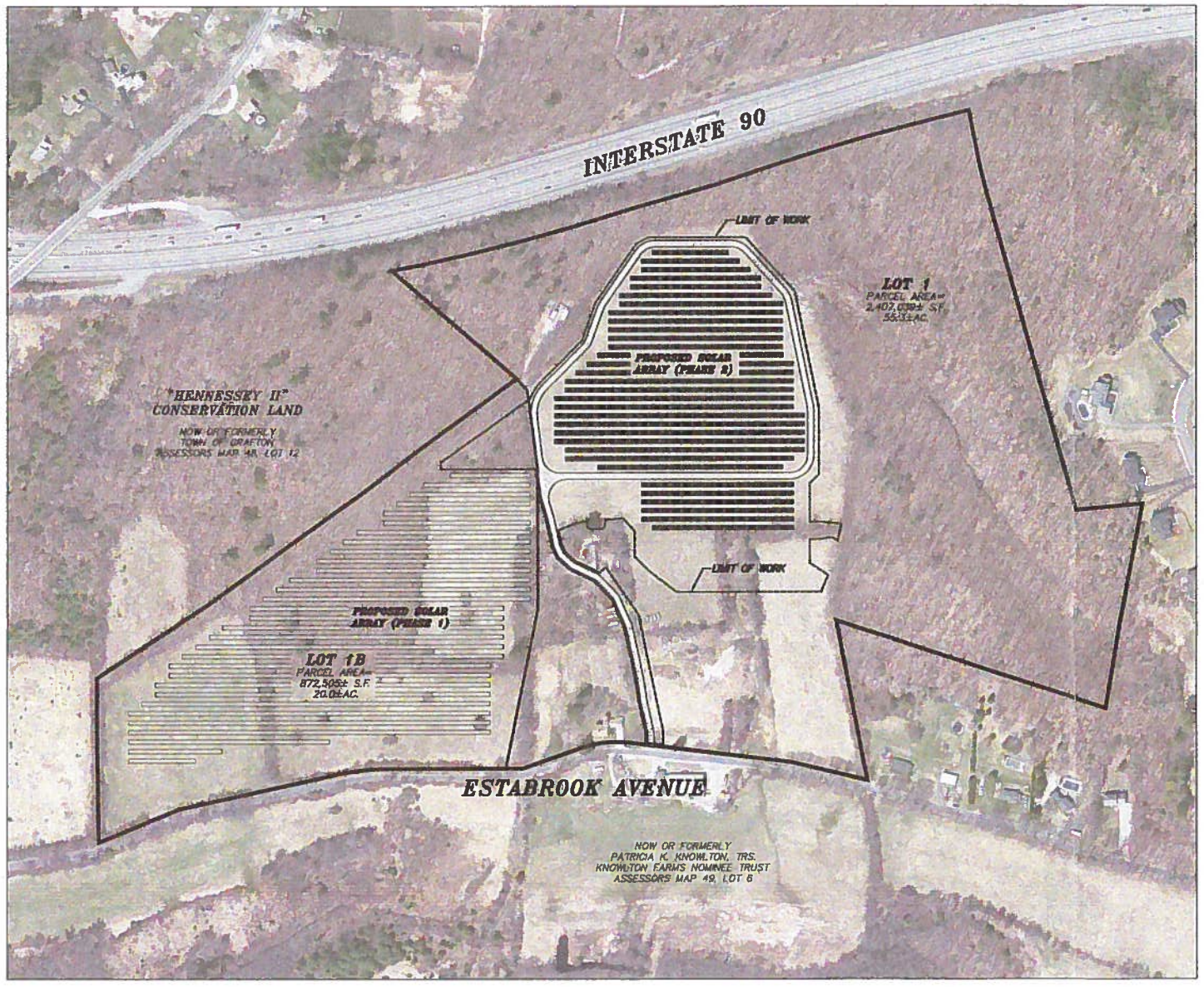
KNOWLTON FARMS SOLAR DEVELOPMENT
43 ESTABROOK AVENUE
[PHASE TWO]
(ASSESSOR'S MAP 49 – LOT 1)
–APPLICATION FOR SPECIAL PERMIT–
–APPLICATION FOR SITE PLAN APPROVAL–

PLANS AND DESIGN HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE PERFORMANCE STANDARDS SET FORTH IN SECTION 4.1 OF THE GRAFTON ZONING BYLAW

LOCATED IN

GRAFTON, MASSACHUSETTS

DATE: AUGUST 1, 2014



LOCUS CONTEXT MAP:

GRAPHIC SCALE
SCALE: 1"=200'

FEET 200 0 100 200 400 800
METERS 0 50 100 200 400

APPLICANT:

BLUEWAVE CAPITAL, LLC
JOHN DeVILLARS
75 ARLINGTON STREET, SUITE 500
BOSTON, MASSACHUSETTS 02116

BLUEWAVE
TEL: (617) 209-3122 FAX: (617) 395-2730
WWW.BLUEWAVE-CAPITAL.COM

RECORD OWNERS:

KNOWLTON FARMS NOMINEE TRUST
PATRICIA K. KNOWLTON, TRS.
43 ESTABROOK AVENUE
GRAFTON, MASSACHUSETTS 01519

SITE CIVIL ENGINEER:

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0447
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

ELECTRICAL ENGINEER:

solar design associates
P.O. BOX 242
HARVARD, MASSACHUSETTS 01451
TEL: (978) 456-6855 FAX: (978) 772-9715
WWW.SOLARDESIGN.COM

DRAWING INDEX:

SHEET 1	COVER SHEET & LOCUS CONTEXT MAP
SHEET 2	RECORD CONDITIONS PLAN 1
SHEET 3	RECORD CONDITIONS PLAN 2
SHEET 4	PERMIT SITE PLAN OF LAND 1
SHEET 5	PERMIT SITE PLAN OF LAND 2
SHEET 6	EROSION & SEDIMENT CONTROL PLAN 1
SHEET 7	EROSION & SEDIMENT CONTROL PLAN 2
SHEET 8	SITE DETAIL SHEET 1
SHEET 9	SITE DETAIL SHEET 2

APPROVED BY:
GRAFTON PLANNING BOARD

I, _____ CLERK OF THE TOWN OF GRAFTON, MASSACHUSETTS HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE GRAFTON PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THE OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

"THIS PLAN IS SUBJECT TO A SPECIAL PERMIT DATED _____"
"THIS PLAN IS SUBJECT TO SITE PLAN APPROVAL DATED _____"
"THIS PLAN IS SUBJECT TO A CERTIFICATE OF OF GOOD STANDING DATED _____"

DATE: _____ TOWN CLERK _____ DATE _____

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

DWG. No. 5560-CVR
(IMAGE: USGS Color Ortho Imagery (2008/2009))

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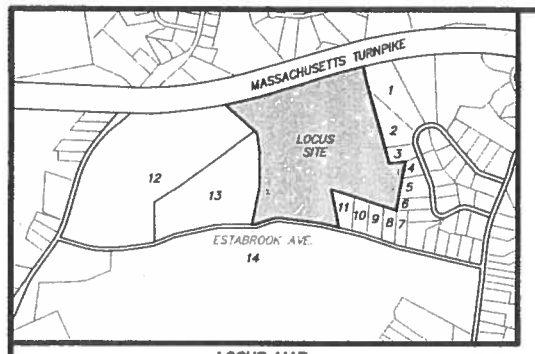
DWG FILE: 5650-CVR.dwg 8:38am PLOTTED: Aug 01, 2014 achristie



LOCUS MAP:

(SCALE: 1"=1000')

ABUTTER INFORMATION:

NOW OR FORMERLY

1. MAP 41/LOT 104 – JOSEPH DIROBERTO (23 VALLEY VIEW DRIVE)
2. MAP 41/LOT 103 – RICHARD URELLA (21 VALLEY VIEW DRIVE)
3. MAP 41/LOT 102 – STEVE SARDELLA (19 VALLEY VIEW DRIVE)
4. MAP 41/LOT 101 – FARID THANAWALLA (17 VALLEY VIEW DRIVE)
5. MAP 50/LOT 16 – MARTIN URBAN (15 VALLEY VIEW DRIVE)
6. MAP 50/LOT 15 – YONGHUA GIA (13 VALLEY VIEW DRIVE)
7. MAP 50/LOT 3F – WILLIAM MCNALLY (63 ESTABROOK AVENUE)
8. MAP 49/LOT 5 – CAROL WAHLGREN (61 ESTABROOK AVENUE)
9. MAP 49/LOT 4 – STEPHEN GOODSPEED (59 ESTABROOK AVENUE)
10. MAP 49/LOT 3 – KIM LORNA CHISSON (57 ESTABROOK AVENUE)
11. MAP 49/LOT 2 – WALDO SIMPSON (55 ESTABROOK AVENUE)
12. MAP 48/LOT 12 – TOWN OF GRAFTON (48 OLD WESTBORO ROAD)
13. MAP 49/LOT 1B – KNOWLTON FARMS NOMINEE TRUST (43 ESTABROOK AVENUE)
14. MAP 49/LOT 6 – KNOWLTON FARMS NOMINEE TRUST (43 ESTABROOK AVENUE)

LEGEND:

482	TWO FOOT CONTOUR
480	TEN FOOT CONTOUR
+ 240.1	SPOT ELEVATION
	BORDERING VEGETATIVE WETLANDS
+ WF C2	WETLAND FLAG
	LIMIT OF BUFFER ZONE
	TREE LINE
	STONE WALL
	STONE WALL REMAINS
	STOCKADE FENCE
	CHAINLINK FENCE
	WIRE FENCE
	GRAVEL ACCESS
	BOULDER
SB-X	SOIL BORING
TP1	TEST PIT
D	DRAIN LINE
OHW	OVERHEAD WIRES
	GUY WIRE
	TERMINUS UNKNOWN
	UTILITY POLE
HH	ELECTRICAL HAND HOLE
TYP.	TYPICAL
EOP	EDGE OF PAVEMENT
CONC.	CONCRETE
ELEV.	ELEVATION
AC.	ACRES
S.F.	SQUARE FOOT
INV.	INVERT
L=	LENGTH
CLF	CHAIN LINK FENCE
RWC	CONCRETE BLOCK RETAINING WALL

NOTES:

1. THE TOPOGRAPHY, SITE DETAIL & SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM AN INSTRUMENT SURVEY CONDUCTED ON THE GROUND BY MERIDIAN ASSOCIATES, INC. BETWEEN JULY 9, 2013 TO AUGUST 20, 2013, AND MOST RECENTLY MAY 27, 2014 TO JULY 18, 2014.
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9. THE WETLAND FLAGS DEPICTED WERE DEMARCATED BY LEC ENVIRONMENTAL CONSULTANTS, INC. ON APRIL 1, 2013 AND MOST RECENTLY JUNE 6, 2014.
10. THE SOIL BORINGS DEPICTED HEREON WERE PERFORMED BY YOUNGMIN CHO, PhD, GEOLOGIST, OF GEOSYNTEC CONSULTANTS ON JUNE 25-26, 2014.
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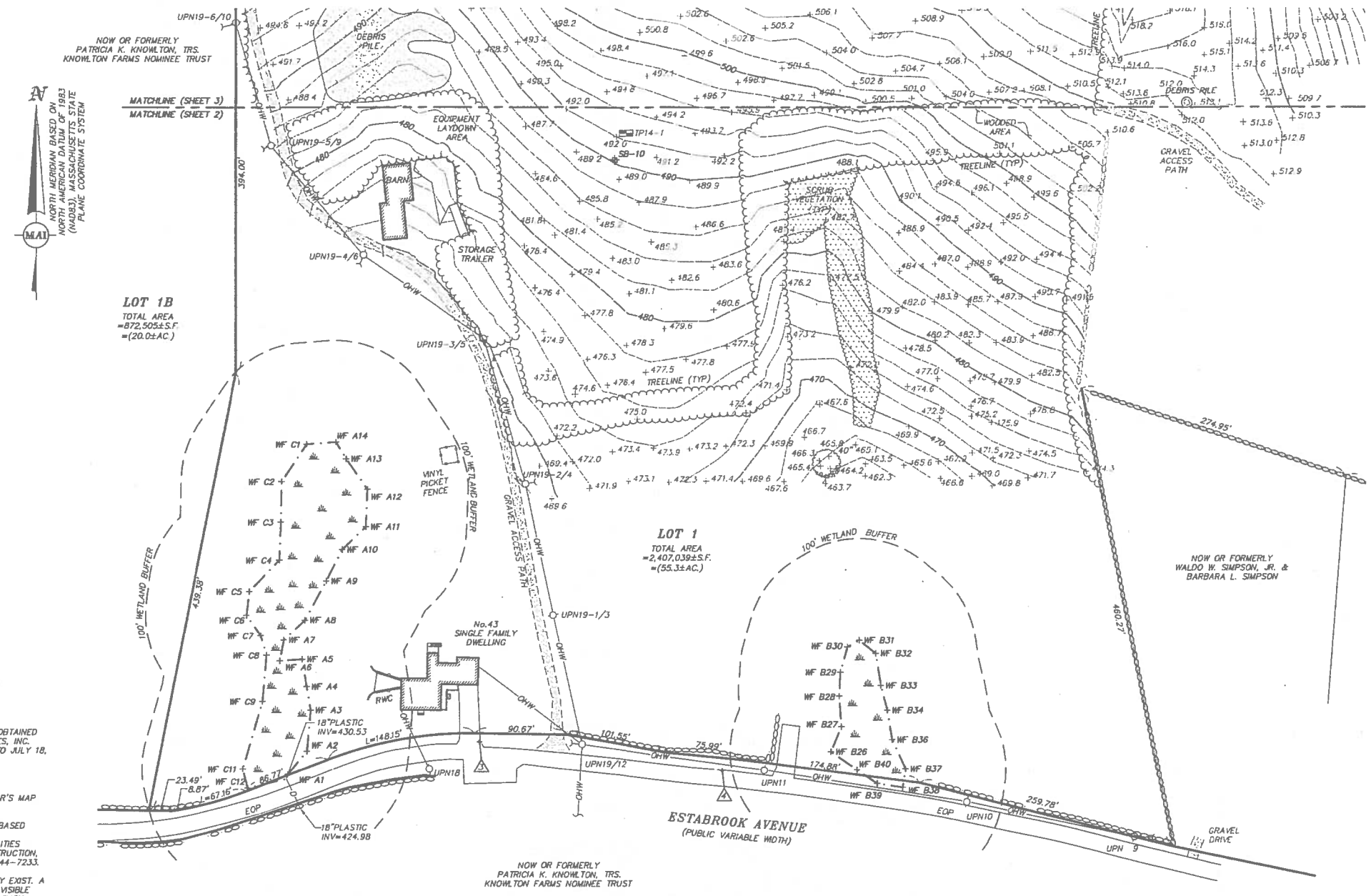
12. THE SUBJECT SITE IS LOCATED WITHIN THE MISCOE, WARREN AND WHITEHALL WATERSHEDS AREA OF CRITICAL AND ENVIRONMENTAL CONCERN AS DESIGNATED BY THE MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION.

