PERMIT SITE PLANS

Solar Panel Facility

1291 Broadway
Haverhill, Massachusetts 01832

Prepared for

Clean Energy Collective

PURPOSE AND INTENT

1. THIS PLAN SET IS FOR SITE PLAN REVIEW PERMITTING PROCESS ONLY AND IS NOT INTENDED FOR CONSTRUCTION.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATION AND RELATIVE ELEVATION OF BENCH MARKS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.

2. CONTRACTOR SHALL FURNISH CONSTRUCTION LAYOUT OF SITE IMPROVEMENTS. THIS WORK SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR.

3. SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF THE CONTRACTOR.

4. ALL SITE CONSTRUCTION SHALL COMPLY WITH THE HAVERHILL DEPARTMENT OF PUBLIC WORKS STANDARDS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND / OR REMOVAL HEREON. DAMAGED IMPROVEMENTS SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.

6. ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING HORIZONTAL AND VERTICAL MEASUREMENTS FOR ALL SUBSURFACE STRUCTURES. THIS INFORMATION SHALL BE REPORTED TO THE ENGINEER.

REGULATORY NOTES

1. CONTRACTOR SHALL CONTACT "DIG-SAFE" FOR AN UNDERGROUND UTILITY MARKING AT 811 AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

2. CONTRACTOR SHALL MAKE HIMSELF AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.

3. ALL WORK OUTSIDE OF THE BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF THE BUILDING FOUNDATION SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.

4. CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

PLAN NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.

3. RIM ELEVATIONS SHOWN FOR NEW STRUCTURES ARE APPROXIMATE AND ARE PROVIDED TO ASSIST CONTRACTOR WITH MATERIAL TAKEOFFS. FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.

9. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING WITH NEW PAVING.

10. AT LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE. 11. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.

13. ALL DISTURBED AREAS NOT COVERED WITH PAVEMENT, STRUCTURES, INDIVIDUAL PLANTINGS, OR MULCH SHALL BE PLANTED AS SHOWN ON THE SITE PLANS OR AS DIRECTED BY THE ENGINEER.

14. ALL UNDERGROUND STRUCTURES AND UTILITIES SHALL BE CAPABLE OF WITHSTANDING H20 WHEEL LOADS.

15. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, INVERTS AND TYPES OF EXISTING PIPES AT ALL PROPOSED POINTS OF CONNECTION PRIOR TO ORDERING MATERIALS. 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 AT NO ADDITIONAL COST BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT.

16. SILT FENCE AND/OR HAYBALES SHOWN HEREON SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.

17. CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY THE ENGINEER.

18. ALL POINTS OF CONSTRUCTION EGRESSOR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC ROADS. 19. SEE LANDSCAPE PLANS FOR GRADING, LAYOUT AND PLANTING.

19. NEWLY GRADED AND DISTURBED UPLAND AREAS WITHIN THE SOLAR ARRAY SHALL BE PLANTED WITH EARNST CONSERVATION SEEDS INC HBF SEED MIX OR APPROVED EQUAL. NEWLY GRADED AND DISTURBED UPLAND AREAS OUTSIDE OF THE SOLAR ARRAY SHALL BE HYDROSEEDED WITH A CUSTOM EARNST CONSERVATION SEEDS INC SEED MIX OR APPROVED EQUAL. THE CUSTOM MIX SHALL CONTAIN PARTRIDGE PEA, SPOTTED BEEBALM, WILD BERGAMOT, VIRGINIA MOUNTAINMINT, BLUE VERVAIN, MARSH BLAZING STAR, SMOOTH BLUE ASTER, HEATH ASTER, ANISE HYSSOP, AND BLUE FALSE INDIGO. POND AREAS SHALL BE PLANTED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX OR APPROVED EQUAL. ALL SEED MIXES SHALL BE APPLIED PER THE MANUFACTURERS RECOMMENDATION.

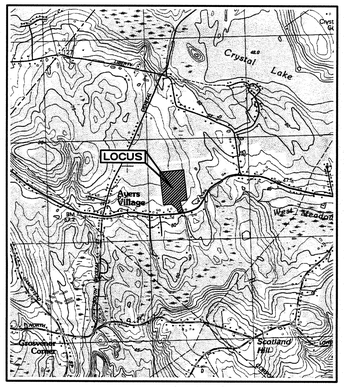
20. THE STORMWATER PONDS SHALL BE CLEARED AND CONSTRUCTED AT THE BEGINNING OF THE CONSTRUCTION SEQUENCE, FOLLOWING THE INSTALLATION OF EROSION CONTROLS AND PRIOR TO THE UPSTREAM GROUND DISTRUBANCE.

DIMENSIONAL REQUIREMENTS

RURAL RESIDENTIAL (RR) DISTRICT

	REQUIRED		PROVIDED	
MINIMUM LOT AREA	80,000	SQ FT	1,068,000±	SQ FT
MINIMUM LOT FRONTAGE	200	FT	163	FT*
MINIMUM LOT DEPTH	125	FT	1,494	FT
FRONT SETBACK	40	FT	755±	FT
SIDE SETBACK	25	FT	128±	FT
REAR SETBACK	40	FT	40	FT
MAXIMUM HEIGHT	35	FT	<35	FT
MAXIMUM STORIES	2.5		N/A	
MAXIMUM BUILDING COVERAGE	15	%	N/A	
MINIMUM OPEN SPACE	70	%	89	%

*APPROVED BY THE HAVERHILL BOARD OF APPEALS ON NOVEMBER 18, 2015.



VICINITY MAP

SCALE: 1"=500'

PROJECT TEAM

APPLICANT:
CLEAN ENERGY COLLECTIVE
146 WEST BOYLSTON STREET
SUITE 201
WORCESTER, MASSACHUSETTS 01606

OWNER:
JANET P. DONOVAN
1305 BROADWAY
HAVERHILL, MASSACHUSETTS 01832

LAND SURVEYORS & CIVIL ENGINEERS:
HANCOCK ASSOCIATES
185 CENTRE STREET
DANVERS, MASSACHUSETTS 01923

SHEET INDEX

C1..... TITLE SHEET
EC1, EC2..... TOPOGRAPHIC PLANS OF LAND
C2A, C2B..... SITE PREPARATION AND LAYOUT AND MATERIALS PLANS
C3A, C3B..... GRADING AND DRAINAGE PLANS
C4..... SITE DETAILS
C5..... SOLAR DETAILS

