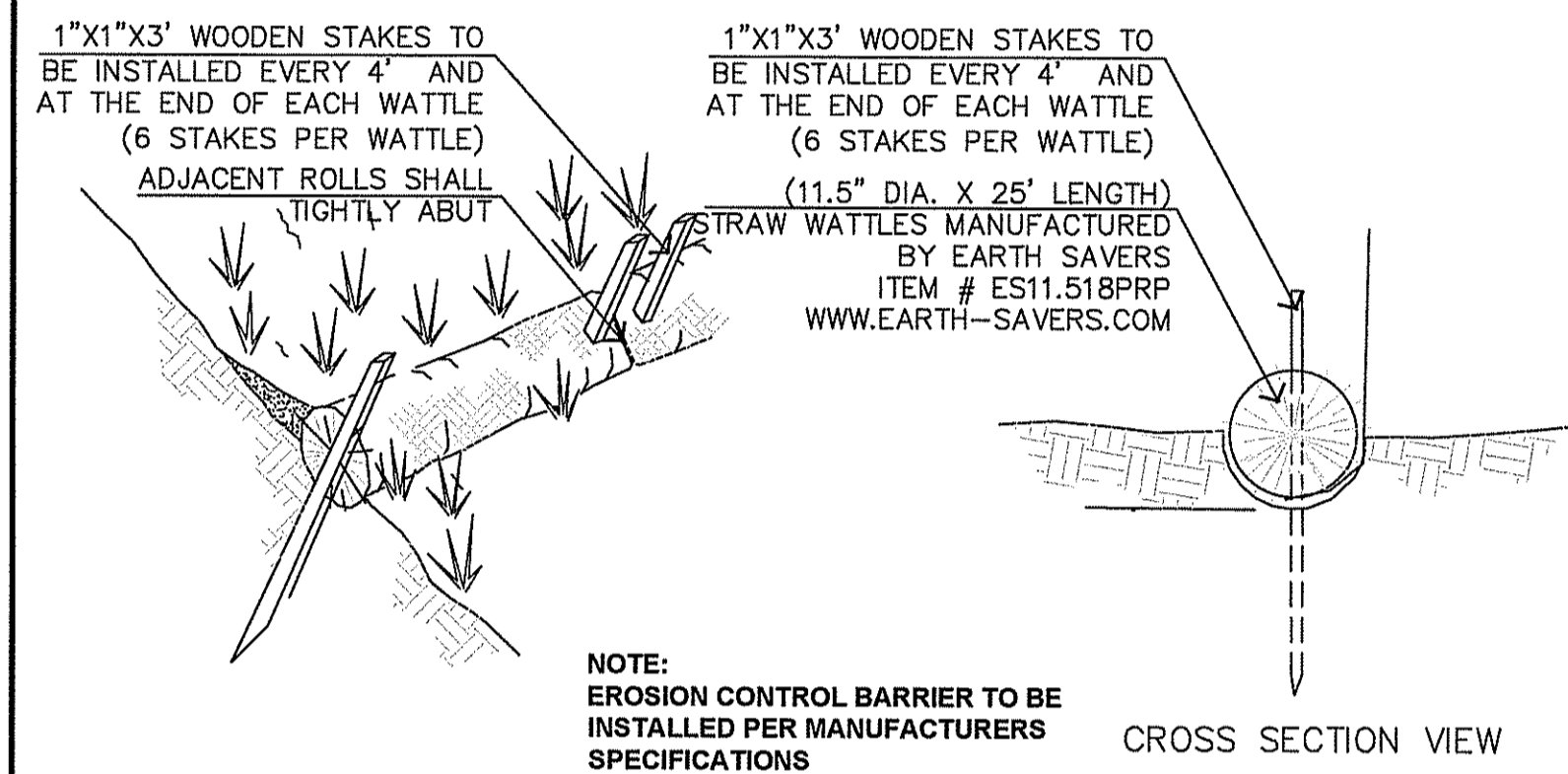


Silt Fence Detail
NOT TO SCALE



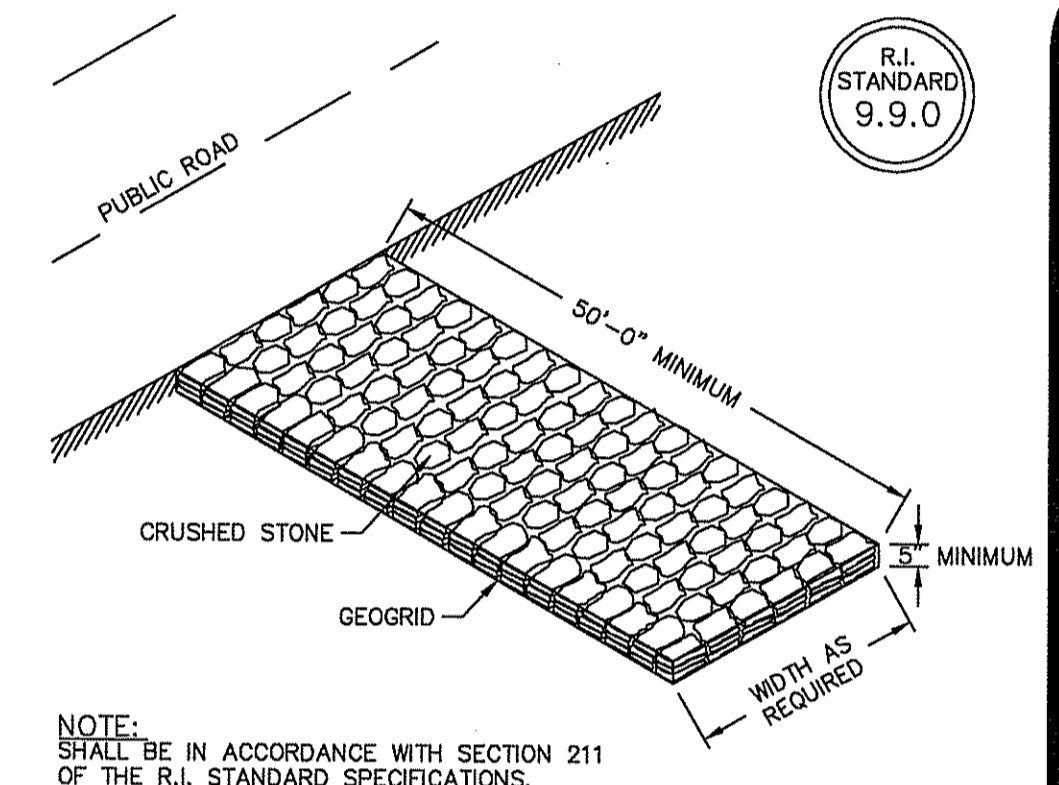
NOTE:
 1. THIS SECTION APPLIES TO ALL DISTURBED AREAS WITHIN THE PROJECT SITE WITH EXCEPTION OF THE INFILTRATION TRENCH AREAS.
 2. SELECTED GRASS SEE SHALL BE LOW GROWTH/SHADE TOLERANT.