ALL UNDERGROUND UTILITY DATA REPRESENTS RECORD INFORMATION RECOVERED THROUGH RESEARCH WITHOUT SURFACE DEMARCATION NOR SUBSURFACE VERIFICATION.

TEMPORARY BENCHMARK CHART:

T.B.M.#	DESCRIPTION	ELEVATION
3	MAGNETIC NAIL SET IN BITUMINOUS ROADWAY	446.12
4	MAGNETIC NAIL SET IN BITUMINOUS ROADWAY	446.83

(SEE NOTE 6)



GRAPHIC SCALE
SCALE 1"=60'

FEET 60 0 30 60 120 240
METERS 0 10 20 40 80

RECORD OWNER:

KNOWLTON FARMS NOMINEE TRUST
PATRICIA K. KNOWLTON, TRS.
43 ESTABROOK STREET
GRAFTON, MASSACHUSETTS 01519
– DEED BOOK 35401, PAGE 337 *
ASSESSORS MAP 49/LOT 1

REFERENCES:

- PLAN BOOK 172, PLAN 56 *
- PLAN BOOK 203, PLAN 82 *
- PLAN BOOK 291, PLAN 71 *
- PLAN BOOK 783, PLAN 102 *
- PLAN BOOK 784, PLAN 32 *
- PLAN BOOK 786, PLAN 9 *
- PLAN BOOK 786, PLAN 10 *
- PLAN BOOK 852, PLAN 77 *
- PLAN BOOK 903, PLAN 23 *

* DENOTES DOCUMENTS RECORDED AT THE WORCESTER DISTRICT REGISTRY OF DEEDS.

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

DWG. No. 5650-REC

DATE	DESCRIPTION	BY

REVISIONS

COMMONWEALTH OF MASSACHUSETTS
RICHARD L. WAITT
CIVIL
No. 34776
REGISTERED PROFESSIONAL ENGINEER
8.1.14

RECORD CONDITIONS PLAN OF LAND

LOCATED IN

GRAFTON, MASSACHUSETTS

(WORCESTER COUNTY)

PREPARED FOR

BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
590 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 927-5960
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A.CHRISTIE
CHECKED BY: R.WAITT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 2 OF 9
PROJECT No. 5650

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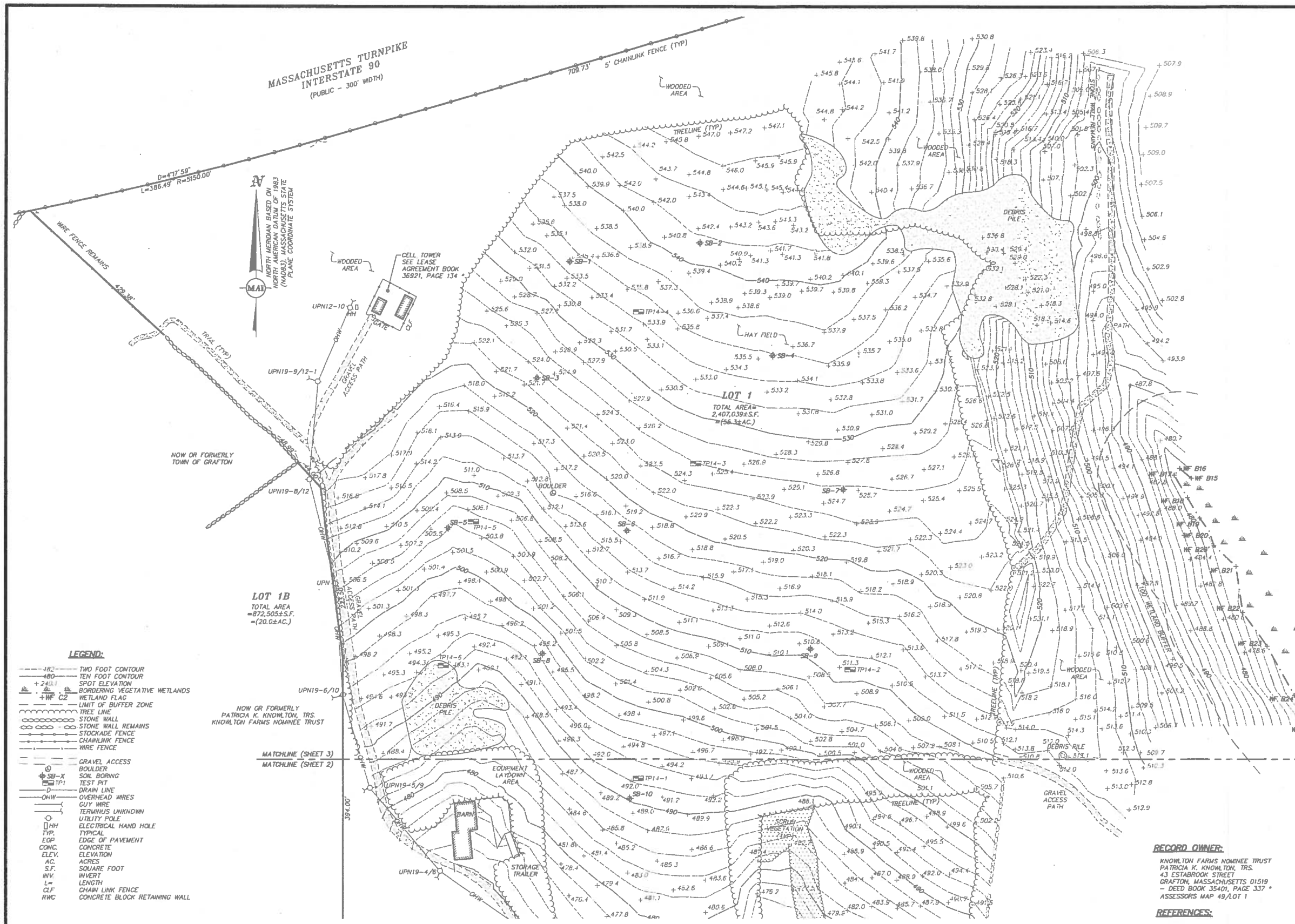

SOILS INFORMATION:

TEST PITS WERE PERFORMED ON JULY 14, 2014 BY ALEXANDER F. PARKER (CERTIFIED SOIL EVALUATOR #1848)

TEST PIT: TP14-1
ELEV.=492.5±
E.S.H.G.W. @ 111" (ELEV=483.3±)
0"–10" HORIZON Ap: SANDY LOAM
10"–23" HORIZON Bw: SANDY LOAM
23"–52" LAYER C1: LOAMY SAND
52"–110" LAYER C2d: SANDY LOAM
REDOX NOT OBSERVED
REFUSAL NOT REACHED

TEST PIT: TP14-2
ELEV.=511.2±
E.S.H.G.W. @ 72" (ELEV=505.2±)
0"–11" HORIZON Ap: SANDY LOAM
11"–18" HORIZON Bw: SANDY LOAM
18"–112" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 72"
REFUSAL NOT REACHED

TEST PIT: TP14-3
ELEV.=526.0±
E.S.H.G.W. @ 69" (ELEV=520.3±)
0"–10" HORIZON Ap: SANDY LOAM
10"–17" HORIZON Bw: SANDY LOAM
17"–116" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 69"
REFUSAL NOT REACHED

TEST PIT: TP14-4
ELEV.=534.8±
E.S.H.G.W. @ 72" (ELEV=528.8±)
0"–9" HORIZON Ap: SANDY LOAM
9"–20" HORIZON Bw: SANDY LOAM
20"–114" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 72"
REFUSAL NOT REACHED

TEST PIT: TP14-5
ELEV.=505.1±
E.S.H.G.W. @ 64" (ELEV=499.8±)
0"–3" HORIZON Ap: SANDY LOAM
3"–8" HORIZON Bw: SANDY LOAM
8"–109" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 64"
REFUSAL NOT REACHED

TEST PIT: TP14-6
ELEV.=493.4±
E.S.H.G.W. @ 38" (ELEV=490.2±)
0"–9" HORIZON Ap: SANDY LOAM
9"–18" HORIZON Bw: SANDY LOAM
18"–106" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 38"
REFUSAL NOT REACHED

LEGEND:

482	TWO FOOT CONTOUR
480	TEN FOOT CONTOUR
+243.1	SPOT ELEVATION
	BORDERING VEGETATIVE WETLANDS
WF C2	WETLAND FLAG
	LIMIT OF BUFFER ZONE
	TREE LINE
	STONE WALL
	STONE WALL REMAINS
	STOCKADE FENCE
	CHAINLINK FENCE
	WIRE FENCE
	GRAVEL ACCESS
	BOULDER
SB-X	SOIL BORING
TP1	TEST PIT
D	DRAIN LINE
OHW	OVERHEAD WIRES
	GUY WIRE
	TERMINUS UNKNOWN
	UTILITY POLE
HH	ELECTRICAL HAND HOLE
TYP.	TYPICAL
EOP	EDGE OF PAVEMENT
CONC.	CONCRETE
ELEV.	ELEVATION
AC.	ACRES
S.F.	SQUARE FOOT
INV.	INVERT
L=	LENGTH
CLF	CHAIN LINK FENCE
RWC	CONCRETE BLOCK RETAINING WALL

GRAPHIC SCALE
SCALE 1"=60'

FEET 60 0 30 60 120 240
METERS 0 10 20 40 80

REFER TO SHEET 2 FOR GENERAL NOTES

RECORD OWNER:

KNOWLTON FARMS NOMINEE TRUST
PATRICIA K. KNOWLTON, TRS.
43 ESTABROOK STREET
GRAFTON, MASSACHUSETTS 01519
– DEED BOOK 35401, PAGE 337 *
ASSESSORS MAP 49/LOT 1

REFERENCES:

–PLAN BOOK 177, PLAN 56 *
–PLAN BOOK 203, PLAN 82 *
–PLAN BOOK 291, PLAN 71 *
–PLAN BOOK 783, PLAN 102 *
–PLAN BOOK 784, PLAN 32 *
–PLAN BOOK 786, PLAN 9 *
–PLAN BOOK 786, PLAN 10 *
–PLAN BOOK 852, PLAN 77 *
–PLAN BOOK 903, PLAN 23 *

* DENOTES DOCUMENTS RECORDED AT THE WORCESTER DISTRICT REGISTRY OF DEEDS.

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

DWG. No. 5650-REC

REVISIONS			
DATE	DESCRIPTION	BY	

COMMONWEALTH OF MASSACHUSETTS
ALEXANDER F. PARKER
No. 34776
CIVIL
REGISTERED PROFESSIONAL ENGINEER
8.1.14

RECORD CONDITIONS PLAN OF LAND
LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0444
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A. CHRISTIE
CHECKED BY: R. WAITT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 3 OF 9
PROJECT No. 5650

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FIXED TILT PV ARRAY

MODULES	DC POWER	AC POWER
6,408 (350W)	3.6MW	2.5MW

ALL UNDERGROUND UTILITY DATA REPRESENTS RECORD INFORMATION RECOVERED THROUGH RESEARCH WITHOUT SURFACE DEMARCATION NOR SUBSURFACE VERIFICATION.