LEGEND

EXISTING		PROPOSED
234	SURFACE CONTOUR	18
	EDGE OF TRAVELED WAY	
x x x	FENCE	
	EDGE OF WOODED AREA	
#181 OHW	EXISTING UTILITY POLE WITH DESIGNATION OVERHEAD WIRES AND GUY POLE	OHW
E	ELECTRIC MANHOLE & UNDERGROUND ELECTRIC LINES	E
T	TELEPHONE MANHOLE & UNDERGROUND TELEPHONE LINES	
× 232.6	SPOT ELEVATION	16.60 ×
26.8 12"M	PROMINENT DECIDUOUS TREE WITH ELEVATION, SIZE AND SPECIES	
	MANHOLE (UNKNOWN UTILITY)	
BM	BENCHMARK	
DHCB	DRILL HOLE IN CONCRETE BOUND	
I.PIPE	IRON PIPE	
I.ROD	IRON ROD	
VGC	VERTICAL GRANITE CURB	
	SIGN	
	25' NO BUILD NO DISTURBANCE ZONE	
	50' NO BUILD ZONE	
	100' WETLAND BUFFER ZONE	
	100' WETLAND BUFFER ZONE TO VERNAL POOL	
	STRAW WATTLE BARRIER	
	GUARDRAIL	
	SETBACK LINE	
	WALL	
	GRAVEL ACCESS ROAD	
	RIP RAP	
	INFILTRATION TRENCH	
	SOLAR PANEL ARRAY	
	OUTLET CONTROL STRUCTURE	OCS
	WOODS ROAD	OCS

SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

COMMONWEALTH OF MASSACHUSETTS
KARL A. WUNSCH
No. 34808
REGISTERED PROFESSIONAL ENGINEER
10/13/16

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

DATE: 10/5/15 | APPROVED BY: VVT
SCALE: AS NOTED | DRAWN BY: KAC
CHECK BY: JP/VVT

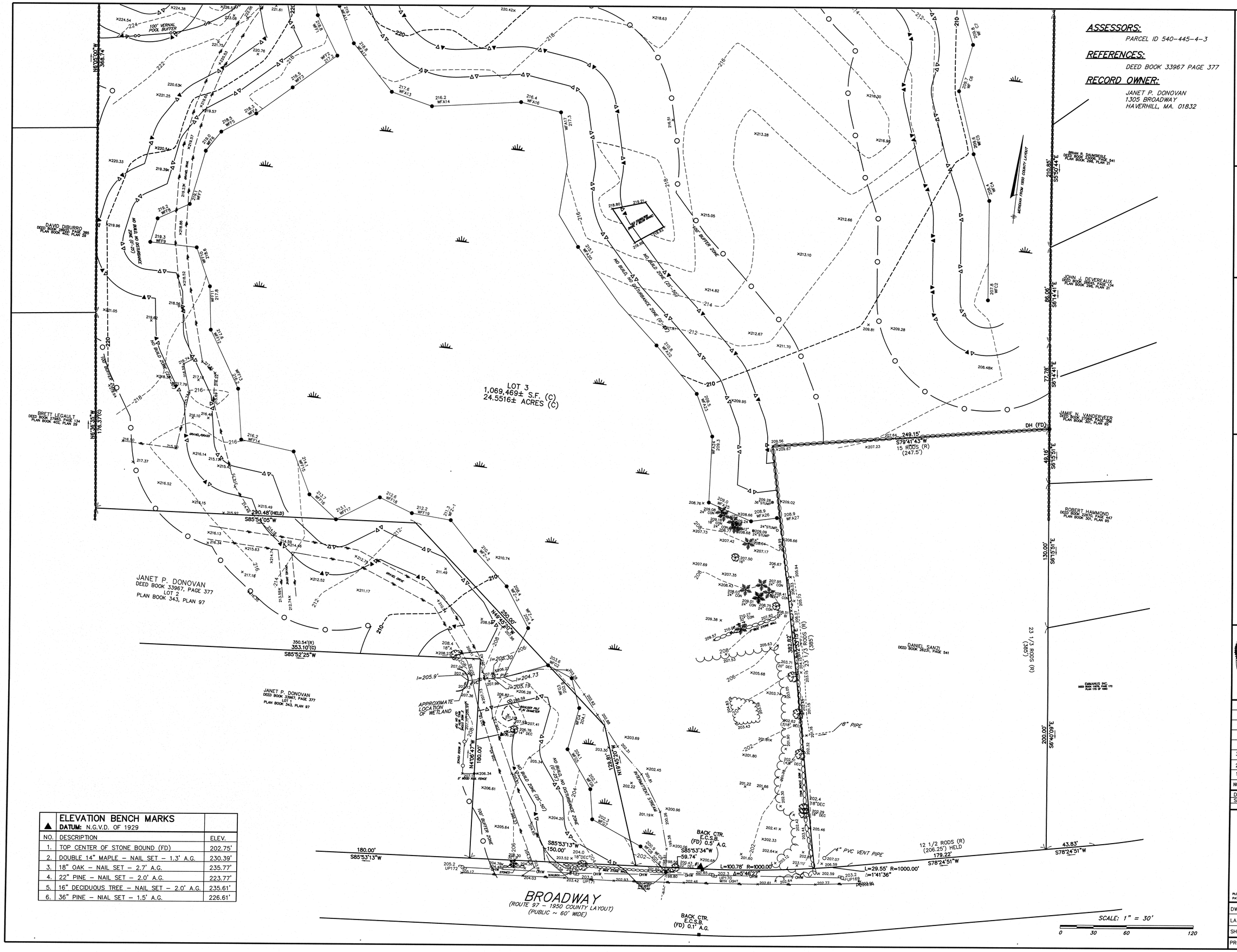
TITLE SHEET

PLOT DATE: Oct 13, 2016 8:16 am
PATH: P:\Civil 3D Projects\19168\PROJ\

DWG: 19168eng access road revised.dwg
LAYOUT: Cover
SHEET: 1 OF 9

C1

PROJECT NO.: 19168



ELEVATION BENCH MARKS DATUM: N.G.V.D. OF 1929		
NO.	DESCRIPTION	ELEV.
1.	TOP CENTER OF STONE BOUND (FD)	202.75'
2.	DOUBLE 14" MAPLE – NAIL SET – 1.3' A.G.	230.39'
3.	18" OAK – NAIL SET – 2.7' A.G.	235.77'
4.	22" PINE – NAIL SET – 2.0' A.G.	223.77'
5.	16" DECIDUOUS TREE – NAIL SET – 2.0' A.G.	235.61'
6.	36" PINE – NIAL SET – 1.5' A.G.	226.61'

SITE ADDRESS:

SOLAR POWER FACILITY

1291 & 1305 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice: (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

COMMONWEALTH OF MASSACHUSETTS
JASON A. ELLIS
NO. 49056
PROFESSIONAL LAND SURVEYOR
10/13/16

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
3	JAE	WT	10/13/16	REVISED ACCESS ROAD
2	JAE	WT	9/22/16	ADDITIONAL TOPO ALONG PROPERTY LINE
1	JAE	WT	3/24/16	CONSERVATION COMMISSION COMMENTS