GROUND COVER DETAIL
NOT TO SCALE



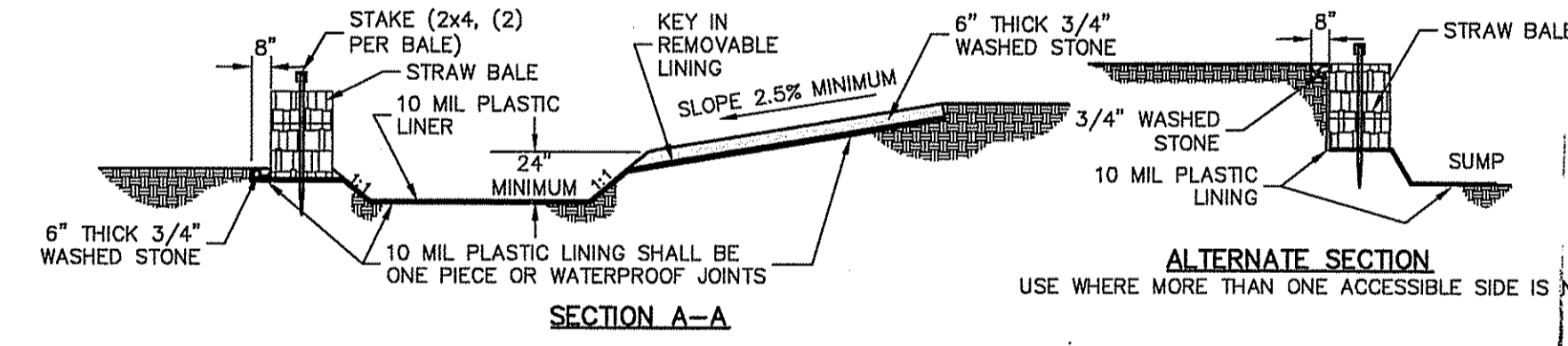
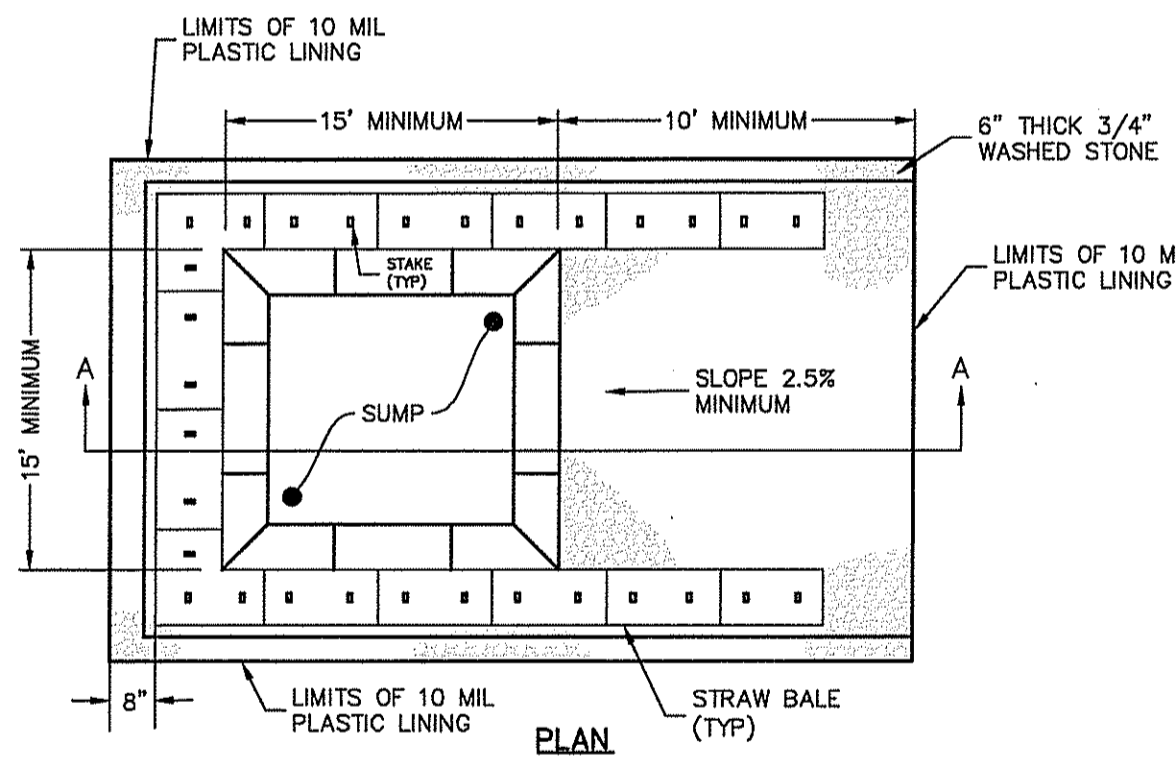
NOTE:
 EROSION CONTROL BARRIER TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS

STRAW WATTLE SEDIMENT BARRIER
NOT TO SCALE



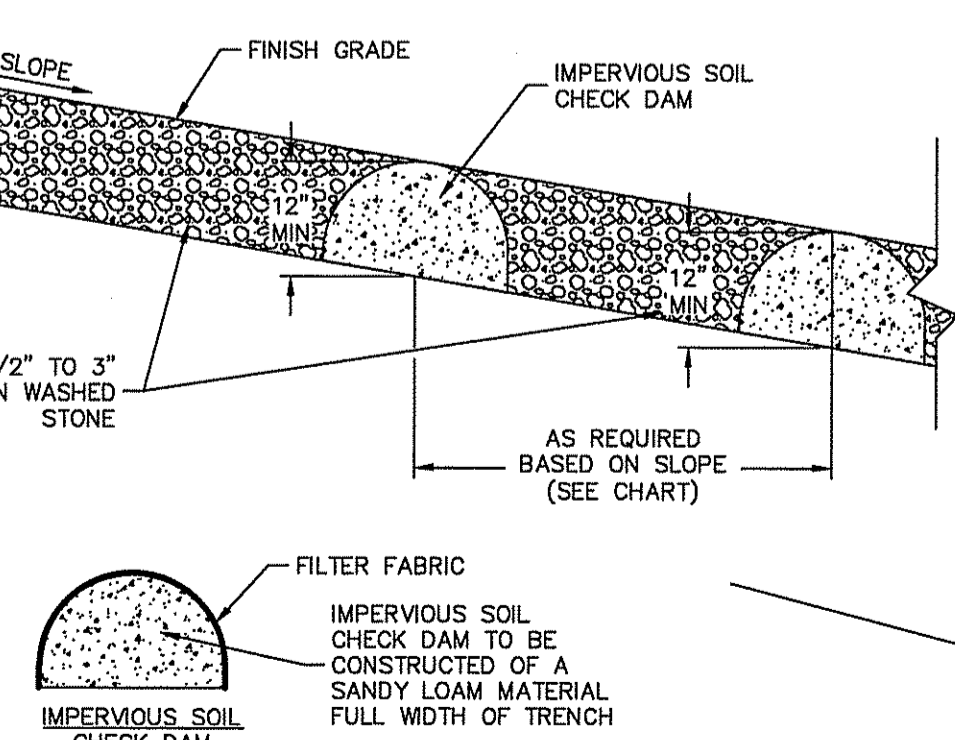
NOTE:
 SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.

Construction Access
NOT TO SCALE



- NOTES:**
 1. PIT IS SPECIFICALLY DESIGNATED, DIKED AND IMPERVIOUS CONTAINMENT TO PREVENT CONTACT BETWEEN CONCRETE WASH AND STORMWATER.
 2. WASH WATER SHALL NOT BE ALLOWED TO FLOW TO SURFACE WATER.
 3. FACILITY MUST HOLD SUFFICIENT VOLUME TO CONTAIN CONCRETE WASTE WITH A MINIMUM FREEBOARD OF 12".
 4. FACILITY SHALL NOT BE FILLED BEYOND 95% CAPACITY UNLESS A NEW FACILITY IS CONSTRUCTED.
 5. SAWCUT PORTLAND CEMENT CONCRETE, RESIDUE FROM SAWCUT AND GRINDING TO BE DISPOSED OF IN THE PIT.
 6. CONCRETE WASHOUTS SHALL BE LOCATED A MINIMUM OF 100' FROM DRAINAGE WAYS, INLETS, AND SURFACE WATERS.
 7. MANUFACTURED CONCRETE WASHOUT DEVICES MAY BE USED IF REMOVED FROM THE SITE WHEN 95% FULL CAPACITY.