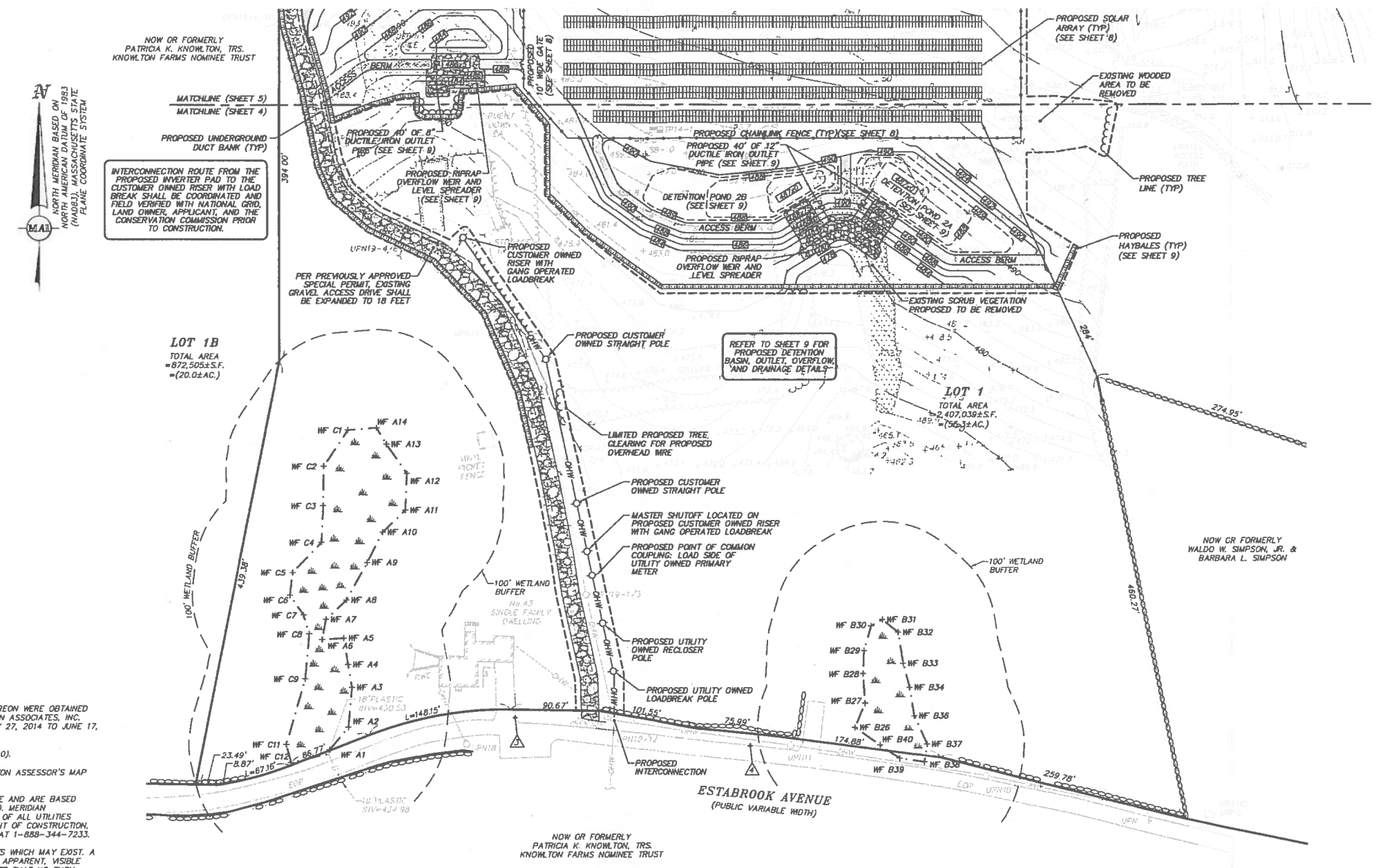
TEMPORARY BENCHMARK CHART:

T.B.M.#	DESCRIPTION	ELEVATION
3	MAGNETIC NAIL SET IN BITUMINOUS ROADWAY	446.12
4	MAGNETIC NAIL SET IN BITUMINOUS ROADWAY	446.83

(SEE NOTE 6)

LEGEND:

- 480 — TWO FOOT CONTOUR
- 480 — TEN FOOT CONTOUR
- +740.1 — SPOT ELEVATION
- BORDERING VEGETATIVE WETLANDS
- +WF C2 — WETLAND FLAG
- LIMIT OF BUFFER ZONE
- TREE LINE
- STONE WALL
- STONE WALL REMAINS
- STOCKADE FENCE
- CHAINLINK FENCE
- WIRE FENCE
- GRAVEL ACCESS
- BOULDER
- SB-A — SOIL BORING
- TP1 — TEST PIT
- DRAIN LINE
- OHW — OVERHEAD WIRES
- GUY WIRE
- TERMINUS UNKNOWN
- UTILITY POLE
- ELECTRICAL HAND HOLE
- TYP. — TYPICAL
- EOP — EDGE OF PAVEMENT
- CONC. — CONCRETE
- ELEV. — ELEVATION
- AC. — ACRES
- S.F. — SQUARE FOOT
- INV. — INVERT
- L= — LENGTH
- CLF — CHAIN LINK FENCE
- RWC — CONCRETE BLOCK RETAINING WALL
- PROPOSED LIMIT OF WORK
- PROPOSED TREE LINE
- PROPOSED HAYBALES
- 480 — PROPOSED CONTOUR
- 487.61 — PROPOSED SPOT ELEVATION
- PD — PROPOSED DRAINLINE
- PROPOSED CHAINLINK FENCE
- PE — PROPOSED ELECTRIC LINE
- POHW — PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE



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SCHEDULE OF DIMENSIONAL REGULATIONS

	REQUIRED*	PROVIDED
FRONT YARD SETBACK	30' (MIN.)	600'± (TO ESTABROOK AVENUE)
SIDE YARD SETBACK	15' (MIN.)	51'± (PROPOSED TRANSFORMER)
REAR YARD SETBACK	15' (MIN.)	136±' (PROPOSED ARRAY)
HEIGHT OF STRUCTURES	35' (MAX)	7.4' (PROPOSED ARRAY)*

PER TOWN OF GRAFTON ZONING BY-LAW SECTION 3.2.3.2; INTENSITY OF USE SCHEDULE: "ZONE RESIDENTIAL (R40)"
*HEIGHT IS BASED ON A TYPICAL RACKING SYSTEM AND PV MODULE.

GRAPHIC SCALE
SCALE 1"=60'

FEET: 60 0 30 60 120 240
METERS: 0 10 20 40 80

RECORD OWNER:

KNOWLTON FARMS NOMINEE TRUST
PATRICIA K. KNOWLTON, TRS.
43 ESTABROOK STREET
GRAFTON, MASSACHUSETTS 01519
- DEED BOOK 35401, PAGE 337 *
ASSESSORS MAP 49/LOT 1

REFERENCES:

- PLAN BOOK 177, PLAN 56 *
- PLAN BOOK 203, PLAN 82 *
- PLAN BOOK 291, PLAN 71 *
- PLAN BOOK 783, PLAN 102 *
- PLAN BOOK 784, PLAN 32 *
- PLAN BOOK 786, PLAN 9 *
- PLAN BOOK 786, PLAN 10 *
- PLAN BOOK 852, PLAN 77 *
- PLAN BOOK 903, PLAN 23 *

* DENOTES DOCUMENTS RECORDED AT THE WORCESTER DISTRICT REGISTRY OF DEEDS.

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

REVISIONS

DATE	DESCRIPTION	BY

COMMONWEALTH OF MASSACHUSETTS CIVIL No. 34776 REGISTERED PROFESSIONAL ENGINEER 8.1.14

PERMIT SITE PLAN OF LAND 1
LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 355D
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0447
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A.CHRISTIE
CHECKED BY: R.WAITT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 4 OF 9
PROJECT No. 5650

DWG. No. 5650-SITE

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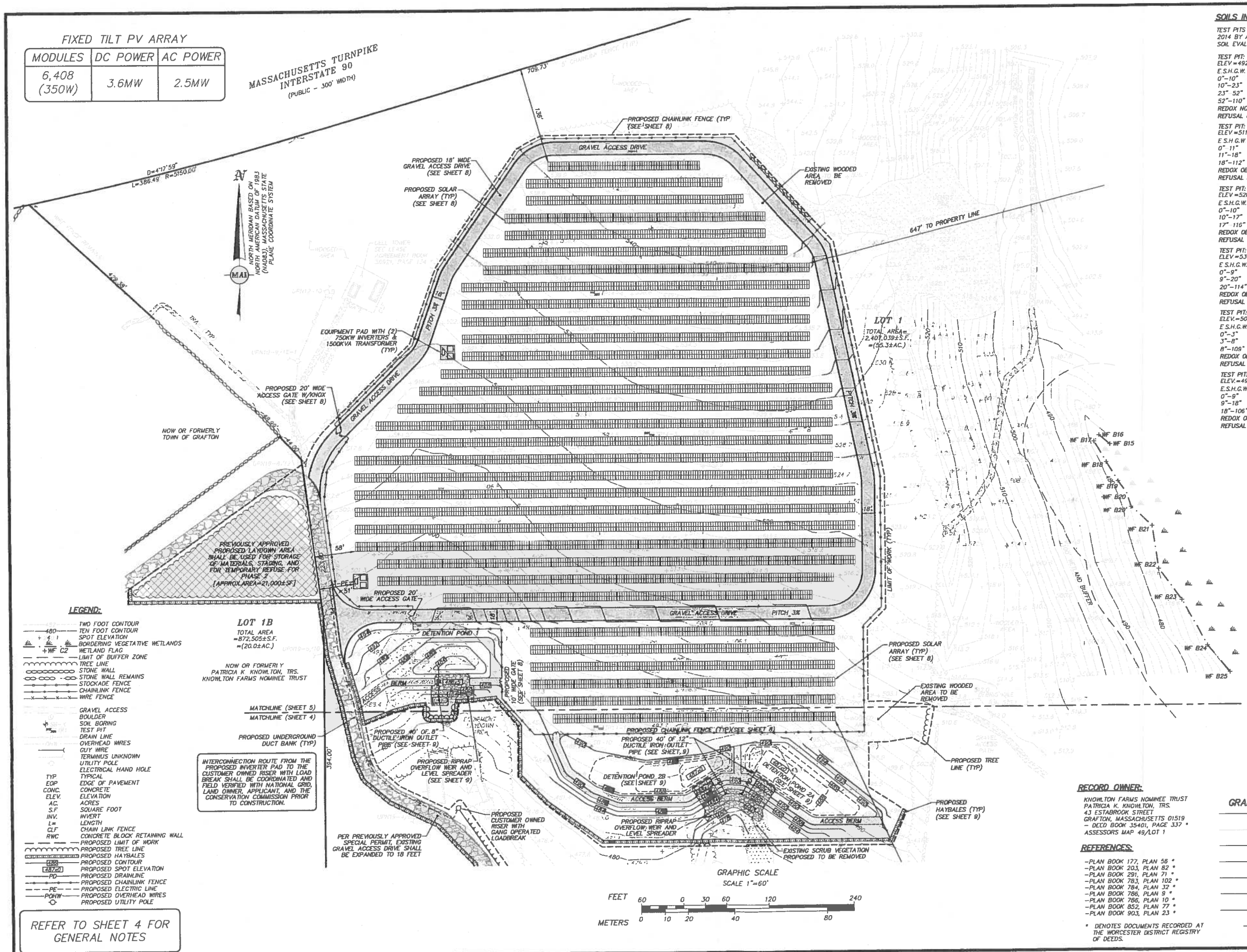
FIXED TILT PV ARRAY

MODULES	DC POWER	AC POWER
6,408 (350W)	3.6MW	2.5MW



LEGEND:

- TWO FOOT CONTOUR
- TEN FOOT CONTOUR
- SPOT ELEVATION
- BORDERING VEGETATIVE WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- TREE LINE
- STONE WALL
- STONE WALL REMAINS
- STOCKADE FENCE
- CHAINLINK FENCE
- WIRE FENCE
- GRAVEL ACCESS
- BOULDER
- SOIL BORING
- TEST PIT
- DRAIN LINE
- OVERHEAD WIRES
- GUY WIRE
- TERMINUS UNKNOWN
- UTILITY POLE
- ELECTRICAL HAND HOLE
- TYP TYPICAL
- EOP EDGE OF PAVEMENT
- CONC. CONCRETE
- ELEV. ELEVATION
- AC. ACRES
- S.F SQUARE FOOT
- INV. INVERT
- L= LENGTH
- C.L.F CHAIN LINK FENCE
- RWC CONCRETE BLOCK RETAINING WALL
- PROPOSED LIMIT OF WORK
- PROPOSED TREE LINE
- PROPOSED HAYBALES
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED DRAINLINE
- PROPOSED CHAINLINK FENCE
- PROPOSED ELECTRIC LINE
- PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

INTERCONNECTION ROUTE FROM THE PROPOSED INVERTER PAD TO THE CUSTOMER OWNED RISER WITH LOAD BREAK SHALL BE COORDINATED AND FIELD VERIFIED WITH NATIONAL GRID, LAND OWNER, APPLICANT, AND THE CONSERVATION COMMISSION PRIOR TO CONSTRUCTION.