DATE: 9/15/15 DRAWN BY: JJP/JAE
SCALE: 1"=30' CHECK BY: JAE/WCJ

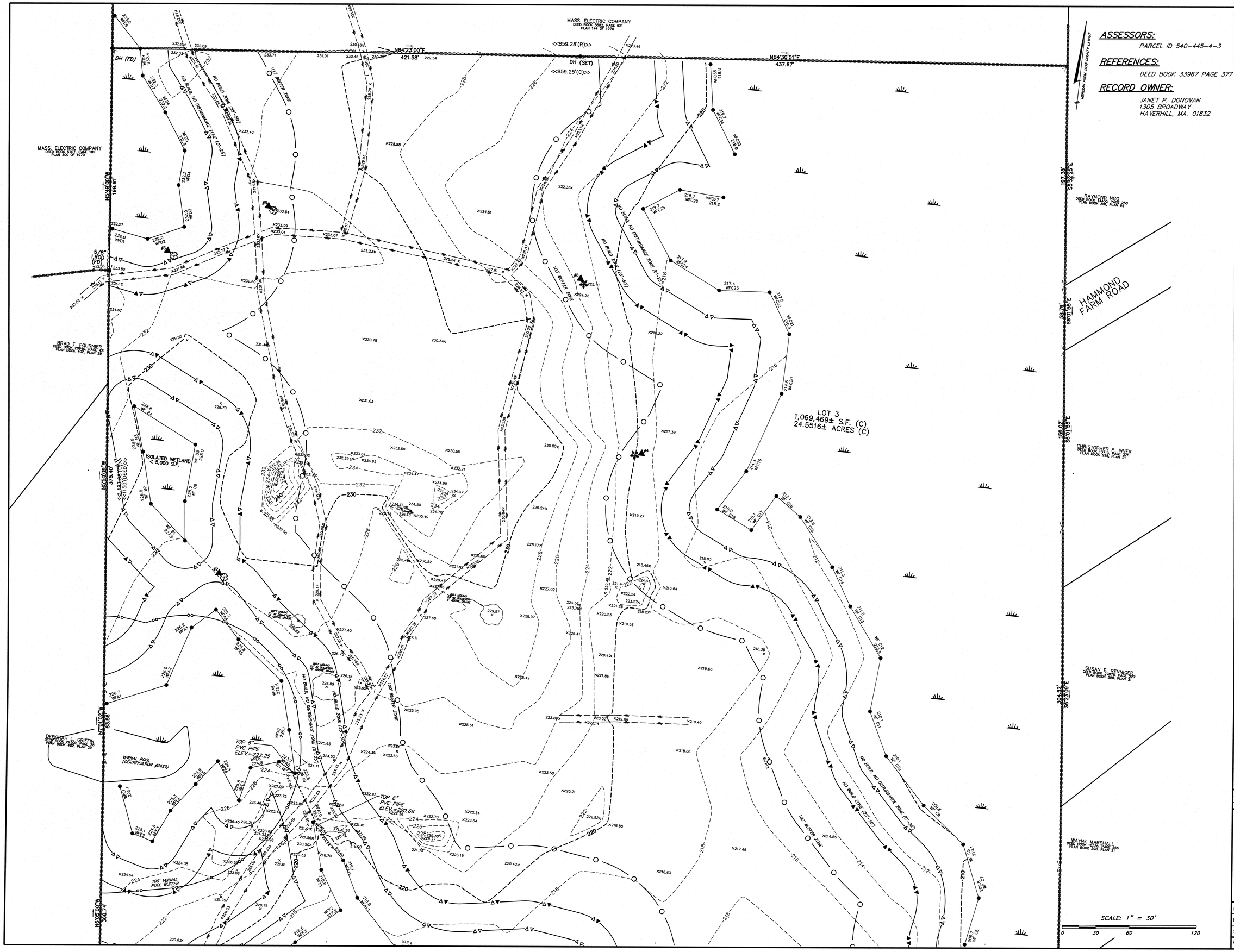
TOPOGRAPHIC PLAN OF LAND IN HAVERHILL, MA

PLOT DATE: Oct 13, 2016 9:22 am
PATH: F:\Civil 3D Projects\19168\DWG\

DWG: 19168SV.dwg
LAYOUT: TOPO
SHEET: 1 OF 2

EC1

PROJECT NO.: 19168



ASSESSORS:
PARCEL ID 540-445-4-3

REFERENCES:
DEED BOOK 33967 PAGE 377

RECORD OWNER:
JANET P. DONOVAN
1305 BROADWAY
HAVERHILL, MA. 01832

SITE ADDRESS:

SOLAR POWER FACILITY

1291 & 1305 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

COMMONWEALTH OF MASSACHUSETTS
JASON A. ELLIS
No. 45052
PROFESSIONAL LAND SURVEYOR

10/13/16

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
3	JAE	WVT	10/13/16	REVISED ACCESS ROAD
2	JAE	WVT	9/22/16	ADDITIONAL TOPO ALONG PROPERTY LINE
1	JAE	WVT	3/24/16	CONSERVATION COMMISSION COMMENTS