Concrete Washout Area
(NOT TO SCALE)

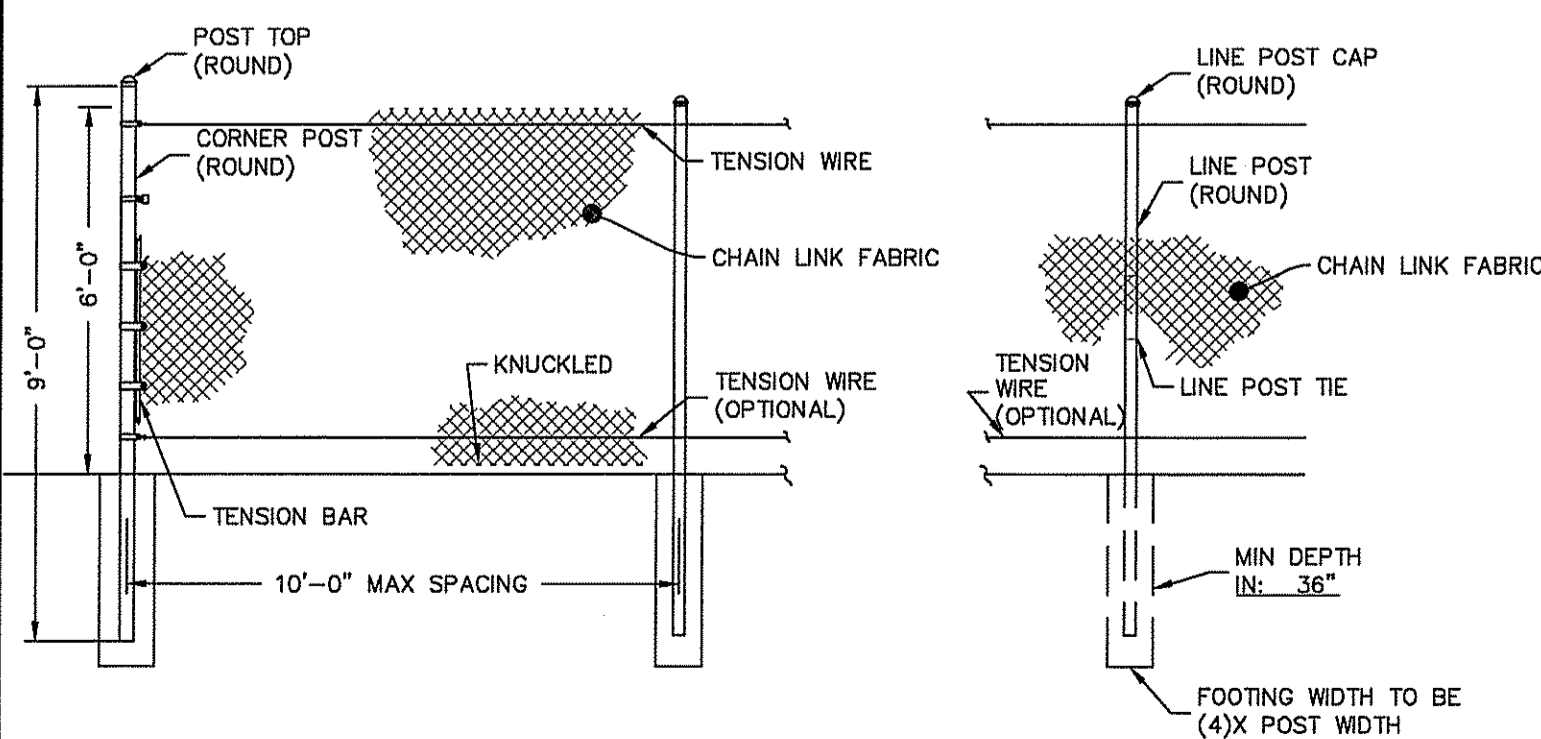


DAM LOCATION CHART

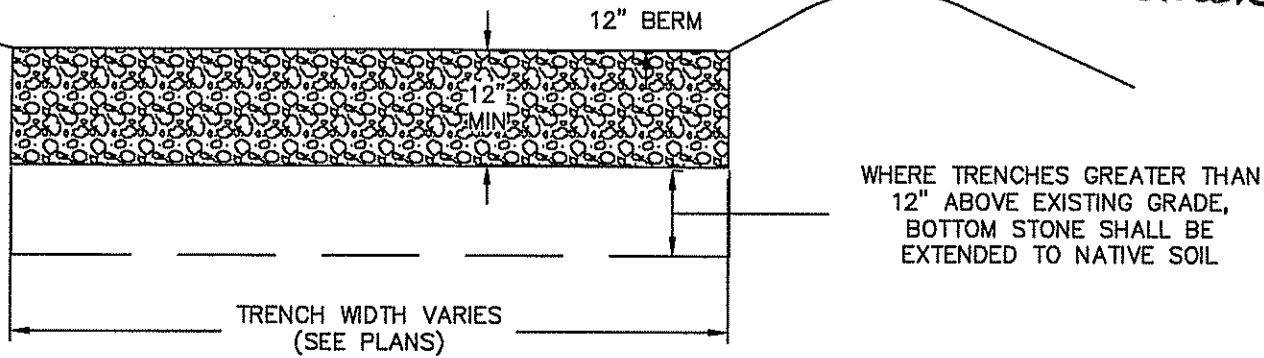
SLOPE	DISTANCE BETWEEN DAMS
1%	100'
2%	50'
3%	33.3'
4%	25'
5%	20'

- NOTES:**
 1. THE 12" BERM IS TO BE CONSTRUCTED AT THE END OF EACH STONE TRENCH TO MAINTAIN THE ABOVE POND STORAGE AREA.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL DATED 12/20/2017 FILE # 17-COD-70
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL APPROVED PLANS MUST BE AT CONSTRUCTION SITE

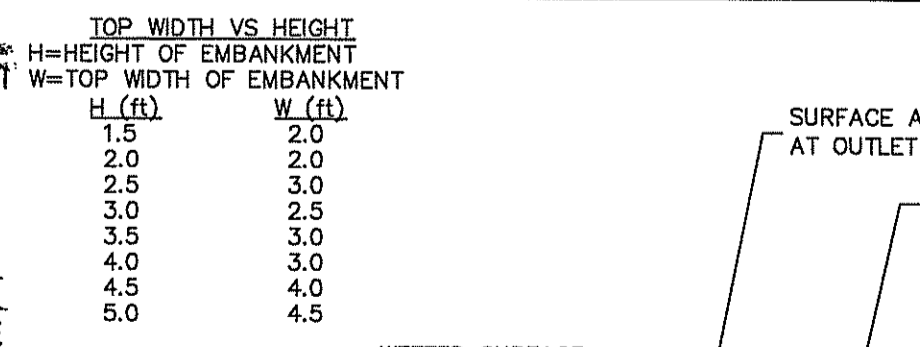


FENCE DETAIL
NOT TO SCALE



Temporary Sediment Trap Detail
NOT TO SCALE

TRAP DIMENSIONS	TRAP A	TRAP B	TRAP C
TRIBUTARY DRAINAGE AREA	2.10 ac	4.20 ac	4.10 ac
WET STORAGE DEPTH (Dw)	2.00 ft	2.00 ft	2.00 ft
DRY STORAGE DEPTH (Dd)	2.00 ft	2.00 ft	2.00 ft
TOTAL DEPTH (D)	4.00 ft	4.00 ft	4.00 ft
BOTTOM OF TRAP AREA (Ab)	1,180 sq.ft	2,109 sq.ft	2,888 sq.ft
WETTED SURFACE AREA (Aw)	2,108 sq.ft	3,741 sq.ft	4,041 sq.ft
SURFACE AREA AT OUTLET (Ao)	3,165 sq.ft	5,661 sq.ft	5,321 sq.ft