REFER TO SHEET 4 FOR GENERAL NOTES

SOILS INFORMATION:

TEST PITS WERE PERFORMED ON JULY 14, 2014 BY ALEXANDER F. PARKER (CERTIFIED SOIL EVALUATOR #1848)

TEST PIT: TP14-1
ELEV=492.5±
E.S.H.G.W. @ 111" (ELEV=483.3±)
0"-10" HORIZON Ap: SANDY LOAM
10"-23" HORIZON Bw: SANDY LOAM
23" 52" LAYER C1 LOAMY SAND
52"-110" LAYER C2d: SANDY LOAM
REDOX NOT OBSERVED
REFUSAL NOT REACHED

TEST PIT: TP14-2
ELEV=511.2±
E.S.H.G.W @ 72" (ELEV=505.2±)
0" 11" HORIZON Ap: SANDY LOAM
11"-18" HORIZON Bw: SANDY LOAM
18"-112" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 72"
REFUSAL NOT REACHED

TEST PIT: TP14-3
ELEV=526.0±
E.S.H.G.W. @ 69" (ELEV=520.3±)
0"-10" HORIZON Ap: SANDY LOAM
10"-17" HORIZON Bw: SANDY LOAM
17" 116" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 69"
REFUSAL NOT REACHED

TEST PIT: TP14-4
ELEV=534.8±
E.S.H.G.W. @ 72" (ELEV=528.8±)
0"-9" HORIZON Ap: SANDY LOAM
9"-20" HORIZON Bw: SANDY LOAM
20"-114" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 72"
REFUSAL NOT REACHED

TEST PIT: TP14-5
ELEV.=505.1±
E.S.H.G.W. @ 64" (ELEV=499.8±)
0"-3" HORIZON Ap: SANDY LOAM
3"-8" HORIZON Bw: SANDY LOAM
8"-109" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 64"
REFUSAL NOT REACHED

TEST PIT: TP14-6
ELEV.=493.4±
E.S.H.G.W @ 38" (ELEV=490.2±)
0"-9" HORIZON Ap: SANDY LOAM
9"-18" HORIZON Bw: SANDY LOAM
18"-106" LAYER Cd: SANDY LOAM
REDOX OBSERVED @ 38"
REFUSAL NOT REACHED

RECORD OWNER:

KNOWLTON FARMS NOMINEE TRUST
PATRICIA K. KNOWLTON, TRS.
43 ESTABROOK STREET
GRAFTON, MASSACHUSETTS 01519
– DEED BOOK 35401, PAGE 337 *
ASSESSORS MAP 49/LOT 1

REFERENCES:

- PLAN BOOK 177, PLAN 56 *
- PLAN BOOK 203, PLAN 82 *
- PLAN BOOK 291, PLAN 71 *
- PLAN BOOK 783, PLAN 102 *
- PLAN BOOK 784, PLAN 32 *
- PLAN BOOK 786, PLAN 9 *
- PLAN BOOK 786, PLAN 10 *
- PLAN BOOK 852, PLAN 77 *
- PLAN BOOK 903, PLAN 23 *

* DENOTES DOCUMENTS RECORDED AT THE WORCESTER DISTRICT REGISTRY OF DEEDS.

APPROVED BY:
GRAFTON PLANNING BOARD

DATE

DWG. No. 5650-SITE

REVISIONS			
DATE	DESCRIPTION	BY	

COMMONWEALTH OF MASSACHUSETTS RICHARD A. WAITT No. 34776 REGISTERED PROFESSIONAL ENGINEER 8.1.14

PERMIT SITE PLAN OF LAND 2

LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CLIMBING CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0447
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A.CHRISTIE
CHECKED BY: R.WAITT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 5 OF 9
PROJECT No. 5650

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DWG FILE: 5650-SITE.dwg 9:30am PLOTTED: Aug 01, 2014 achristie

NOTES:

1. THE TOPOGRAPHY, SITE DETAIL & SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM AN INSTRUMENT SURVEY CONDUCTED ON THE GROUND BY MERIDIAN ASSOCIATES, INC. BETWEEN JULY 9, 2013 TO AUGUST 20, 2013, AND MOST RECENTLY MAY 27, 2014 TO JULY 18, 2014.
2. EXISTING GROUND WITHIN THE PROPOSED CHAINLINK FENCE TO BE CLEARED, STUMPED AND RE-GRADED TO ELIMINATE MINOR SURFACE DISTURBANCES. RE-GRADING OF THE ENTIRE SITE IS NOT PROPOSED OR NECESSARY. RE-VEGETATION OF THE SITE SHALL BE ESTABLISHED WITH LOW GROWTH GROUND COVER
3. THE PROPOSED LIMIT OF WORK LINE ALSO DEPICTS THE EXTENT OF TREE CLEARING TO BE PERFORMED ON THE PROJECT SITE. NO TREES OUTSIDE THE DESIGNATED LIMIT OF WORK LINE ARE TO BE REMOVED BY THE CONTRACTOR.
4. COMMON FILL (SITE GRADING AREAS) SHALL CONSIST OF MINERAL SOIL SUBSTANTIALLY FREE FROM ORGANIC MATERIALS, LOAM, WOOD TRASH AND OTHER OBJECTIONABLE MATERIALS WHICH MAY BE COMPRESSIBLE OR WHICH CANNOT BE PROPERLY COMPACTED. SELECT COMMON FILL SHALL NOT CONTAIN STONES LARGER THAN 2-IN. IN LARGEST DIAMETER AND SHALL HAVE A MAXIMUM OF 75% PASSING THE NO. 40 SIEVE AND A MAXIMUM OF 20% PASSING THE NO. 200 SIEVE. SELECT COMMON FILL SHALL NOT CONTAIN GRANITE BLOCKS, BROKEN CONCRETE, MASONRY RUBBLE OR OTHER SIMILAR MATERIALS. IT SHALL HAVE PHYSICAL PROPERTIES SUCH THAT IT CAN BE READILY SPREAD AND COMPACTED DURING FILLING. SNOW, ICE AND FROZEN SOIL WILL NOT BE PERMITTED. SOIL EXCAVATED FROM THE STRUCTURE AREAS AND WHICH MEETS THE ABOVE REQUIREMENTS MAY BE USED.
5. SELECT COMMON FILL (ROADWAY AREAS) SHALL BE PLACED IN LAYERS HAVING A MAXIMUM THICKNESS OF 8 IN. MEASURED BEFORE COMPACTION. EACH LAYER OF FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY DETERMINED BY THE ASTM D1557. COMPACTION OF STRUCTURAL FILL SHALL CONSIST OF FULLY LOADED TEN WHEEL TRUCKS, A TRACTOR DOZER WEIGHING AT LEAST 30,000 LBS AND OPERATED AT FULL SPEED, A HEAVY VIBRATORY ROLLER, OR OTHER METHOD ONLY AS APPROVED BY THE ENGINEER. COMPACTION OF SELECT COMMON FILL IN CONFINED AREAS ADJACENT TO STRUCTURES SHALL BE ACCOMPLISHED BY HAND OPERATED VIBRATORY EQUIPMENT OR MECHANICAL TAMPERS APPROVED BY THE ENGINEER. AS A MINIMUM, COMPACTION OF SELECT COMMON FILL SHALL CONSIST OF FOUR COVERAGES OF THE APPROVED EQUIPMENT.
6. SITE PREPARATION SHALL INCLUDE CLEARING, GRUBBING, DELETERIOUS SOILS, VEGETATION AND DEBRIS. ALL TREES, STUMPS, BRUSH, SHRUBS, ROOTS, GRASS, WEEDS, RUBBISH, STONES LARGER THAN 2-IN. IN THE LARGEST DIAMETER AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF FROM AREAS TO BE FILLED AND COMPACTED. AREAS OUTSIDE OF THE LIMITS OF WORK SHALL BE PROTECTED FROM DAMAGE AND NO EQUIPMENT OR MATERIALS SHALL BE STORED IN THESE AREAS. NO STUMPS, TREES, LIMBS, OR BRUSH SHALL BE BURIED IN ANY FILLS OR EMBANKMENTS.
7. EROSION AND SEDIMENT CONTROL, BOTH DURING AND AFTER CONSTRUCTION, SHALL BE PROVIDED AS REQUIRED TO RETAIN SEDIMENT ONSITE, AND TO CONTROL EROSION OF EMBANKMENTS, TEMPORARY AND FINAL EXPOSED SLOPES, AND TEMPORARY MATERIAL STOCKPILE(S). SILT FENCES, CHECK DAMS, DRAINAGE DITCHES OR SWALES, TEMPORARY SEEDING, AND PRE-MANUFACTURED TEXTILES, GEOTUBES, GEOGRID, CELLULAR GEOWEB, ETC., SHALL BE UTILIZED AS APPROPRIATE. EROSION AND SETTLEMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL PERMITS AND CODES AND THIS SPECIFICATION. DURING THE EXCAVATION OF THE WORK AT THE SITE, OPERATIONS SHALL BE CONTINUOUSLY MONITORED TO AVOID THE CREATION OF CONDITIONS THAT COULD LEAD TO EXCESSIVE EROSION OF SOIL WITH SURFACE RUNOFF FROM THE WORK AREAS. CONTROLS SHALL BE PROVIDED TO PROTECT THE WATER QUALITY AND SHALL BE IN ACCORDANCE WITH PROJECT DOCUMENTS AND ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. EROSION CONTROL MEASURES SHALL BE EMPLOYED TO REDUCE EROSION OF SLOPES AND SILTATION OF OFF-SITE OUTFALLS AND TRIBUTARIES.
8. UPON SIGNS OF CONCENTRATED FLOW BY EVIDENCE OF GULLYING OR RILLING IN DISTURBED AREAS, HAYBALES SHALL BE PLACED IN THESE AREAS, SPACED EVERY 50' IN THE UPGRADIENT SLOPE.
9. ALL MATERIALS (I.E. STONE, SOLAR EQUIPMENT) WILL BE OFFLOADED AND STORED WITHIN THE PROPOSED ARRAY FIELD AND THE DESIGNATED LAYDOWN AREA IS DEPICTED HEREIN.
10. ALL DISTURBED AREAS SHALL BE RE-ESTABLISHED WITH "SOLAR FARM SEED MIX", OR APPROVED EQUAL (SEE NOTES DEPICTED HEREON).

ESTABLISHED GUIDELINES FOR ERNST "SOLAR FARM SEED MIX"

(©ERNST CONSERVATION SEEDS)

GENERAL:
ERNST "SOLAR FARM SEED MIX" (#186) IS A SLOW GROWING SEED MIXTURE DESIGNED FOR, BUT LIMITED TO, USE IN SOLAR ARRAY LAYOUT APPLICATIONS.

SPECIES LIST:

- 30% CREEPING RED FESCUE (FESTUCA RUBRA)
- 30% SHEEP FESCUE, 'WHISPER' (FESTUCA OVINA, 'WHISPER')
- 15% HARD FESCUE, 'HERON' (FESTUCA OVINA VAR. DURIUSCULA (F. LONGIFOLIA), 'HERON')
- 10% ANNUAL RYEGRASS (LOLIUM MULTIFLORUM (L. PERENNE VAR. ITALICUM))
- 7.5% HARD FESCUE, 'CHARIOT' (FESTUCA BREVIPILA, 'CHARIOT')
- 7.5% HARD FESCUE, 'BEACON' (FESTUCA BREVIPILA, 'BEACON')

SEED BED PREPARATION:
REMOVE ALL INVASIVE SPECIES, TILL EXISTING SOIL AND RAKE SMOOTH.

SEED APPLICATION AND RATE:
THE IDEAL PLANTING DEPTH IS 1/4-1/2". UNDER IDEAL CONDITIONS SEEDS LAYING ON THE SURFACE WILL GERMINATE. RECOMMENDED APPLICATION RATE FOR SEEDING IS 6 LBS PER 1,000 SQUARE FEET. AFTER SEEDING, RAKE SEED INTO THE SOIL AND ROLL SOIL TO ENSURE GOOD SEED TO SOIL CONTACT, BUT DO NOT CRUSH SOIL AGGREGATES OR OVERLY COMPACT SOIL. IF THERE IS LACK OF NATURAL RAINFALL AT THE TIME OF SEEDING THE SEED BED SHOULD BE IRRIGATED LIGHTLY FOR A PERIOD OF 7-10 DAYS TO PROMOTE GERMINATION.