DATE: 9/15/15 DRAWN BY: JJP/JAE
SCALE: AS SHOWN CHECK BY: JAE/WCJ

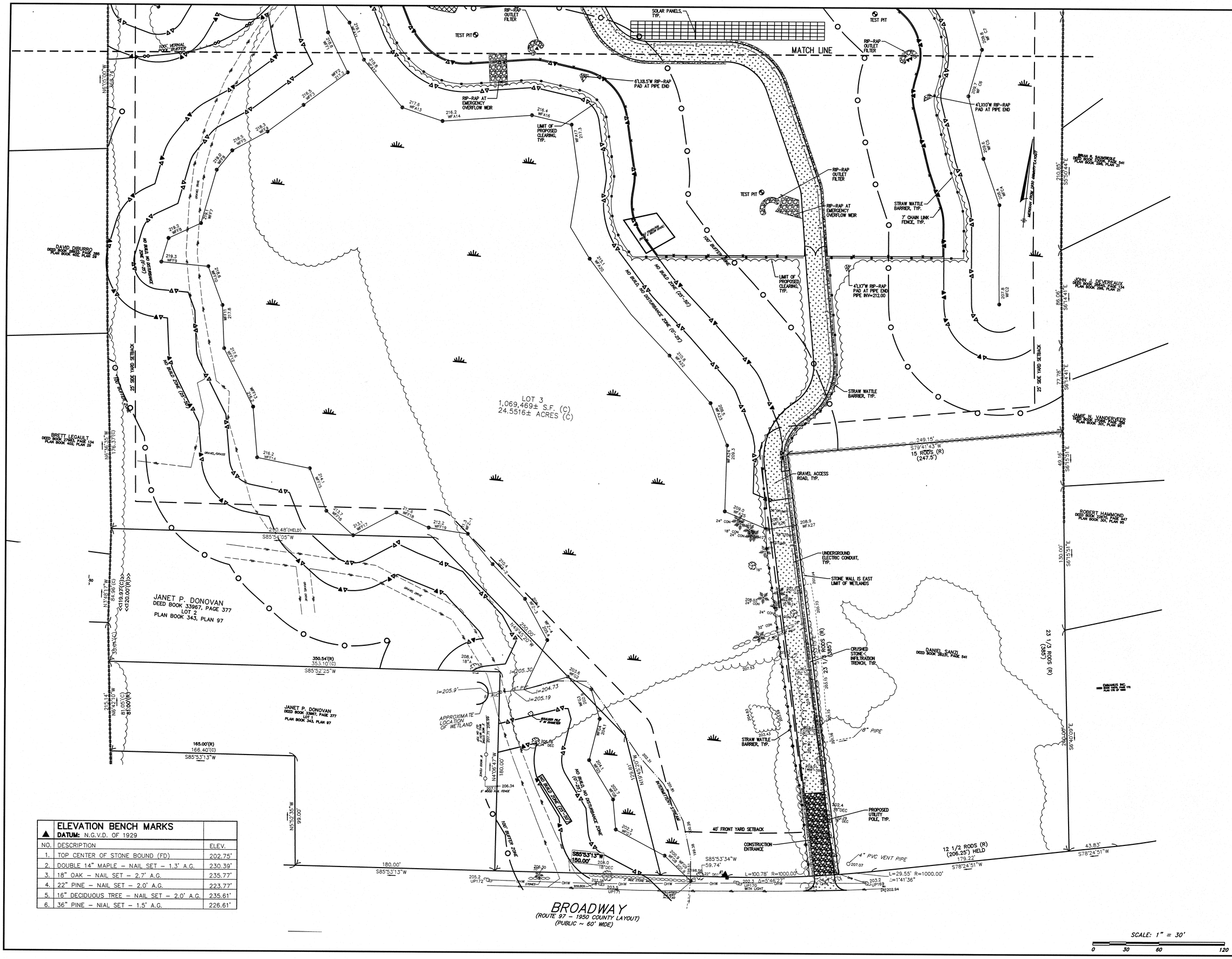
TOPOGRPAHIC PLAN OF LAND IN HAVERHILL, MA

PLOT DATE: Oct 13, 2016 9:24 am
PATH: F:\Civil 3D Projects\19168\DWG\

DWG: 19168SV.dwg
LAYOUT: TOPO
SHEET: 2 OF 2

EC2

PROJECT NO.: 19168



▲ ELEVATION BENCH MARKS DATUM: N.G.V.D. OF 1929		
NO.	DESCRIPTION	ELEV.
1.	TOP CENTER OF STONE BOUND (FD)	202.75'
2.	DOUBLE 14" MAPLE – NAIL SET – 1.3' A.G.	230.39'
3.	18" OAK – NAIL SET – 2.7' A.G.	235.77'
4.	22" PINE – NAIL SET – 2.0' A.G.	223.77'
5.	16" DECIDUOUS TREE – NAIL SET – 2.0' A.G.	235.61'
6.	36" PINE – NIAL SET – 1.5' A.G.	226.61'

SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

COMMONWEALTH OF MASSACHUSETTS
VACLAV V. VALACHO
CIVIL
No. 49304
REGISTERED PROFESSIONAL ENGINEER
10/13/16

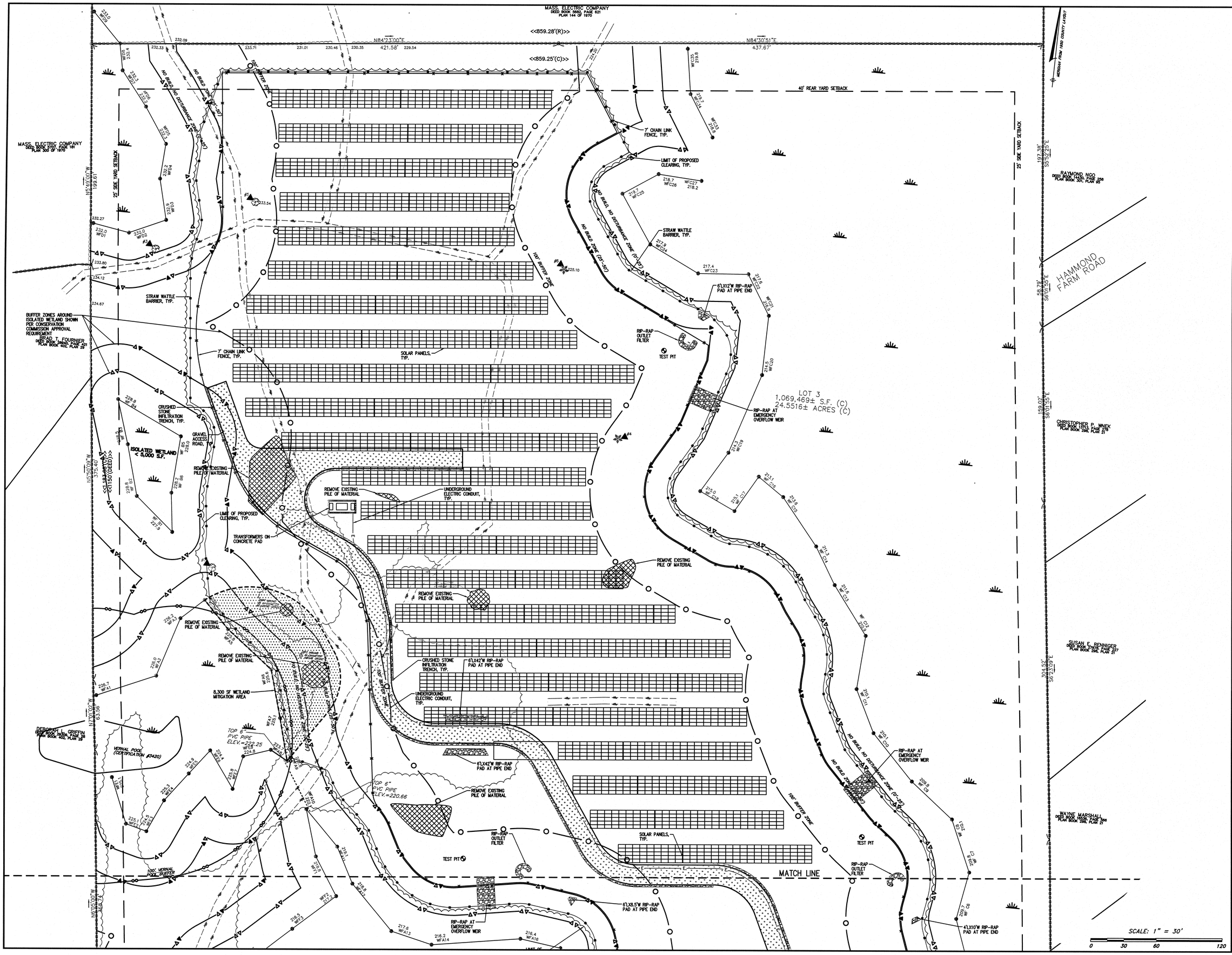
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