- GENERAL NOTES:**
 1. THE TEMPORARY SEDIMENT TRAP SHALL MEET ALL REQUIREMENTS FOR TEMPORARY SEDIMENT TRAPS OUTLINED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST REVISION) SECTION SIX:
 2. THE TEMPORARY SEDIMENT TRAP SHALL HAVE AN INITIAL STORAGE COLUMN OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.
 3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER EXCEPT FOR THE EXCAVATED WET STORAGE AREA WHERE SLOPES SHALL NOT EXCEED 1.5:1.
 4. THE OUTLET SHALL BE LOCATED AT THE MOST DISTANT HYDRAULIC POINT FROM THE INLET.
 5. THE OUTLET CONSISTS OF A PERVIOUS STONE DIKE WITH A CORE OF MODIFIED RIPRAP AND FACED ON THE UPSTREAM SIDE WITH STONE.
 6. TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED GROUND.
 7. MAXIMUM HEIGHT OF A TEMPORARY SEDIMENT TRAP EMBANKMENT IS LIMITED TO 5 FEET.
 8. SIDE SLOPES OF THE EMBANKMENT SHALL BE 2:1 OR FLATTER.
 9. MODIFIED RIPRAP: SHALL MEET THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.03.2.
 10. FILTER STONE: SHALL MEET THE REQUIREMENTS OF RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.03 TABLE 1, COLUMN V FILTER STONE.

- INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS:**
 1. INSPECT THE TEMPORARY SEDIMENT TRAP AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH AN AMOUNT OF 0.25 INCH OR GREATER.
 2. CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
 3. CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE.
 4. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER THE TRAP AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
 5. DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA.
 6. THE TEMPORARY SEDIMENT TRAP MAY BE REMOVED AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.
- INSTALLATION NOTES:**
 1. CLEAR, GRUB AND STRIP ANY VEGETATION AND ROOT MAT FROM ANY PROPOSED EMBANKMENT AND OUTLET AREA.
 2. REMOVE STONES AND ROCKS WHOSE DIAMETER IS GREATER THAN THREE (3) INCHES AND OTHER DEBRIS.
 3. EXCAVATE WET STORAGE AND CONSTRUCT THE EMBANKMENT AND/OR OUTLET AS NEEDED TO ATTAIN THE NECESSARY STORAGE REQUIREMENTS.
 4. USE ONLY FILL MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, LARGE ROCKS (OVER SIX (6) INCHES) OR OTHER UNSUITABLE MATERIALS. COMPACT THE EMBANKMENT IN 9-INCH LAYERS BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
 5. STABILIZE THE EARTHEN EMBANKMENT USING ANY OF THE FOLLOWING MEASURES, SEEDING FOR TEMPORARY VEGETATION COVER; SEEDING FOR PERMANENT VEGETATIVE COVER; OR SLOPE PROTECTION, IMMEDIATELY AFTER INSTALLATION.

DiPrete Engineering
 Two Stafford Court Cranston, RI 02920
 tel. 401-943-1000 fax. 401-664-6066
 www.diprete-eng.com

KEVIN C. MORIN
 No. 7051
 5/23/2017
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL

WIND ENERGY DEVELOPMENT LLC
 www.WindEnergyDevelopmentLLC.com

This regulatory submission set shall not be used for construction purposes unless stamped "Issued for Construction" and signed by a DiPrete Engineering representative.

The contractor is responsible for all of the means, methods, safety precautions and requirements, and OSHA conformance in the implementation of this plan and design.

REV	DATE	DESCRIPTION	BY	DATE
1	5-23-2017	ISSUED FOR CONSTRUCTION	J.A.C.	
2	06-29-2017	REVISION	J.A.C.	
3	09-21-2017	REVISION	J.A.C.	
4	09-21-2017	REVISION	J.A.C.	

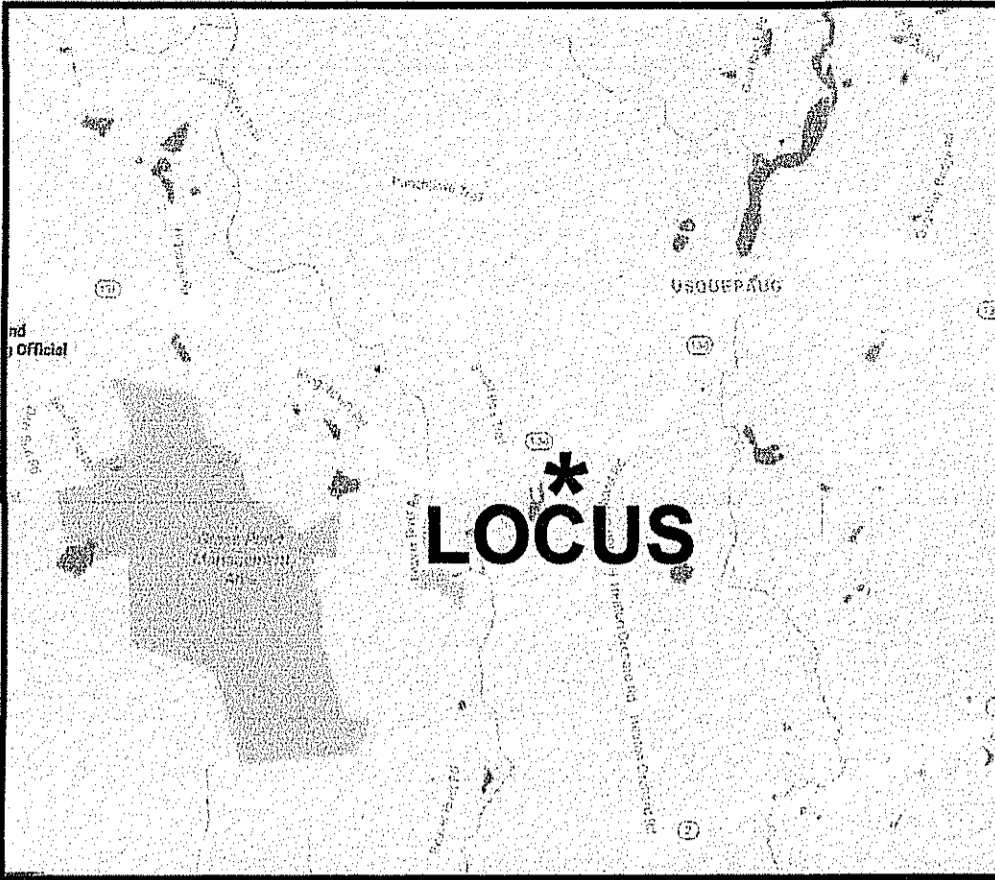
Drawn By: J.A.C. Design By: J.A.C.