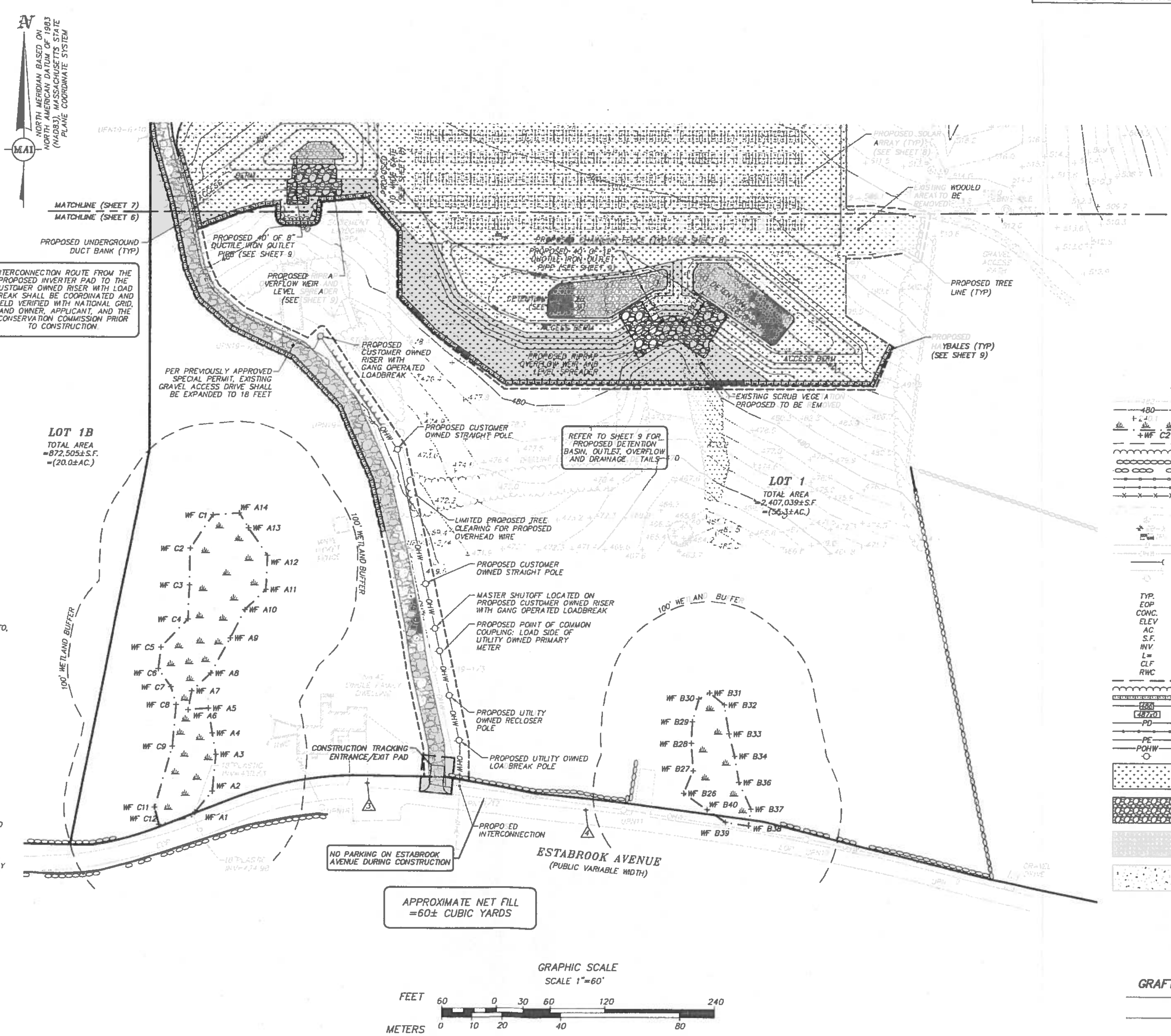
SEEDING DATES:
FOR FALL INSTALLATION, SEED BETWEEN AUGUST 15 AND SEPTEMBER 10. FOR SPRING INSTALLATION, SEED AS EARLY AS POSSIBLE SOMETIME BETWEEN APRIL 15 AND MAY 10.

FERTILIZATION AND SOIL REQUIREMENTS:
THE USE OF FERTILIZER WHEN ESTABLISHING NATIVE PLANT SPECIES IS NOT RECOMMENDED. THE USE OF FERTILIZERS CAN PROMOTE THE GROWTH OF WEED SPECIES AND CAN LEAD TO CONTAMINATION OF NEARBY WETLAND AREAS. IT IS RECOMMENDED TO ADD ORGANIC MATERIAL TO ALL DISTURBED AREAS AFTER THE TOPSOIL HAS BEEN REMOVED OR DEPLETED. THIS WILL IMPROVE SOIL FERTILITY.

GENERAL MAINTENANCE:
GRASSY WEEDS OR PERSISTENT PERENNIALS CAN RE-ESTABLISH IN THESE SOIL TYPES. WEED CONTROL IS CRITICAL IN THE FIRST AND SECOND YEARS AFTER PLANTING. APPLICATIONS OF SPECIFIC HERBICIDES PROVIDED BY LOCAL VENDORS CAN HELP CONTROL GRASSY AND PERSISTENT WEED SPECIES, SUCH AS DANDELIONS, THISTLE, ETC.

ESTABLISHMENT:
USUALLY, A NATIVE ESTABLISHMENT TAKES 2-3 YEARS TO BECOME FULLY RECOGNIZABLE. DURING THIS PERIOD, VIGILANT WEED CONTROL (MOWING HIGH AND/OR AN HERBICIDE APPLICATION) IS NECESSARY TO ASSIST IN ESTABLISHMENT. RE-SEEDING MAY BE REQUIRED UNTIL THE SEED MIX CAN ESTABLISH ITSELF. IRRIGATION MAY BE NECESSARY IF PRECIPITATION IS INFREQUENT, CONDITIONS ARE HOT WITH HIGH SUNLIGHT INTENSITY, AND/OR SOILS DO NOT HOLD WATER (I.E., SANDY SOILS).

REFER TO SHEET 4 AND 5 FOR SITE PLAN AND GENERAL NOTES



ALL UNDERGROUND UTILITY DATA REPRESENTS RECORD INFORMATION RECOVERED THROUGH RESEARCH WITHOUT SURFACE DEMARCATION NOR SUBSURFACE VERIFICATION

LEGEND:

- TWO FOOT CONTOUR
- TEN FOOT CONTOUR
- SPOT ELEVATION
- BORDERING VEGETATIVE WETLANDS
- WETLAND FLAG
- LIMIT OF BUFFER ZONE
- TREE LINE
- STONE WALL
- STONE WALL REMAINS
- STOCKADE FENCE
- CHAINLINK FENCE
- WIRE FENCE
- GRAVEL ACCESS
- BOULDER
- SOIL BORING
- TEST PIT
- DRAIN LINE
- OVERHEAD WIRES
- GUY WIRE
- TERMINUS UNKNOWN
- UTILITY POLE
- ELECTRICAL HAND HOLE
- TYP. TYPICAL
- EOP EDGE OF PAVEMENT
- CONC. CONCRETE
- ELEV ELEVATION
- AC ACRES
- S.F. SQUARE FOOT
- INV INVERT
- L= LENGTH
- CLF CHAIN LINK FENCE
- RWC CONCRETE BLOCK RETAINING WALL
- PROPOSED LIMIT OF WORK
- PROPOSED TREE LINE
- PROPOSED HAYBALES
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PD PROPOSED DRAINLINE
- PROPOSED CHAINLINK FENCE
- PE PROPOSED ELECTRIC LINE
- POHW PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE
- SOLAR FARM SEED MIX PLANTING AREA
- RIP RAP AREA
- STONE AREA
- CONCRETE AREA

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

DWG. No. 5650-ECP

REVISIONS		
DATE	DESCRIPTION	BY

EROSION CONTROL PLAN 1

LOCATED IN

GRAFTON, MASSACHUSETTS

(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915 TELEPHONE: (978) 299-0447
69 MILK STREET, SUITE 302 WESTBOROUGH, MASSACHUSETTS 01581 TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM
DESIGNED BY: A.CHRISTIE CHECKED BY: R.WAITT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 6 OF 9
PROJECT No. 5650

DWG FILE: 5650-ECP.dwg 9:30am PLOTTED: Aug 01, 2014 achristie

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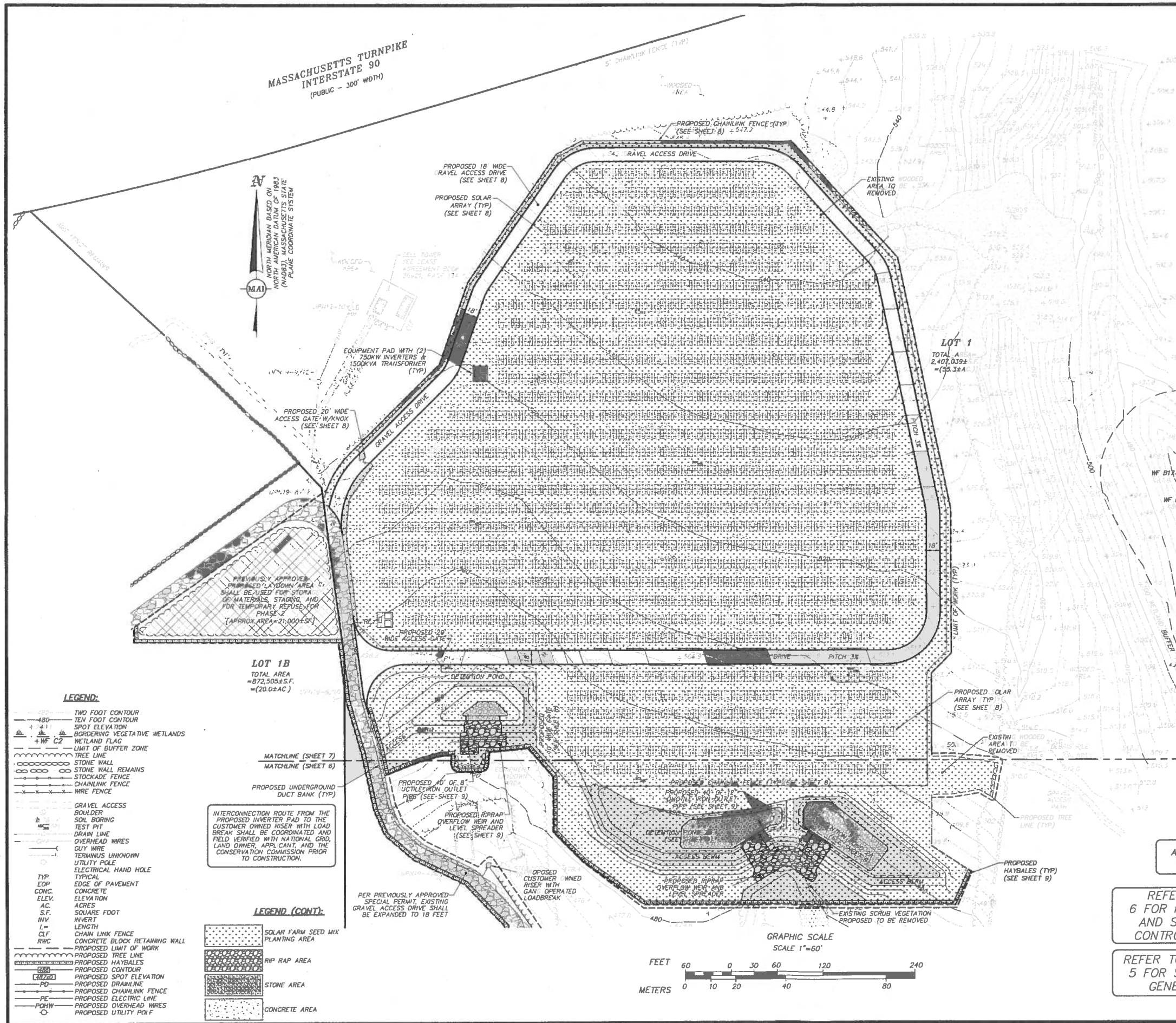

INTERCONNECTION ROUTE FROM THE PROPOSED INVERTER PAD TO THE CUSTOMER OWNED RISER WITH LOAD BREAK SHALL BE COORDINATED AND FIELD VERIFIED WITH NATIONAL GRID, LAND OWNER, APPLICANT, AND THE CONSERVATION COMMISSION PRIOR TO CONSTRUCTION.