DATE: 10/5/15	APPROVED BY: VVT
SCALE: AS NOTED	DRAWN BY: KAC
	CHECK BY: JP/VVT

SITE PREPARATION AND LAYOUT AND MATERIALS SHEET 1

PLOT DATE: Oct 13, 2016 8:49 am
PATH: P:\Civil 3D Projects\19168\grdwk\

DWG: 19168eng access road revised.dwg
LAYOUT: LM1
SHEET: 4 OF 9
C2A
PROJECT NO.: 19168



SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLEGTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

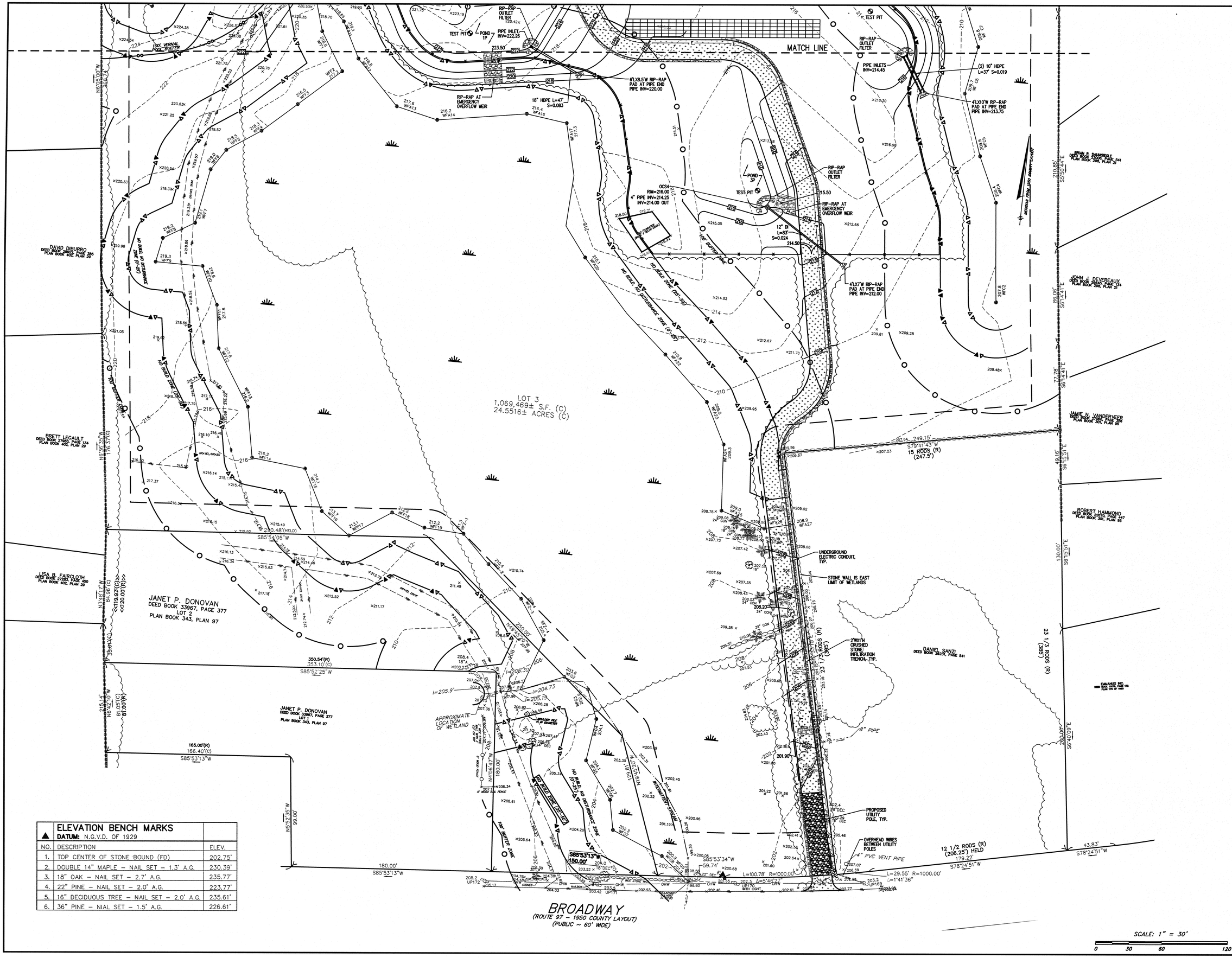
NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

		APPROVED BY:	VVT
DATE:	10/5/15	DRAWN BY:	KAC
SCALE:	AS NOTED	CHECK BY:	JP/VVT

SITE PREPARATION AND LAYOUT AND MATERIALS SHEET 2

PLOT DATE: Oct 13, 2016 9:49 am
PATH: P:\Civil 3D Projects\19168\DWG\

DWG: 19168eng access road revised.dwg	C2B
LAYOUT: LM2	
SHEET: 5 OF 9	
PROJECT NO.:	19168



ELEVATION BENCH MARKS		
▲	DATUM: N.G.V.D. OF 1929	
NO.	DESCRIPTION	ELEV.
1.	TOP CENTER OF STONE BOUND (FD)	202.75'
2.	DOUBLE 14" MAPLE – NAIL SET – 1.3' A.G.	230.39'
3.	18" OAK – NAIL SET – 2.7' A.G.	235.77'
4.	22" PINE – NAIL SET – 2.0' A.G.	223.77'
5.	16" DECIDUOUS TREE – NAIL SET – 2.0' A.G.	235.61'
6.	36" PINE – NIAL SET – 1.5' A.G.	226.61'

SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

	APPROVED BY: VVT
DATE: 10/5/15	DRAWN BY: KAC
SCALE: AS NOTED	CHECK BY: JP/VVT

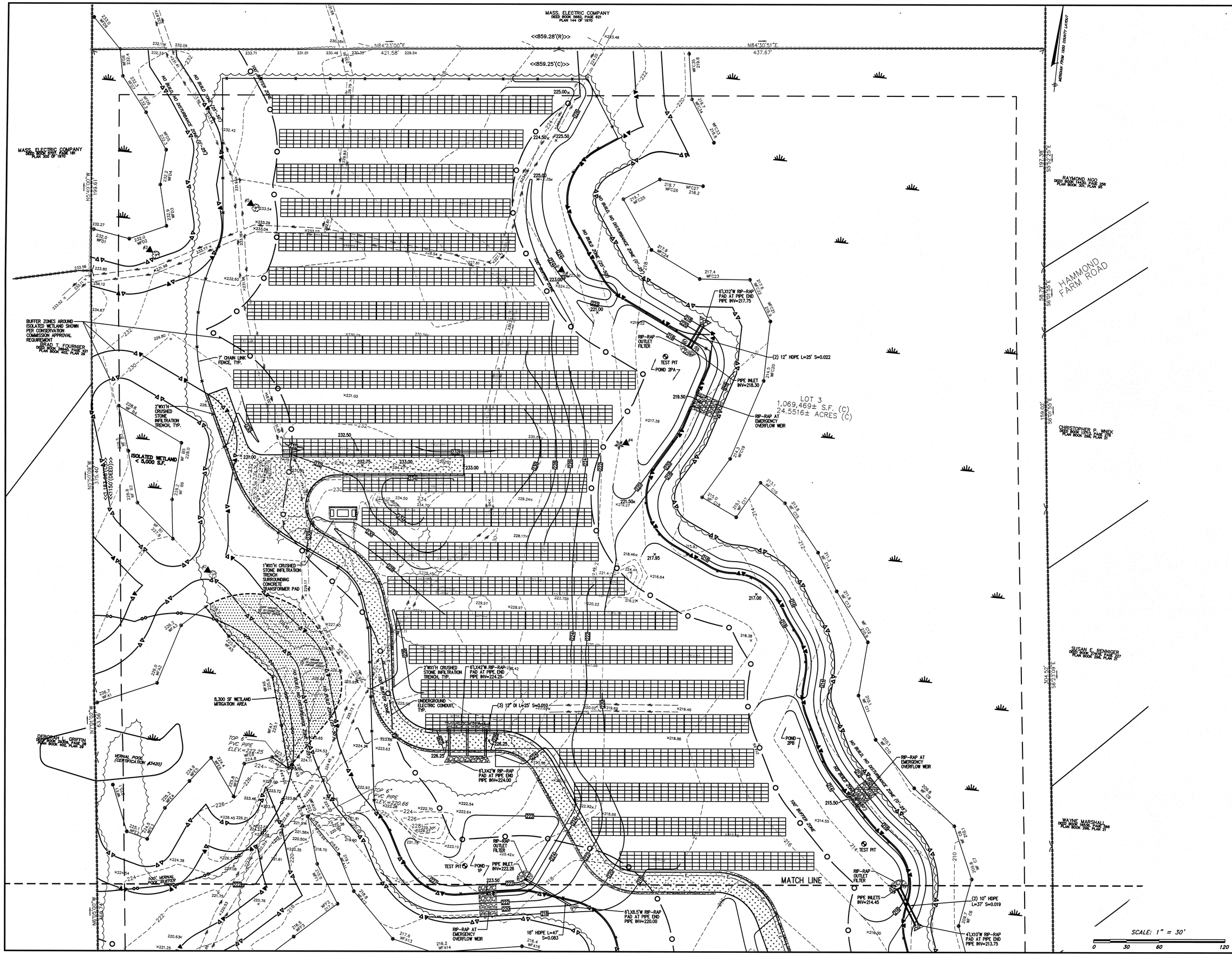
GRADING AND DRAINAGE PLAN SHEET 1

PLOT DATE: Oct 13, 2016 8:52 am
PATH: F:\Civil 3D Projects\19168\DWG\

DWG: 19168eng access road revised.dwg
LAYOUT: GD1
SHEET: 6 OF 9

C3A

PROJECT NO.: 19168



SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

DATE: 10/5/15 | APPROVED BY: VVT | DRAWN BY: KAC | CHECK BY: JP/VVT
SCALE: AS NOTED

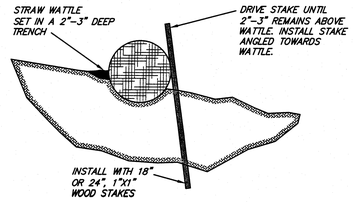
GRADING AND DRAINAGE PLAN SHEET 2

PLOT DATE: Oct 13, 2016 8:55 am
PATH: F:\Civil 3D Projects\19168\DWG\

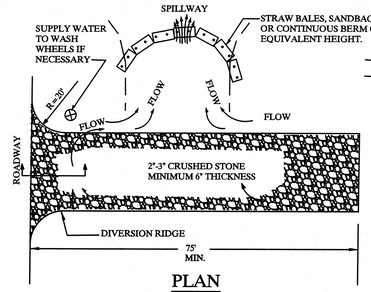
DWG: 19168eng access road revised.dwg
LAYOUT: GD2
SHEET: 7 OF 9

C3B

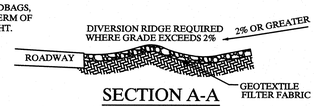
PROJECT NO.: 19168



STRAW WATTLE INSTALLATION
NOT TO SCALE



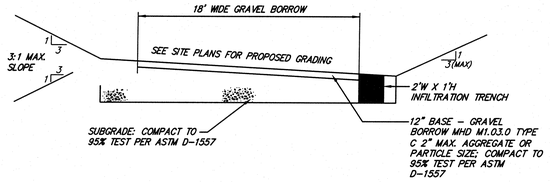
PLAN



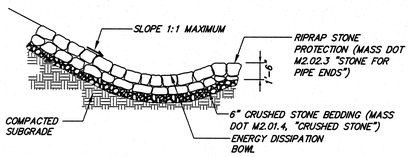
SECTION A-A

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. IN THE DIRECTION OF TRAVEL, THE CONSTRUCTION ENTRANCE/EXIT SHALL SLOPE DOWN TOWARDS THE SITE AND AWAY FROM THE ROADWAY.
5. CONSTRUCTION ENTRANCE TO BE LOCATED AT SOUTHERN END OF PROPOSED GRAVEL ACCESS ROAD.

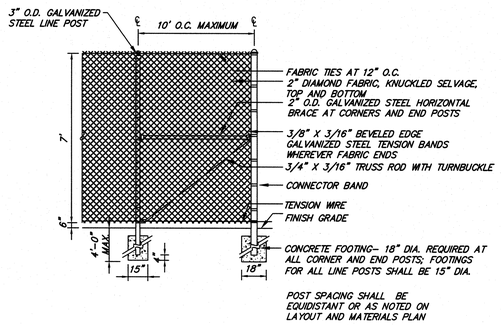
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
NOT TO SCALE