Detail Sheet
WED Kingstown Solar I
 Applicant: WED Kingstown Solar I, LLC
 2760 Quaker Lane, North Kingstown, Rhode Island 02882
 tel. (401) 295-4998

Owner: John & Cindy Duncan
 419 Kingstown Road
 West Kingstown, Rhode Island 02892

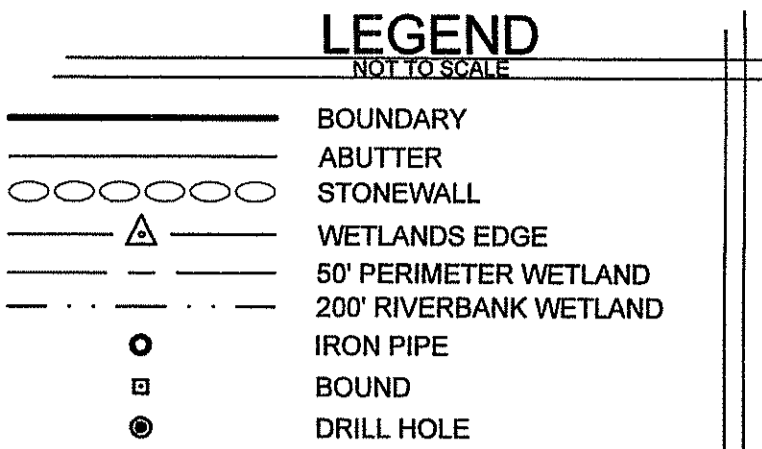
Assessors Plat 6E, Lot 35
 Richmond, Rhode Island

DE Job No: 0501-016 Copyright 2017 by DiPrete Engineering Associates, Inc.



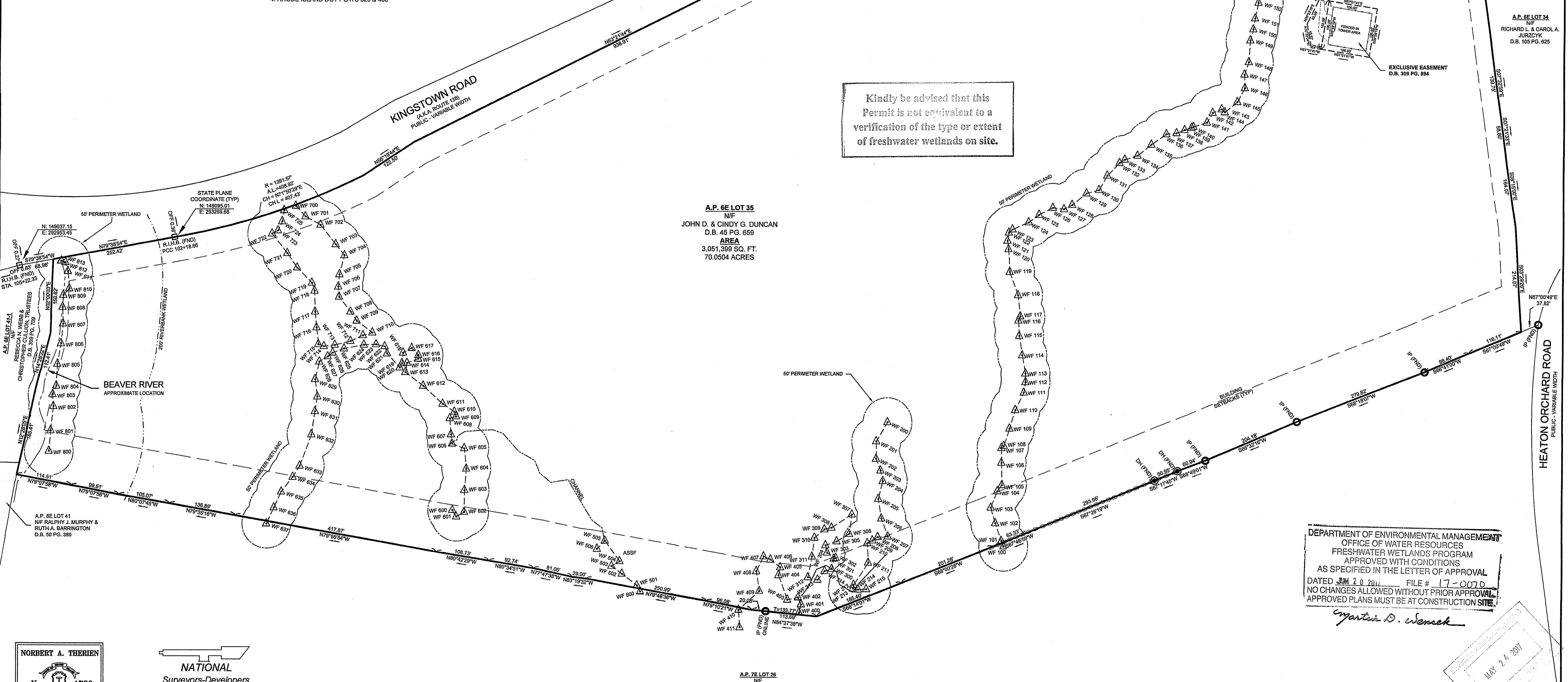
- GENERAL NOTES:**
1. THERE ARE NO KNOWN EASEMENTS OR RIGHTS OF WAY WITHIN OR ADJACENT TO THIS PARCEL EXCEPT THOSE SHOWN.
 2. THERE ARE NO KNOWN HISTORIC CEMETERIES WITHIN OR IMMEDIATELY ADJACENT TO THIS PARCEL.
 3. WETLANDS SHOWN HEREIN WERE DELINEATED BY MASON & ASSOCIATES, INC. 771 PLAINFIELD PIKE, NORTH SCITUATE, RI ON DECEMBER 21, 2016.
 4. WETLANDS FLAGGING LOCATION SUPPLIED BY WIND ENERGY DEVELOPMENT, LLC, 3760 QUAKER LANE NORTH KINGSTOWN, RI 02852
 5. HORIZONTAL DATUM BASED ON NAD-83 RHODE ISLAND STATE PLANE COORDINATE SYSTEM

- REFERENCES:**
1. PLAN ENTITLED "ADMINISTRATIVE SUBDIVISION PREPARED FOR GORDON REALTY, INC. ASSESSOR'S PLAT 7E, LOT 26 & PLAT 6E, LOT 33 HEATON ORCHARD ROAD RICHMOND, RHODE ISLAND" RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF RICHMOND AS MAP 352, SLIDE 325A.
 2. PLAN ENTITLED "PLAN OF LAND PREPARED FOR GORDON REALTY, INC., ASSESSOR'S PLAT 7E, LOT 26, HEATON ORCHARD ROAD, RICHMOND, RHODE ISLAND" RECORDED IN THE TOWN OF RICHMOND LAND EVIDENCE RECORDS AS MAP 110, SLIDE 668.
 3. PLAN ENTITLED "PLAN OF LAND TO BE CONVEYED TO GEN-COV Ltd., LOCATED IN THE TOWN OF RICHMOND, RHODE ISLAND, A.P. 6E LOT 33 AS SEEN ON TAX ASSESSOR'S MAP" RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF RICHMOND AS MAP 123, SLIDE 73A.
 4. RHODE ISLAND DOT PLATS 329 & 408