GENERAL SEQUENCE OF CONSTRUCTION:

1. CONTACT DIGSAFE (888.344.7233) AND OBTAIN CLEARANCE AT LEAST 72 HOURS BEFORE INITIATING ANY EXCAVATION OUTSIDE THE LIMIT OF WASTE.
2. ESTABLISH EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DISTURBANCE AND MAINTAIN THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH LOCAL REQUIREMENTS. PERFORM INSPECTIONS, REPAIR IF NECESSARY, AND DOCUMENT AFTER EACH PRECIPITATION EVENT OF 0.5-INCHES OR GREATER.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD AT ESTABROOK AVENUE. THE PAD SHALL CONSIST OF 1.5"–2" COARSE AGGREGATE WITH MINIMUM DIMENSIONS OF 50' (LENGTH) x 15' (WIDTH) x 6" (DEPTH) AND SET ON GEOTEXTILE FABRIC TO STABILIZE FOUNDATION (ESPECIALLY IMPORTANT WHERE WETNESS IS ANTICIPATED).
4. SITE PREPARATION SHALL INCLUDE CLEARING, GRUBBING AND REMOVAL OF EXISTING VEGETATION AND DEBRIS. ALL TREES, STUMPS, BRUSH, SHRUBS, ROOTS, GRASS, WEEDS, RUBBISH, STONES LARGER THAN 2-IN. IN THE LARGEST DIAMETER AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF FROM AREAS TO BE FILLED AND COMPACTED. AREAS OUTSIDE OF THE LIMITS OF WORK SHALL BE PROTECTED FROM DAMAGE AND NO EQUIPMENT OR MATERIALS SHALL BE STORED IN THESE AREAS. NO STUMPS, TREES, LIMBS, OR BRUSH SHALL BE BURIED IN ANY FILLS OR EMBANKMENTS.
5. CONSTRUCT GRAVEL ACCESS DRIVE AS DEPICTED ON THE SITE PLAN AND CONNECT TO THE PREVIOUSLY APPROVED GRAVEL ACCESS DRIVE.
6. CONSTRUCT ALL DETENTION BASINS AND ASSOCIATED STORMWATER MANAGEMENT IMPROVEMENTS (SHOWN ON PLANS).
7. REPAIR UNEVEN AREAS WITHIN LIMITS OF THE SOLAR DEVELOPMENT, AS NECESSARY TO CREATE A UNIFORM GROUND SURFACE. GENERAL TOLERANCE FOR ALLOWABLE GROUND SLOPE IS TWO FOOT VERTICAL CHANGE OVER A 20 FOOT HORIZONTAL RUN [NOTE THAT THIS REFERS TO THE ALLOWABLE LONGITUDINAL SLOPE (I.E., ALONG THE CONTOUR) AND NOT THE INCLINATION OF THE EXPOSURE (I.E., PERPENDICULAR TO THE CONTOUR)].

   UPON SIGNS OF CONCENTRATED FLOW BY EVIDENCE OF GULLYING OR RILLING IN DISTURBED AREAS, HAYBALES SHALL BE PLACED IN THESE AREAS, SPACED EVERY 50' IN THE UPGRADIENT SLOPE.
8. ESTABLISH A TEMPORARY CONSTRUCTION SUPPORT AREA AND MATERIAL STAGING AREA AT THE WEST SIDE OF THE ARRAY AS DEPICTED ON THE PLANS PRIOR TO THE DELIVERY OF MODULAR UNITS.
9. RECEIVE AND STAGE MATERIALS. RE-LOCATE COMPONENTS (E.G., CONDUIT, WIRING AND POSTS) TO SOLAR DEVELOPMENT AREA AS THEY ARE REQUIRED.
10. MOUNT THE PV PANELS ON FRAME AT THE SPECIFIED ORIENTATION AND EXPOSURE (TYPICALLY A 25 DEGREE ORIENTATION FROM LEVEL IN A SOUTH FACING DIRECTION) AND ADJUST AS NECESSARY.
11. ALL DISTURBED AREAS WITHIN THE SOLAR ARRAY AREA SHALL BE RE-ESTABLISHED WITH "SOLAR FARM SEED MIX" (SEE NOTES ON SHEET 6).
12. RUN UNDERGROUND ELECTRICAL CONDUIT TO PV FRAMES AND INSTALL PANEL WIRING. (LOCATION TO BE PROVIDED BY PROJECT MEP PRIOR TO CONSTRUCTION)
13. INSTALL PV COMBINER BOXES WITH FLEXIBLE CONNECTIONS TO CONNECT PV PANELS TO CONDUIT. (LOCATION TO BE PROVIDED BY PROJECT MEP PRIOR TO CONSTRUCTION)
14. CONSTRUCT CONCRETE PADS. INSTALL AND CONNECT GROUND MOUNTED INVERTER/TRANSFORMER STATIONS. A DISCONNECT LOCATION WILL BE ON THE OUTSIDE ON THE NARROWEST SIDE OF THE PLATFORM.
15. CONSTRUCT ALL 6' HIGH CHAIN LINK FENCE AND GATES (SHOWN ON PLAN) WITH KNOX BOXES.
16. INSTALL OVERHEAD POLES (SHOWN ON PLAN) AT INTERCONNECTION POINT. INSTALL WIRING. INSTALL MASTER SHUTOFF ON RISER WITH GANG-OPERATED LOADBREAK.
17. OBTAIN CERTIFICATE OF COMPLIANCE FROM CONSERVATION COMMISSION AND REMOVE ALL HAYBALES FROM THE SITE.

LEGEND:

- TWO FOOT CONTOUR
- 480 TEN FOOT CONTOUR
- SPOT ELEVATION
- BORDERING VEGETATIVE WETLANDS
- WF C2 WETLAND FLAG
- LIMIT OF BUFFER ZONE
- TREE LINE
- STONE WALL
- STONE WALL REMAINS
- STOCKADE FENCE
- CHAINLINK FENCE
- WIRE FENCE
- GRAVEL ACCESS
- BOULDER
- SOIL BORING
- TEST PIT
- DRAIN LINE
- OVERHEAD WIRES
- GUY WIRE
- TERMINUS UNKNOWN
- UTILITY POLE
- ELECTRICAL HAND HOLE
- TYP TYPICAL
- EOP EDGE OF PAVEMENT
- CONC. CONCRETE
- ELEV. ELEVATION
- AC. ACRES
- S.F. SQUARE FOOT
- INV INVERT
- L= LENGTH
- CLF CHAIN LINK FENCE
- RWC CONCRETE BLOCK RETAINING WALL
- PROPOSED LIMIT OF WORK
- PROPOSED TREE LINE
- PROPOSED HAYBALES
- 488 PROPOSED CONTOUR
- 487.01 PROPOSED SPOT ELEVATION
- PD PROPOSED DRAINLINE
- PROPOSED CHAINLINK FENCE
- PE PROPOSED ELECTRIC LINE
- POHW PROPOSED OVERHEAD WIRES
- PROPOSED UTILITY POLE

LEGEND (CONT):

- SOLAR FARM SEED MIX PLANTING AREA
- RIP RAP AREA
- STONE AREA
- CONCRETE AREA

APPROXIMATE NET FILL =60± CUBIC YARDS

REFER TO SHEET 6 FOR NOTES EROSION AND SEDIMENTATION CONTROL SITE NOTES

REFER TO SHEET 4 AND 5 FOR SITE PLAN AND GENERAL NOTES

APPROVED BY: GRAFTON PLANNING BOARD

DATE.

REVISIONS			
DATE	DESCRIPTION	BY	

COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER No. 34776 8.1.14

EROSION CONTROL PLAN 2

LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950
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69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A.CHRISTIE
CHECKED BY: R.WATT

DATE: AUGUST 1, 2014
SCALE: 1"=60'
SHEET No. 7 OF 9
PROJECT No. 5650

DWG. No. 5650-ECP

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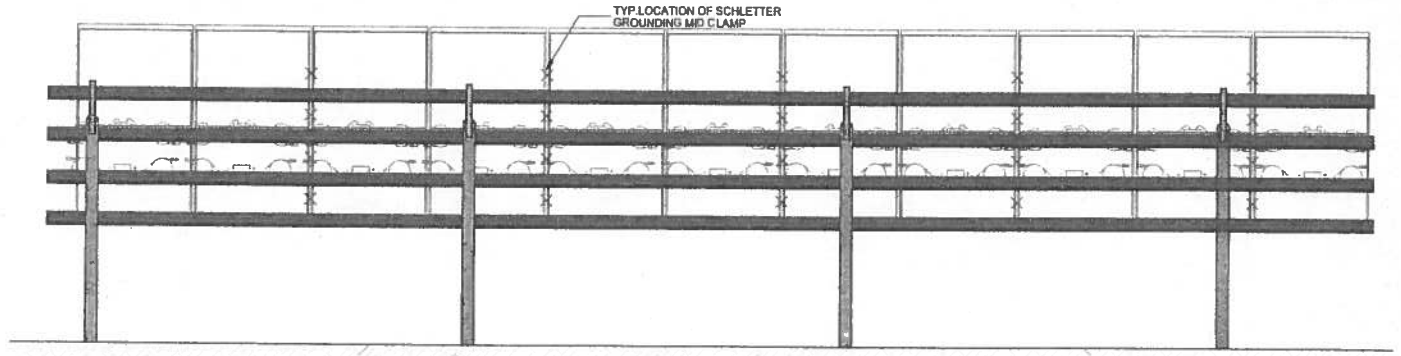
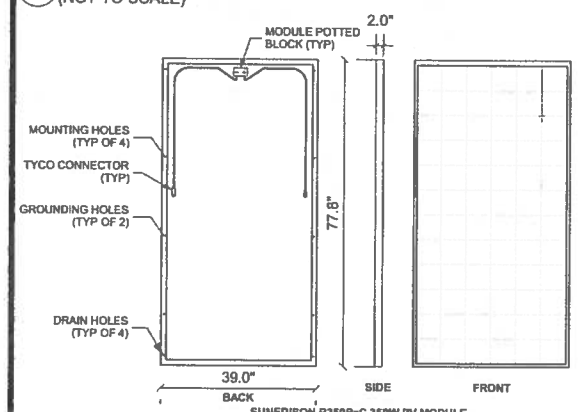


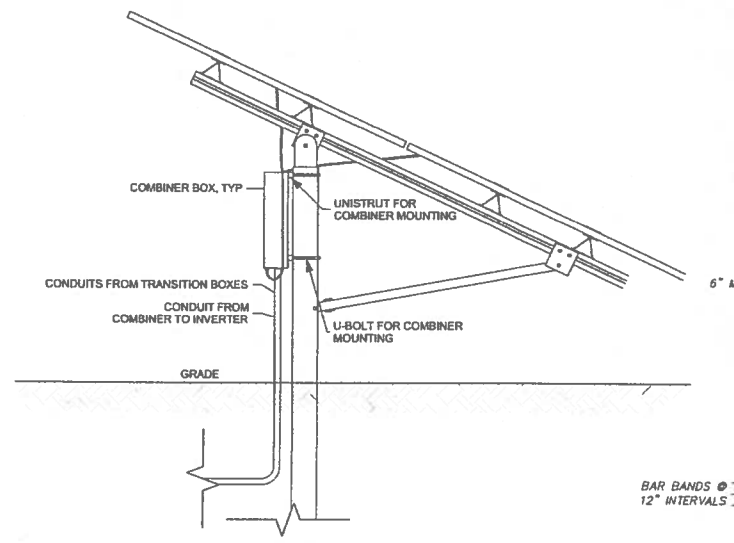
NORTH ELEVATION OF SCHLETTER 2X11 FS MOUNTING SYSTEM, OR APPROVED EQUAL
(NOT TO SCALE)



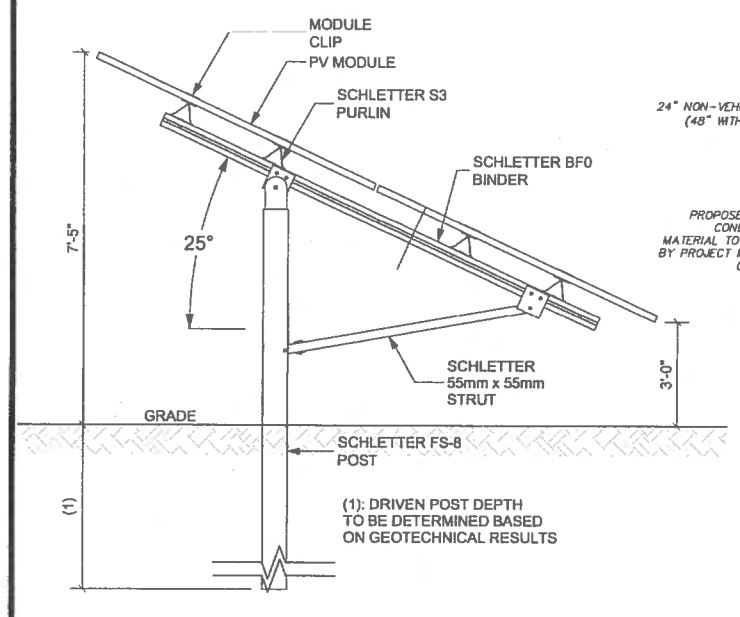
SUNEDISON R350BzC 350W PV MODULE RATED ELECTRICAL SPECIFICATIONS (@ STC)

MAXIMUM POWER (Pmax)	350 Wdc
Pmax TOLERANCE	+3% / -0%
VOLTAGE AT Pmax	48.7 Vdc
CURRENT AT Pmax	9.56 Adc
OPEN-CIRCUIT VOLTAGE (Voc)	43.1 Vdc
SHORT-CIRCUIT CURRENT (Isc)	7.80 Adc
MAXIMUM SYSTEM VOLTAGE	1000 Vdc
SERIES FUSE RATING	15 Adc
WEIGHT	48.5 LBS