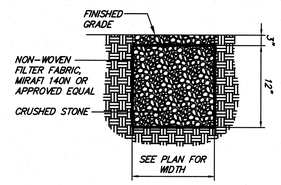
GRAVEL ACCESS ROAD
CROSS SECTION
NOT TO SCALE



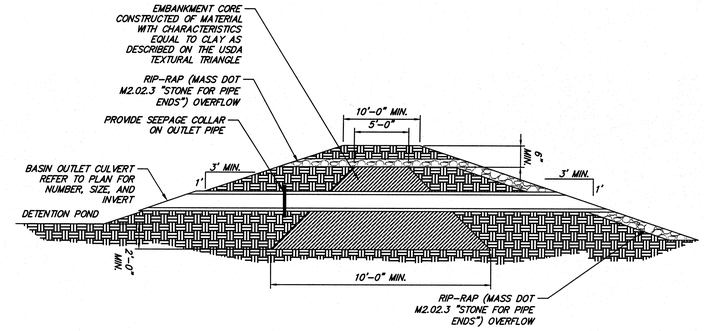
RIP-RAP OVERFLOW
NOT TO SCALE



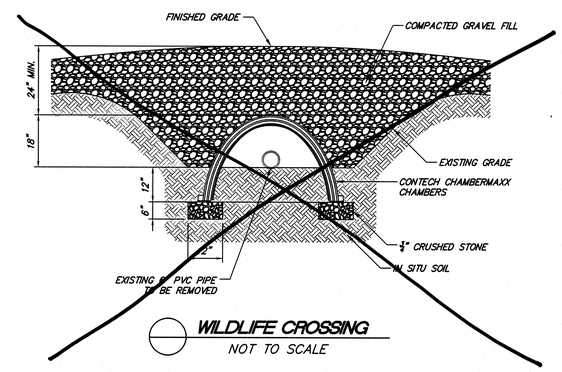
CHAIN LINK FENCE
NOT TO SCALE



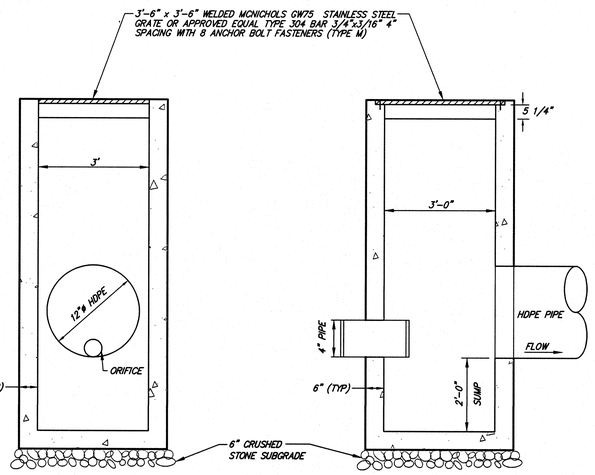
INFILTRATION TRENCH
NOT TO SCALE



BERM AT DETENTION POND
NOT TO SCALE

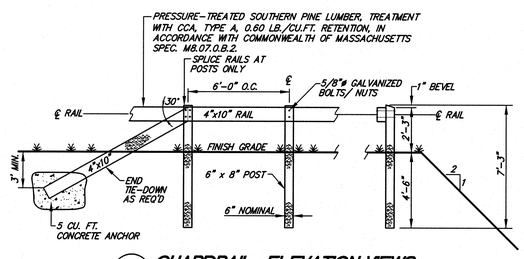


WILDLIFE CROSSING
NOT TO SCALE

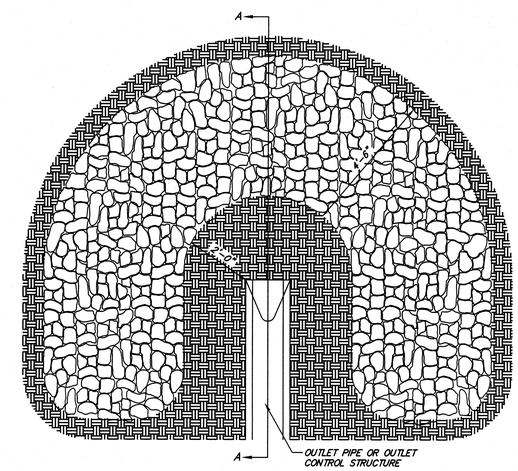


ELEVATION
NOT TO SCALE

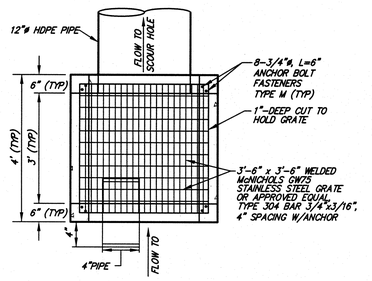
SECTION
NOT TO SCALE



GUARDRAIL- ELEVATION VIEWS
NOT TO SCALE



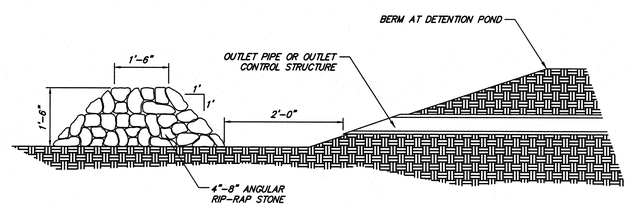
PLAN



NOTE: SEE GRADING AND DRAINAGE PLAN FOR ELEVATIONS, LOCATIONS, AND ORIFICE SIZES.

PLAN

OUTLET CONTROL STRUCTURES
NOT TO SCALE



SECTION A-A

RIP-RAP OUTLET FILTER
NOT TO SCALE

SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

COMMONWEALTH OF MASSACHUSETTS
MICHAEL A. CULBERT
CULBERT
CIVIL
No. 34526
REGISTERED PROFESSIONAL ENGINEER

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

DATE: 10/5/15	APPROVED BY: VVT
SCALE: AS NOTED	DRAWN BY: KAC
	CHECK BY: JP/VVT

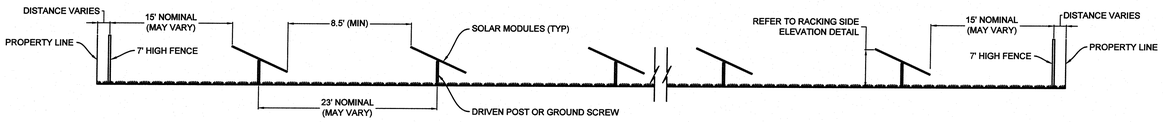
SITE DETAILS

PLOT DATE: Oct 13, 2016 9:55 am
PATH: P:\Civil 3D Projects\19168\plan\

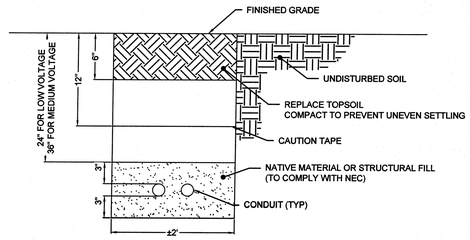
DWG: 19168eng access road revised.dwg
LAYOUT: Details
SHEET: 8 OF 9