NO.	DATE	DESCRIPTION	BY

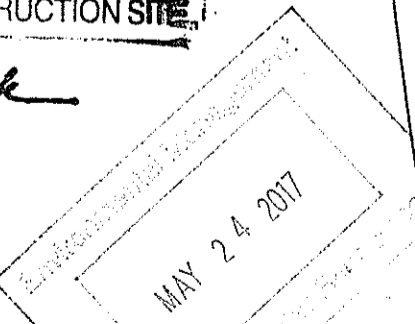
LOCUS MAP
NOT TO SCALE



A.P. 6E LOT 35
N/F
JOHN D. & CINDY G. DUNCAN
D.B. 45 PG. 659
AREA
3,051,399 SQ. FT.
70.0504 ACRES

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED **JUN 20 2017** FILE # **17-0070**
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Matthew D. Wenzel



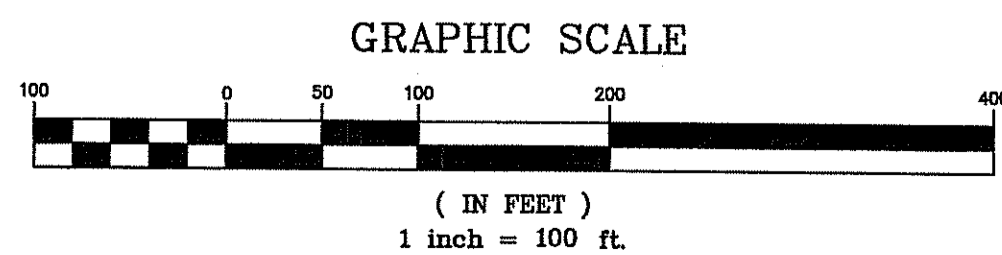
JOHN D. & CINDY G. DUNCAN
MAP 6E LOT 35
KINGSTOWN ROAD
RICHMOND, RHODE ISLAND

BOUNDARY SURVEY

DRAWN BY: D.M.	CHECKED BY: N.A.T.	FIELD BY: J.S./D.M.
MARCH 2017	JOB No. 2017-36	SHEET 1 OF 1

ZONING CRITERIA

ZONING DISTRICT	LI
MINIMUM LOT AREA	2 ACRES
MINIMUM LOT FRONTAGE	200'
MINIMUM FRONT YARD SETBACK	50'
MINIMUM SIDE YARD SETBACK	35'
MINIMUM REAR YARD SETBACK	100'
MAXIMUM BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	40'



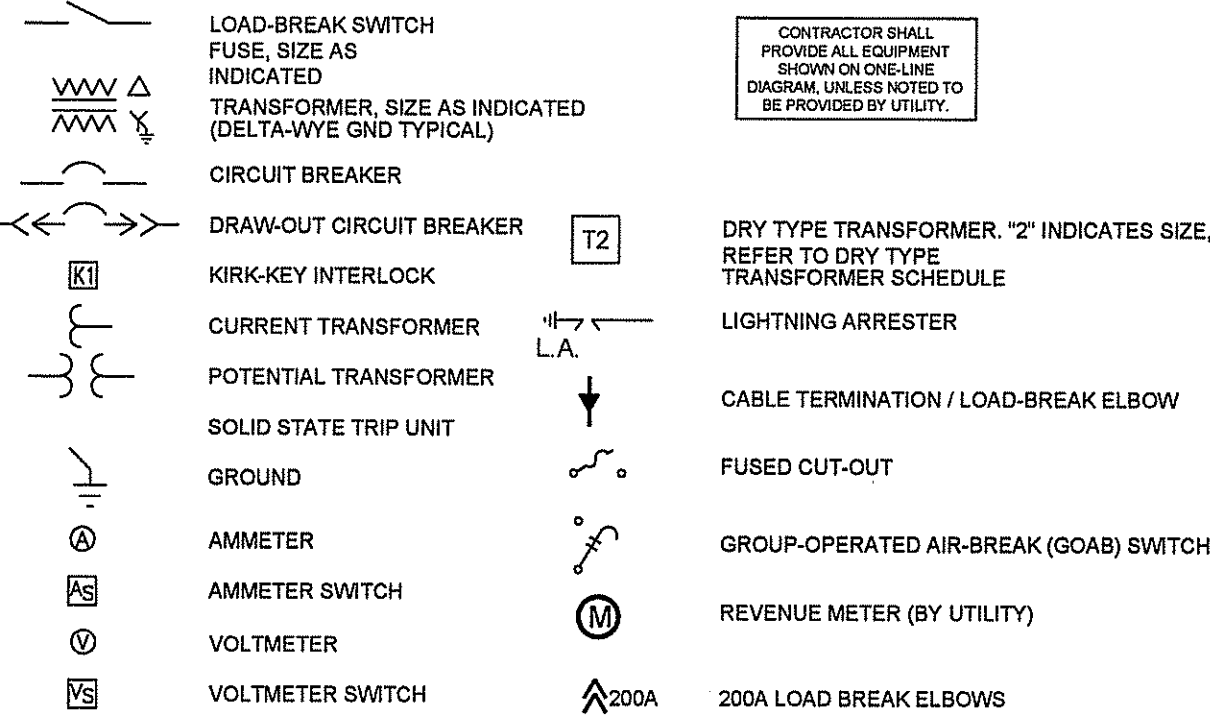
NORBERT A. THERIEN
No. 1739
PROFESSIONAL LAND SURVEYOR
3/15/17

NATIONAL Surveyors-Developers Inc.
42 Hamlet Ave., Woonsocket, R.I.
(401) 769-7779

"I CERTIFY THAT THE INFORMATION SHOWN HEREON HAS BEEN OBTAINED BY AN ACTUAL SURVEY ON THE GROUND, THAT IT IS CORRECT AND THIS SURVEY AND PLAN CONFORM TO A CLASS I STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.

BY: *Norbert A. Therien*
NORBERT A. THERIEN P.L.S.