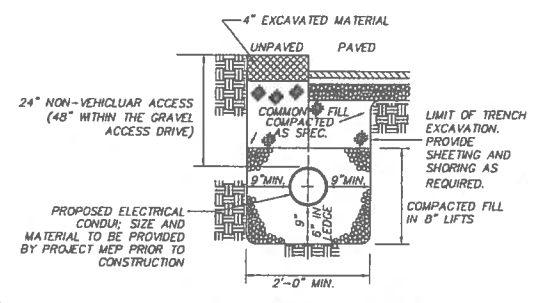
SUNEDISON 350W PV MODULE, OR APPROVED EQUAL
(NOT TO SCALE)



RACK SECTION WITH COMBINER, TYP
(NOT TO SCALE)



SECTION VIEW OF SCHLETTER RACK, OR APPROVED EQUAL
(NOT TO SCALE)



TYPICAL CONDUIT TRENCH DETAIL
(NOT TO SCALE)

FILL SPECIFICATION

FINE AGGREGATE SHALL CONSIST OF HARD, DURABLE SAND, FRE OF CLAY, ORGANIC MATTER, SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE No. 200 SIEVE (THE FINES) SHALL BE NONPLASTIC. FINE AGGREGATE FILL SHALL CONFORM TO THE REQUIREMENTS OF THE 1988 MASS. HIGHWAY DEPT. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, SECTION M4.02.02A (2010 SUPPLEMENTAL SPECIFICATIONS). FINE AGGREGATE SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
3/8 INCH	100
No. 4	95 – 100
No. 16	45 – 80
No. 50	10 – 30
No. 100	2 – 10
No. 200 (FINES)	0 – 3

FINE AGGREGATE FILL SHALL BE COMPACTED IN MAXIMUM 9-INCH-THICK LOOSE LIFTS TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED AASHTO COMPACTION)

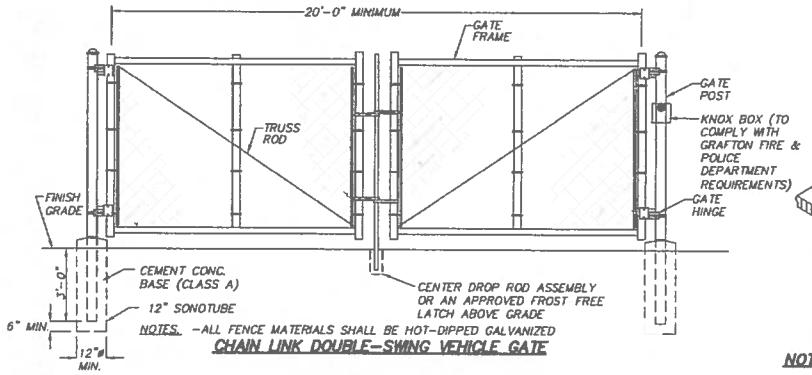
GROUNDING NOTES:

A. GROUND FENCE ENCLOSURES AT DIAGONALLY OPPOSITE CORNERS AND AT INTERVALS NOT EXCEEDING 500 FEET.
B. WHERE AN ELECTRIC UTILITY LINE PASSES OVER THE FENCE, FENCE SHALL BE GROUNDED AT POINTS 50 FEET, MEASURED HORIZONTALLY, BEYOND WHERE THE OUTSIDE CONDUCTORS PASS OVER THE FENCE.
C. WHERE AN ELECTRIC UTILITY LINE RUNS PARALLEL TO AND WITHIN 40 FEET OF THE FENCE, MEASURED HORIZONTALLY, FENCE SHALL BE GROUNDED AT 50 FT. MAXIMUM INTERVALS ALONG THE PARALLEL SECTION OF FENCE.
D. FENCE POST GROUNDING SHALL CONSIST OF THREE GROUNDING CLAMPS, INSTALLED AT THE TOP, MIDDLE AND BOTTOM OF THE POST, CONNECTED TO THE GROUND WIRE.
E. FENCE GROUNDING SHALL CONSIST OF CONDUCTORS SECURED TO THE FENCE WITH COMPRESSION CONNECTORS.

THE NATIONAL ELECTRICAL SAFETY CODE (NESC) RECOMMENDS THAT WHERE FENCES ARE REQUIRED TO BE GROUNDED, SUCH GROUNDING SHALL BE DESIGNED TO LIMIT TOUCH, STEP AND TRANSFERRED VOLTAGES IN ACCORDANCE WITH INDUSTRY PRACTICE.

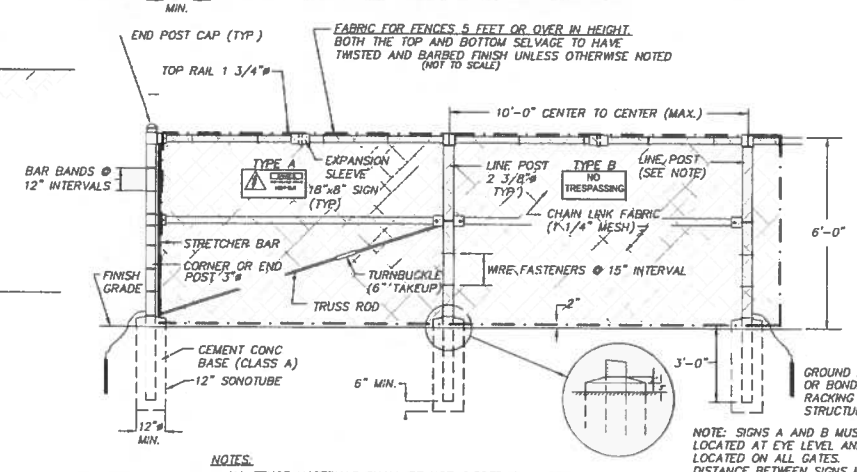
THE NESC REQUIRES THAT THE GROUNDING CONNECTION BE MADE EITHER TO THE GROUNDING SYSTEM OF THE ENCLOSED EQUIPMENT OR TO A SEPARATE GROUND. IN ADDITION, THE NESC IN SECTION 92E, LISTS SIX SEPARATE REQUIREMENTS FOR FENCES:

1. WHERE GATES ARE INSTALLED, THE FENCE SHALL BE GROUNDED AT EACH SIDE OF THE GATE OR SIMILAR OPENING
2. IF A CONDUCTING GATE IS USED, A BURIED BONDING JUMPER MUST BE INSTALLED ACROSS THE OPENING
3. WHERE GATES ARE INSTALLED, THEY SHALL BE BONDED TO THE FENCE, GROUNDING CONDUCTOR OR OTHER BONDING JUMPER
4. IF THE FENCE POSTS CONSIST OF A CONDUCTING MATERIAL, THE GROUNDING CONDUCTOR MUST BE CONNECTED TO THE FENCE POSTS WITH A SUITABLE CONNECTING MEANS
5. IF THE FENCE CONTAINS SECTIONS OF BARBED WIRE, THE BARBED WIRE MUST ALSO BE BONDED TO THE FENCE, GROUNDING CONDUCTOR OR OTHER BONDING JUMPER
6. IF THE FENCE POSTS CONSIST OF A NONCONDUCTING MATERIAL, A BONDING CONNECTION SHALL BE MADE TO THE FENCE MESH STRANDS AND BARBED WIRE STRANDS AT EACH GROUNDING CONDUCTOR POINT.



NOTES: -ALL FENCE MATERIALS SHALL BE HOT-DIPPED GALVANIZED

CHAIN LINK DOUBLE-SWING VEHICLE GATE

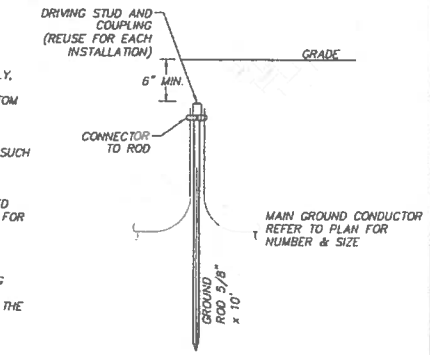


NOTES:
-ALL FENCE MATERIALS SHALL BE HOT-DIPPED GALVANIZED

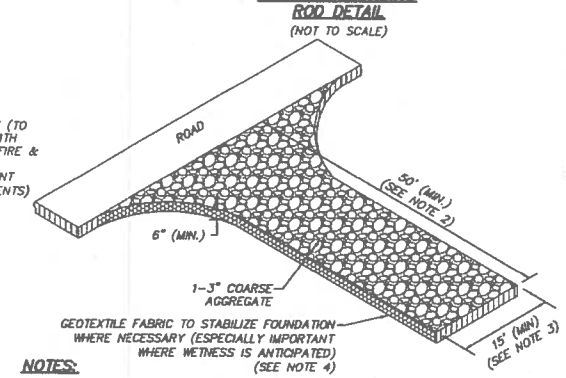
CHAIN LINK FENCE W/ TOPRAIL DETAIL
(NOT TO SCALE)

NOTE: SIGNS A AND B MUST BE LOCATED AT EYE LEVEL AND LOCATED ON ALL GATES. DISTANCE BETWEEN SIGNS MUST NOT EXCEED 50'

AFFIX APPROPRIATE COMPANY OWNER NAME AND CONTACT INFO DECAL TO BOTH SIGNS A AND B.



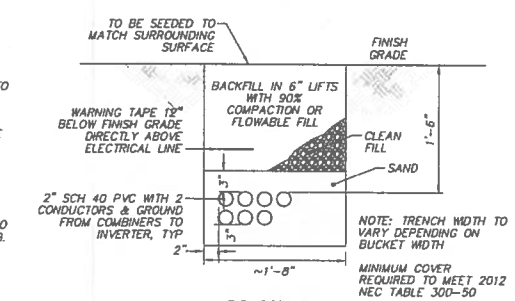
TYPICAL GROUNDING ROD DETAIL
(NOT TO SCALE)



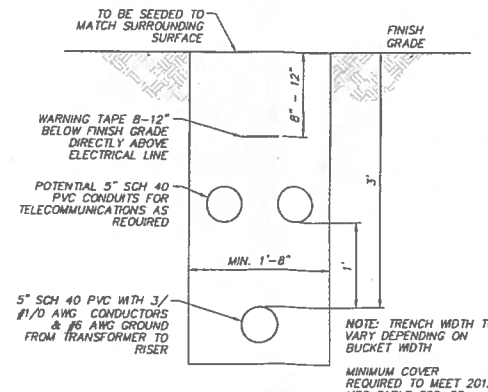
NOTES:

1. THE SOLE PURPOSE OF THIS DETAIL IS TO PROVIDE A STABLE ENTRANCE AND EXIT FROM A CONSTRUCTION SITE AND KEEP MUD AND SEDIMENT OFF PUBLIC ROADS IN ACCORDANCE WITH THE RECOMMENDATIONS STATED IN THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AS PREPARED BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.
2. EXTEND PAD BEYOND 50 FEET FOR HEAVY CONSTRUCTION TRAFFIC AS NECESSARY LONGER ENTRANCES WILL PROVIDE BETTER CLEANING ACTION.
3. THE PAD SHALL EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 10 FEET WHICH EVER IS GREATER.
4. WHERE NECESSARY, GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE FILL AND THE EARTH SURFACE BELOW THE PAD TO REDUCE THE MIGRATION OF SOIL PARTICLES FOR UNDERLYING SOIL INTO THE STONE AND VICE VERSA.