C4

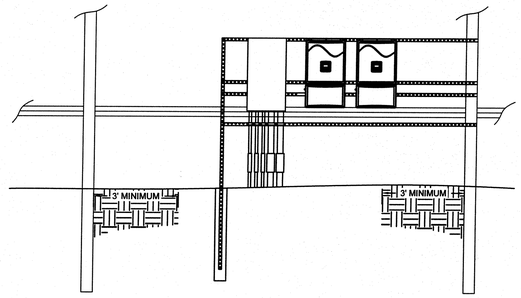
PROJECT NO.: 19168



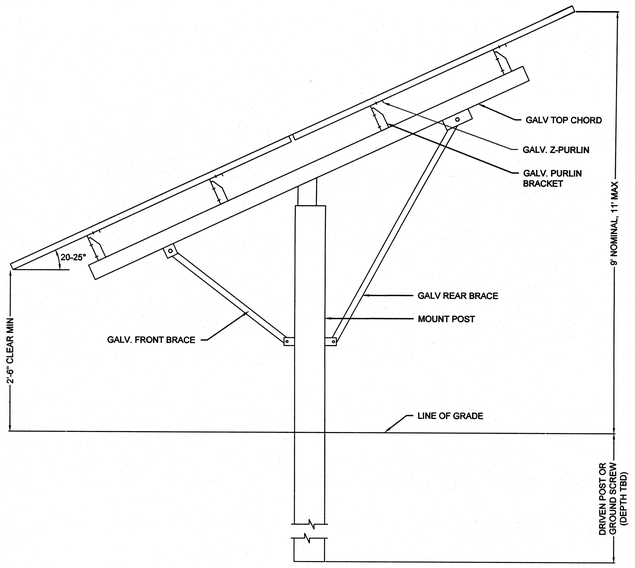
FIXED TILT SECTION (TYP.)
NOT TO SCALE



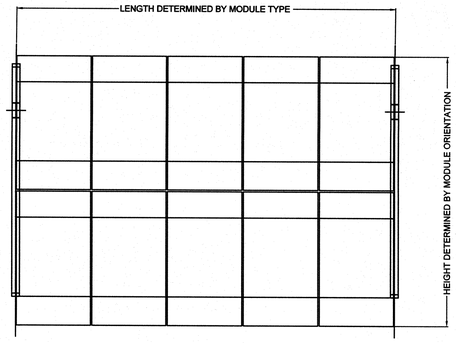
ELECTRICAL TRENCH (TYP.)
NOT TO SCALE



INVERTER MOUNTING (TYP.)
NOT TO SCALE

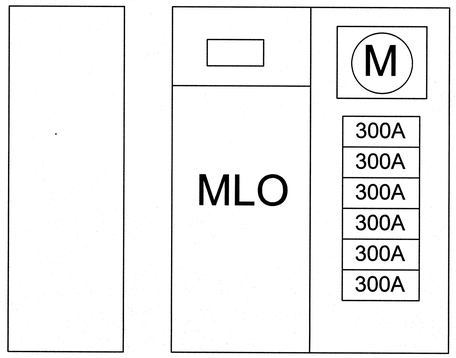


RACKING SIDE ELEVATION (TYP.)
NOT TO SCALE

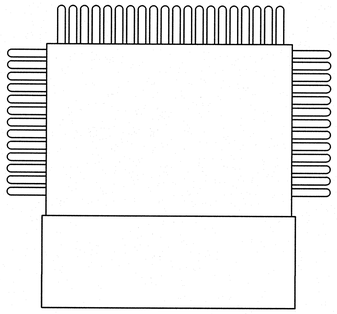


PV MODULE (TYP.)
NOT TO SCALE

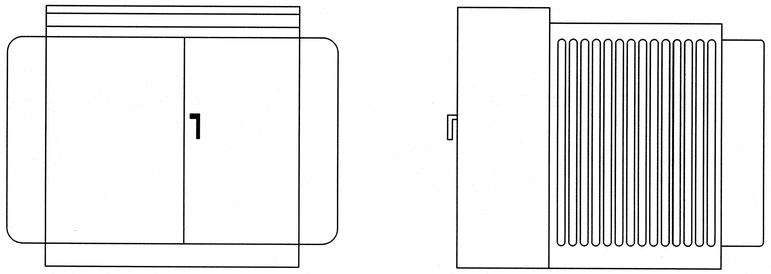
AC Switchgear Dimensions



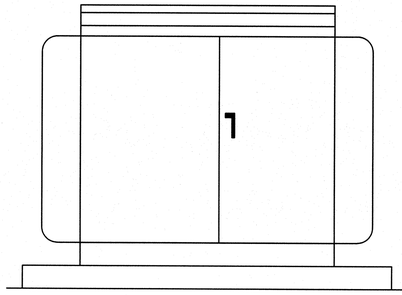
NOTE:
1. Above ground utility poles will be located at site.
Estimated pole heights will be ~38' above grade.
Reference Site Plan drawings for pole locations.



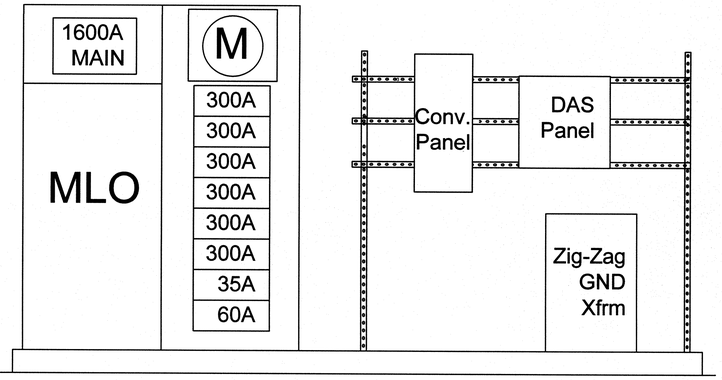
MV Transformer Dimensions



MV Transformer on Pad



AC Switchgear, Convenience Panel DAS Enclosure & Zig-Zag Xfrm



NOTE:
SOLAR DETAILS BY CLEAN ENERGY COLLECTIVE.

SITE ADDRESS:

SOLAR PANEL FACILITY

1291 Broadway
Haverhill, Massachusetts

PREPARED FOR:

CLEAN ENERGY COLLECTIVE

146 West Boylston Street
Suite 201
Worcester, Massachusetts 01606

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 Centre Street, Danvers, MA 01923
Voice (978) 777-3050, Fax (978) 774-7816
www.hancockassociates.com

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
5	KAC	VVT	10/13/2016	REVISED ACCESS ROAD
4	KAC	VVT	3/24/2016	CONSERVATION COMMISSION COMMENTS
3	KAC	VVT	3/2/2016	CONSERVATION COMMISSION COMMENTS
2	KAC	VVT	2/18/2016	PEER REVIEW COMMENTS
1	KAC	VVT	2/4/2016	PEER REVIEW COMMENTS

APPROVED BY: VVT
DATE: 10/5/15 DRAWN BY: KAC
SCALE: AS NOTED CHECK BY: JP/VVT

SOLAR DETAILS

PLOT DATE: Oct 13, 2016 8:55 am
PATH: F:\Civil 3D Projects\19168\DWG\

DWG: 19168eng access road revised.dwg
LAYOUT: Details (2)
SHEET: 9 OF 9
C5
PROJECT NO.: 19168