ONE LINE POWER DIAGRAM

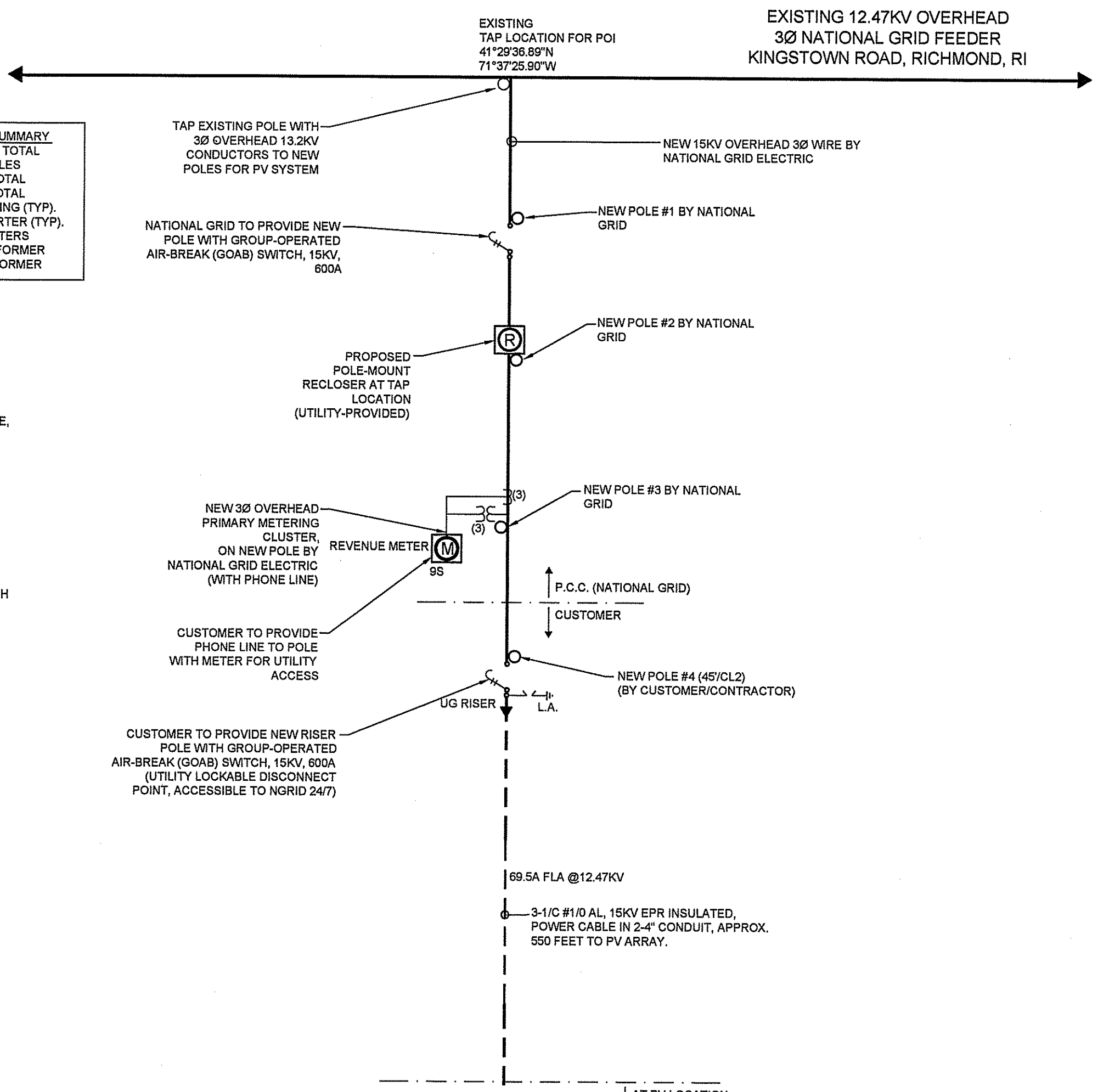


DEVICE NO.	DESCRIPTION
27T	TIME UNDER VOLTAGE RELAY
27I	INSTANTANEOUS UNDER VOLTAGE RELAY
32F	FORWARD OVER POWER RELAY
32R	REVERSE POWER RELAY
46	NEGATIVE PHASE SEQUENCE OVERCURRENT RELAY
47	REVERSE PHASE VOLTAGE RELAY
50/51	INSTANTANEOUS / TIME OVERCURRENT RELAY
51N	GROUND OVERCURRENT RELAY
58I	INSTANTANEOUS OVERVOLTAGE RELAY
59T	TIME OVERVOLTAGE RELAY
60	VOLTAGE BALANCE RELAY
81/O	OVER FREQUENCY RELAY
81/U	UNDER FREQUENCY RELAY

UTILITY INTERCONNECTION NOTES:

- TRANSFORMER TO BE WYE GROUND PRIMARY AND DELTA SECONDARY.
- PROVIDE POTS PHONE LINE TO EACH OF THE NGRID PRIMARY METERING CLUSTER. PROVIDE 3 FEET ADDITIONAL PHONE LINE AND LIQUID-TIGHT CONDUIT WITH END NUT TO BOTTOM OF METER SOCKET ON POLE.
- PROTECTIVE RELAYS TO HAVE DC BATTERY BACKUP WITH AC POWERED BATTERY CHARGER FOR BACKUP.
- PROTECTIVE RELAY ALARM CIRCUIT TO BE WIRED OR PROGRAMMED TO TRIP SWITCH FOR REDUNDANCY PER NATIONAL GRID REQUIREMENTS. FOR SEL RECLOSER THE HALARM WORD BIT IS USED TO TRIP ON LOSS OF DC POWER. BITAIL IS USED FOR BATTERY FAILURE.
- TRANSFORMER FUSES TO BE COOPER BAY-O-NET STYLE, CAT#4000353016 FOR 100A FUSES.
- PV SYSTEM WILL HAVE A 5-MINUTE HEALTHY GRID RECONNECT FEATURE PROGRAMMED INTO THE RECLOSER. THIS WILL BE PROGRAMMED INTO THE RECLOSER TO DEFEAT THE CLOSE BUTTON AND BLOCK CLOSE UNTIL THE 5 MINUTE TIMER HAS COMPLETED.

PV TOTAL SYSTEM SUMMARY
 5,732 PV MODULES TOTAL
 320W PV MODULES
 1,834.2 KW DC TOTAL
 1,500.0 KW AC TOTAL
 16 MODULES PER STRING (TYP.)
 106 STRINGS PER INVERTER (TYP.)
 3 X 500KW INVERTERS
 1 X 1000KVA TRANSFORMER
 1 X 500KVA TRANSFORMER



PROTECTIVE RELAY TO BE PROVIDED WITH DC POWER SOURCE WITH A MINIMUM OF 8 HOURS OF BATTERY BACKUP. RELAY ALARM CONTACT TO BE WIRED IN PARALLEL WITH RELAY TRIP WIRING. ALARM CONTACT TO INCLUDE 2.0SEC TIME DELAY.

PROPOSED 651R RELAY SETTINGS:

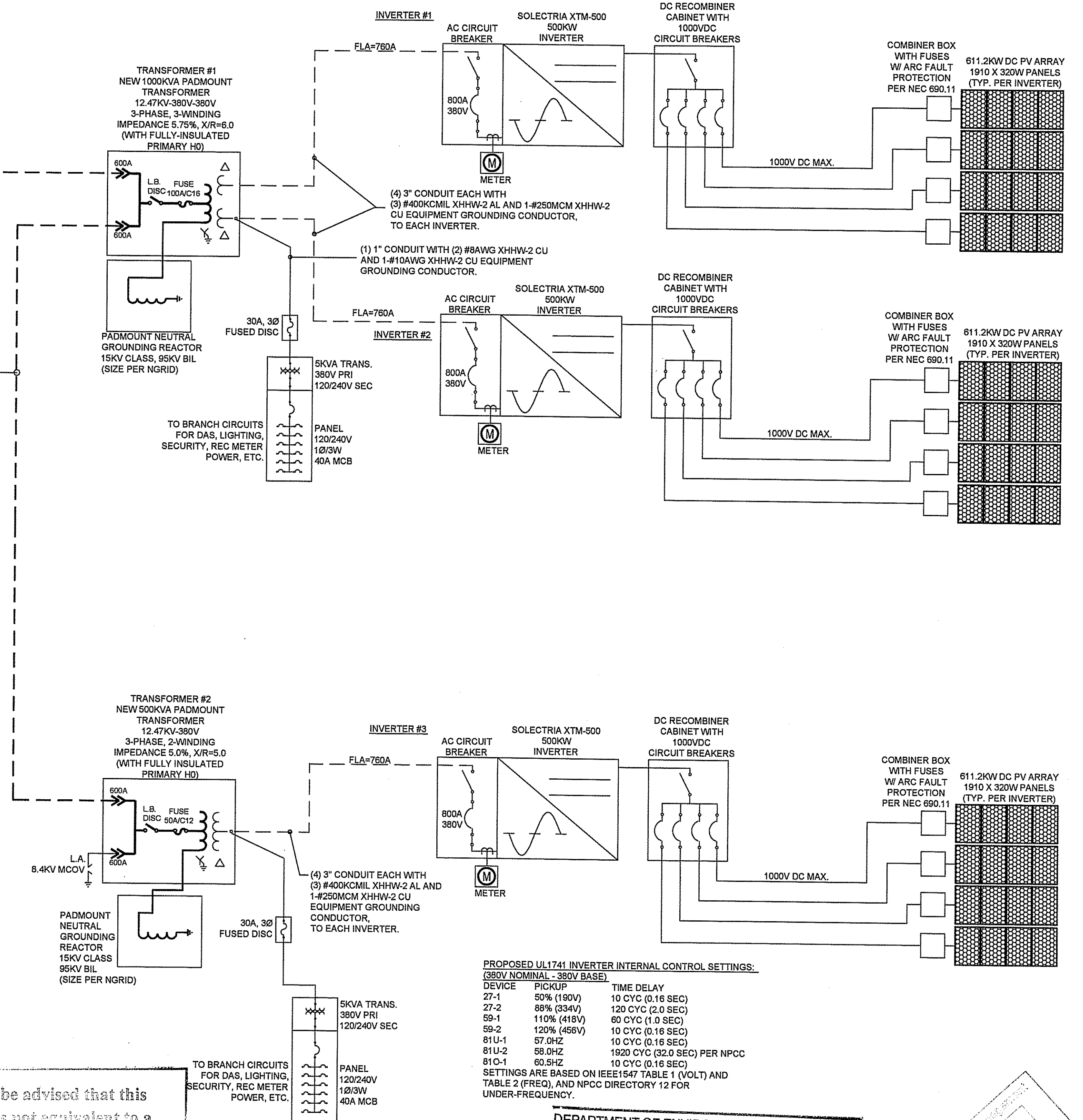
DEVICE	PICKUP	TIME DELAY
27-1	50% (80.0V)	0.5 CYC
27-2	88% (105.6V)	117 CYC
59-1	110% (132.0V)	57 CYC
59-2	120% (144.0V)	6.5 CYC
81U-1	57.0HZ	6.5 CYC
81U-2	58.0HZ	100 SEC
81O-1	60.5HZ	6.5 CYC
59N	100V	80 CYC
51C	2.0TD US (V<88%)	
51G	15A PRI	3.0TD US (V<88%)