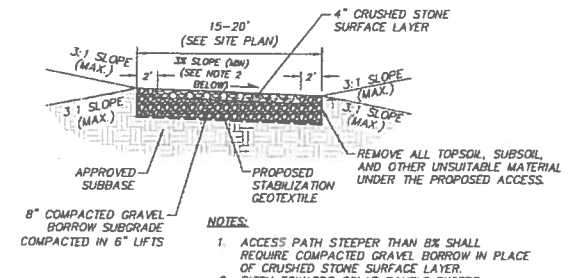
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD
(NOT TO SCALE)



DC CONDUIT TRENCH DETAIL
(NOT TO SCALE)



AC CONDUIT TRENCH DETAIL
(NOT TO SCALE)



NOTES:

1. ACCESS PATH STEEPER THAN 8% SHALL REQUIRE COMPACTED GRAVEL BORROW IN PLACE OF CRUSHED STONE SURFACE LAYER.
2. PITCH TOWARDS SOLAR PANELS EXCEPT ONNORTHERN AND SOUTHERN PORTIONS OF ACESS DRIVE

TYPICAL GRAVEL ACCESS DRIVE CROSS SECTION
(NOT TO SCALE)

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

REVISIONS			
DATE	DESCRIPTION	BY	

SITE DETAIL SHEET 1
LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 256-0447
WWW.MERIDIANASSOC.COM
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030

DESIGNED BY: A.CHRISTIE
CHECKED BY: R.WAITT

DATE: AUGUST 1, 2014
SCALE: AS NOTED
SHEET No. 8 OF 9
PROJECT No. 5650

DWG. No. 5650-DET

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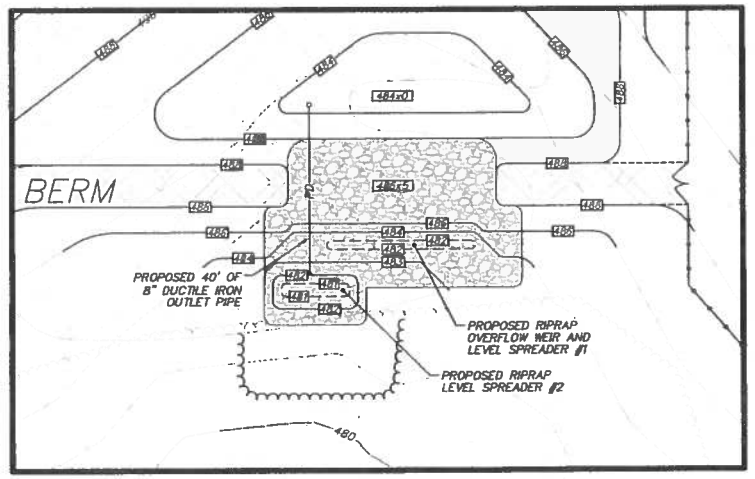
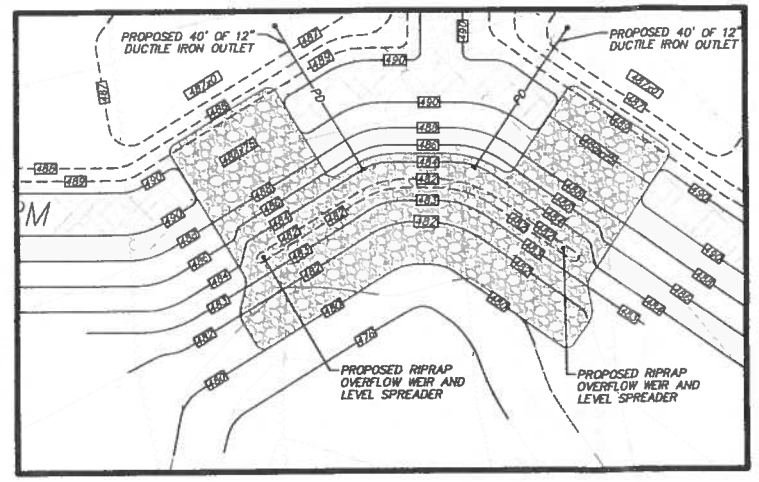


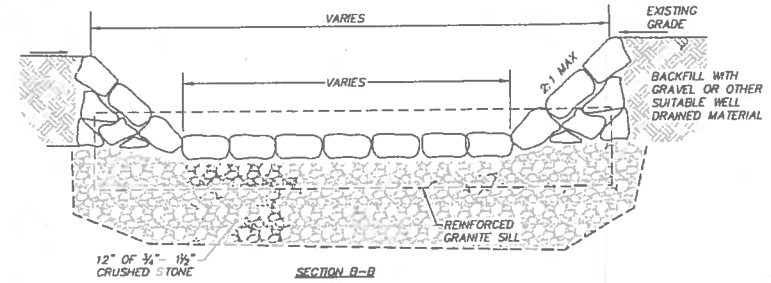
PROPOSED DETENTION POND #1 GRADING DETAIL

GRAPHIC SCALE
SCALE 1"=20'

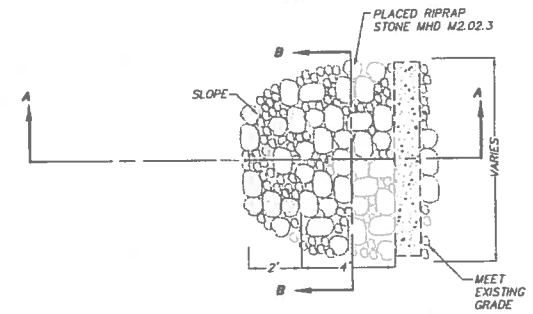


PROPOSED DETENTION POND #2A & 2B GRADING DETAIL

GRAPHIC SCALE
SCALE 1"=20'



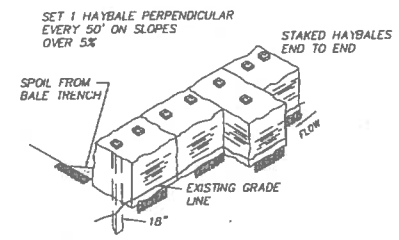
SECTION B-B



PLAN VIEW

TYPICAL LEVEL SPREADER

(NOT TO SCALE)

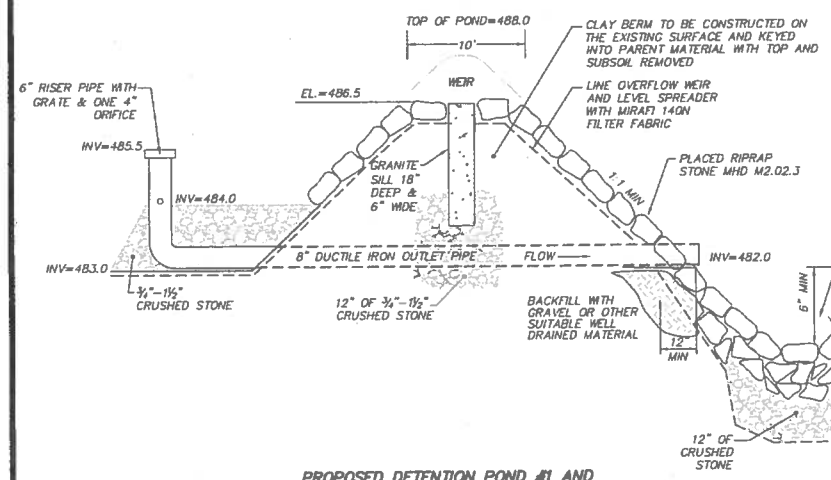


NOTES:

1. BALES TO BE TIED WITH ORGANIC FIBER TWINE ONLY NO PLASTIC OR WIRE.
2. HAYBALES TO BE SECURED WITH A MINIMUM OF TWO (2) 1" x 1" WOODEN STAKES PER BALE DRIVEN 18" MIN. INTO GRADE.

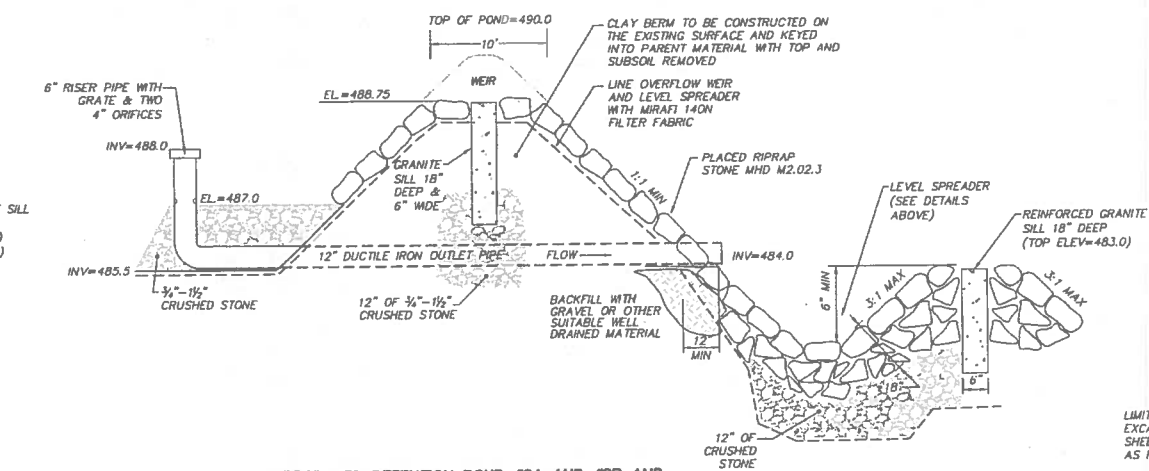
TYPICAL HAYBALE DETAIL

(NOT TO SCALE)



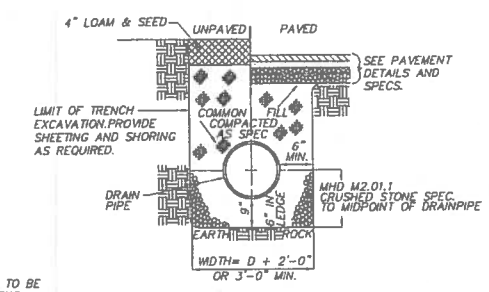
PROPOSED DETENTION POND #1 AND OVERFLOW WEIR WITH LEVEL SPREADER DETAIL

(NOT TO SCALE)



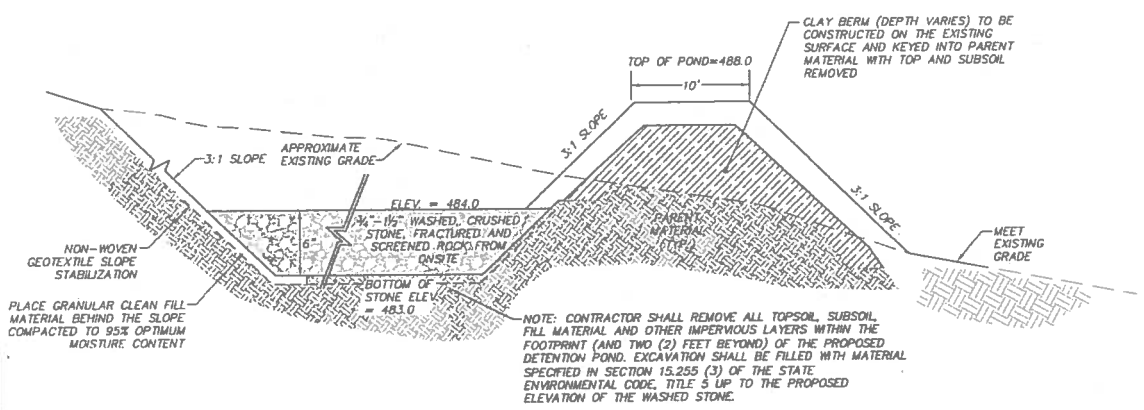
PROPOSED DETENTION POND #2A AND #2B AND OVERFLOW WEIR WITH LEVEL SPREADER DETAIL

(NOT TO SCALE)



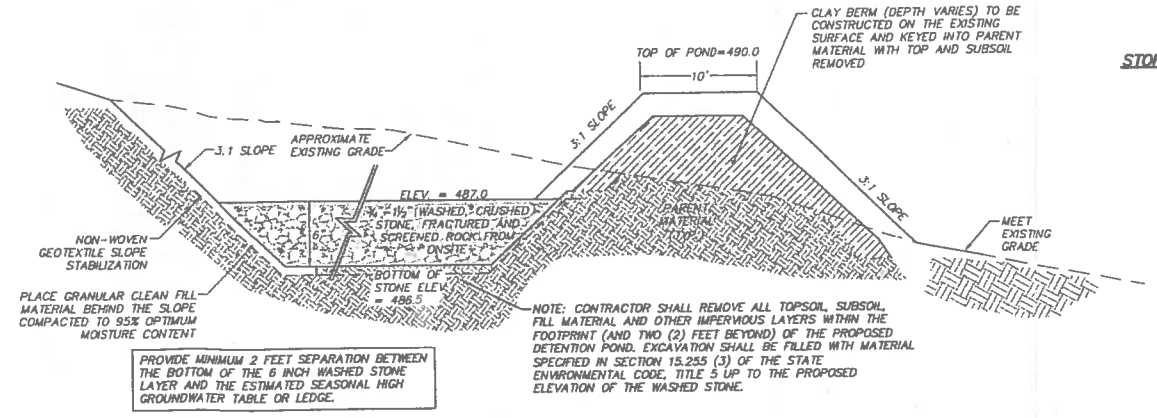
STORM DRAIN TRENCH DETAIL

(NOT TO SCALE)



PROPOSED DETENTION POND #1

(NOT TO SCALE)



PROVIDE MINIMUM 2 FEET SEPARATION BETWEEN THE BOTTOM OF THE 6 INCH WASHED STONE LAYER AND THE ESTIMATED SEASONAL HIGH GROUNDWATER TABLE OR LEDGE.

PROPOSED DETENTION POND #2A AND #2B

(NOT TO SCALE)

APPROVED BY:
GRAFTON PLANNING BOARD

DATE:

DWG. No. 5650-DET

REVISIONS

DATE	DESCRIPTION	BY

REGISTERED PROFESSIONAL ENGINEER
CIVIL
No. 34779
8.1.14

SITE DETAIL SHEET 2

LOCATED IN
GRAFTON, MASSACHUSETTS
(WORCESTER COUNTY)
PREPARED FOR
BLUEWAVE CAPITAL, LLC

MERIDIAN ASSOCIATES
501 CUMMINGS CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0447
69 MILK STREET, SUITE 302
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

DESIGNED BY: A. CHRISTIE
CHECKED BY: R. WAITT

DATE: AUGUST 1, 2014
SCALE: AS NOTED
SHEET No. 9 OF 9
PROJECT No. 5650

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