• SETTINGS INCLUDED 3 CYCLE ESTIMATE CONTACTOR OPENING TIME
 • VOLTAGE SETTINGS FOR 51C & 51G TO BE VOLTAGE CONTROLLED < 88% (105.6V) NOMINAL VOLTAGE
 • VOLTAGE SETTINGS ARE BASED ON A 120V SECONDARY PT BASE.

MULTI-FUNCTION (MF) RELAYS TO HAVE THE FOLLOWING PROTECTION:
 VOLTAGE-CONTROLLED OVERCURRENT (51C)
 VOLTAGE-CONTROLLED GROUND O.C. (51CG)
 OVERUNDER FREQUENCY (81O/U)
 3V0 GND OVERVOLTAGE (59N)
 (AS REQUIRED BY NATIONAL GRID)

SWITCH TO BE G&W ELECTRIC WITH SEL 651R RELAY, WITH 8 HOUR BATTERY BACKUP. ALARM TO BE WIRED FOR FAIL-SAFE WITH MAX 2.0 SEC DELAY.

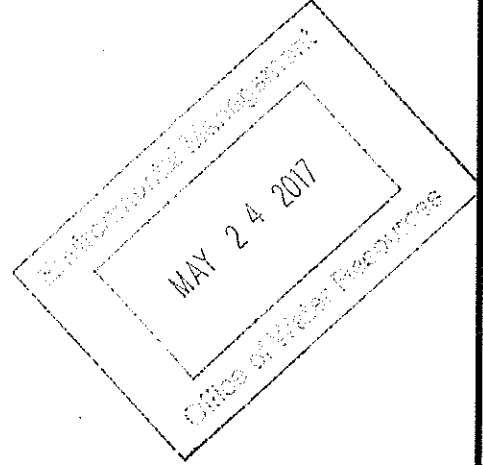
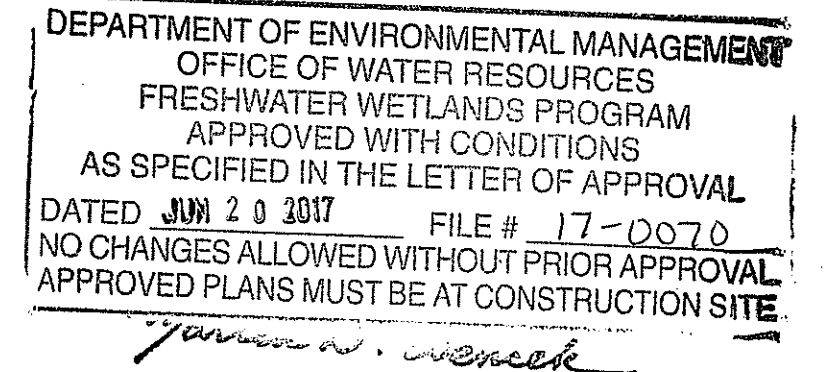
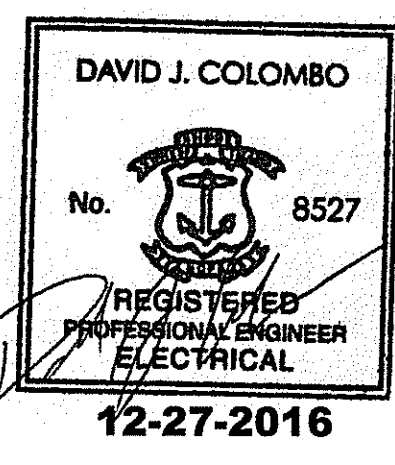
Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.



PROPOSED UL1741 INVERTER INTERNAL CONTROL SETTINGS:
 (380V NOMINAL - 380V BASE)

DEVICE	PICKUP	TIME DELAY
27-1	50% (150V)	10 CYC (0.16 SEC)
27-2	88% (334V)	120 CYC (2.0 SEC)
59-1	110% (418V)	60 CYC (1.0 SEC)
59-2	120% (456V)	10 CYC (0.16 SEC)
81U-1	57.0HZ	10 CYC (0.16 SEC)
81U-2	58.0HZ	1920 CYC (32.0 SEC) PER NPCC
81O-1	60.5HZ	10 CYC (0.16 SEC)

SETTINGS ARE BASED ON IEEE519 TABLE 1 (VOLT) AND TABLE 2 (FREQ), AND NPCC DIRECTORY 12 FOR UNDER-FREQUENCY.



No.	DATE	DESCRIPTION	No.	DATE	DESCRIPTION
0	12/27/2016	ISSUED FOR REVIEW			
		REVISIONS			REVISIONS

PROJ. MANAGER:	SEAL	SCALE:
CHIEF DESIGNER:		HORIZ.: NONE
REVIEWED BY:	DATE	VERT.:
		DATUM:
		HORIZ.:
		VERT.:
		GRAPHIC SCALE

POWER ENGINEERS, LLC
 37 Fox Den Road
 Kingston, MA 02364-2150
 (508) 612-0382
 www.PowerEngineersLLC.com
 Electrical Engineering, Power, Lighting, Technical Studies and Utility Consulting

GREEN DEVELOPMENT, LLC
 421 KINGSTOWN ROAD - PV PROJECT
 1.5MW AC ONE-LINE DIAGRAM - ARRAY #2
 RICHMOND RHODE ISLAND
 PROJ. No.: 144R
 DATE: DECEMBER 2016
E-2
 SIZE: D REV: 0