

MAJOR SITE PLAN & SPECIAL PERMIT LARGE SCALE SOLAR ARRAY

PARCEL NUMBER 35-0-12

GREENWICH ROAD

TOWN OF WARE

COUNTY OF HAMPSHIRE, MASSACHUSETTS

TOWN OF WARE

ZONE - RR
AREA - 60,000 S.F.
FRONTAGE - 150'
FRONT - 25 FT. (SOLAR)
SIDE - 25 FT. (SOLAR)
REAR - 25 FT. (SOLAR)
50 FT. MIN BUFFER TO RESIDENTIAL USE

RECORD PARCELS (ASSESSORS)

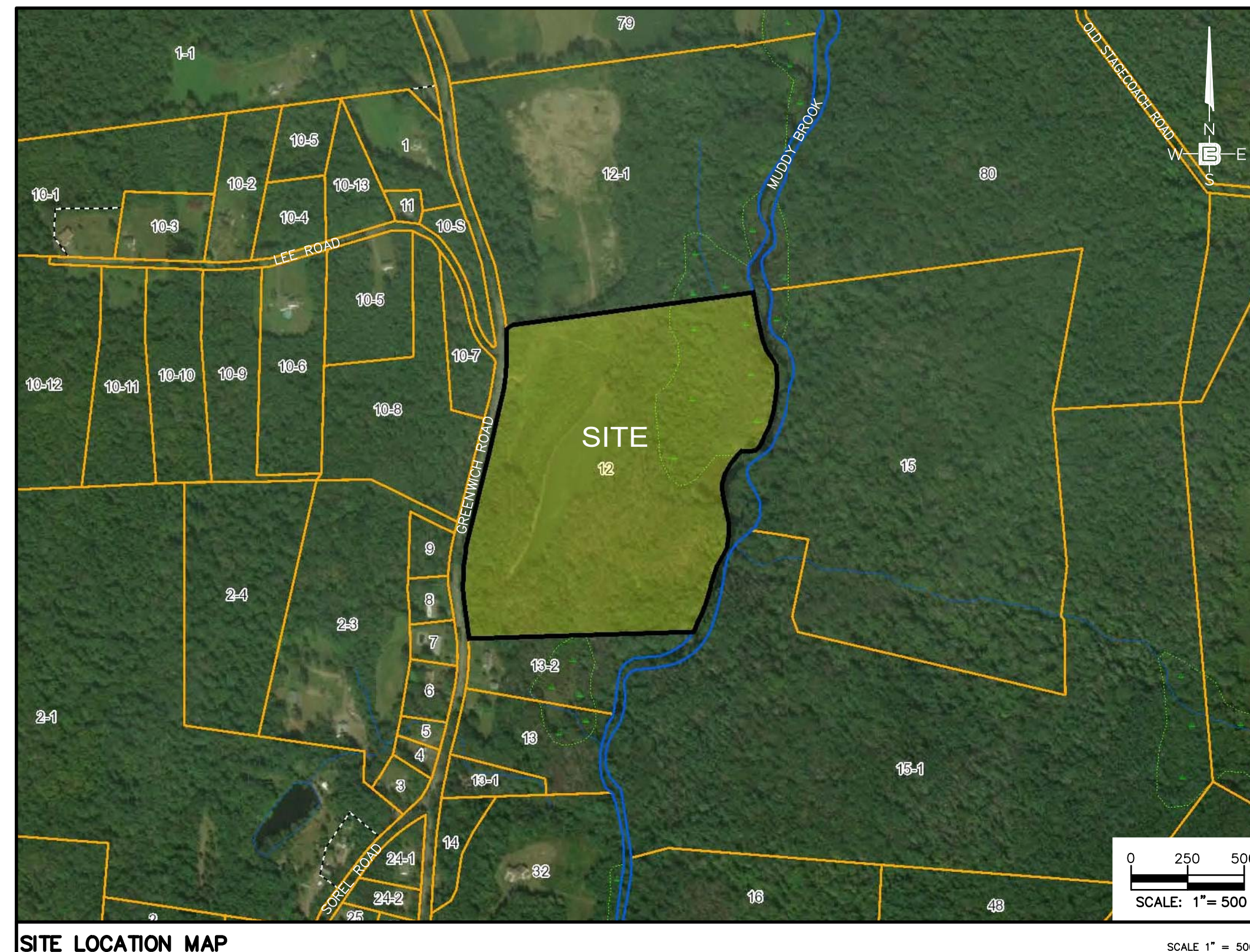
WARE 35-0-12

RECORD OWNERS

F.T. SMITH TRUCKING AND EXCAVATING
PO BOX 124
NEW BRAintree, MA
DB.8579 PG.277

DEVELOPER/APPLICANT

WARE SOLAR III LLC
MELINK SOLAR DEVELOPMENT
276 N. FOREST AVE. NE
MARIETTA, GA 30060



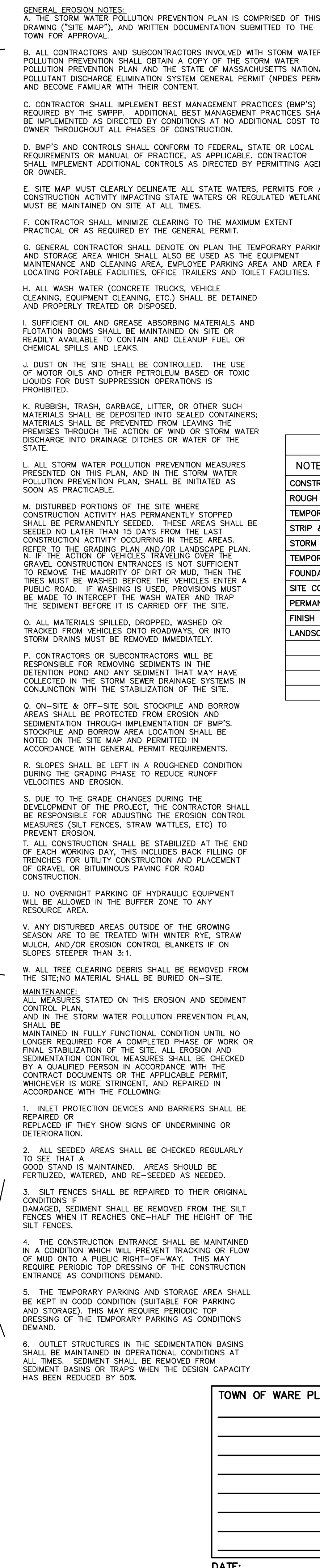
DRAWING LIST			
DWG. #	DRAWING TITLE	DATED / LAST REVISED	REV. #
C1.1	COVER SHEET	04-16-21	3
C1.2	EXISTING CONDITIONS PLAN	04-16-21	2
C2.1	SOIL EROSION & SEDIMENT CONTROL PLAN	04-16-21	3
C2.2	SITE PLAN	04-16-21	3
C2.3	GRADING & DRAINAGE PLAN (SECTION 1)	04-16-21	3
C2.4	GRADING & DRAINAGE PLAN (SECTION 2)	04-16-21	3
C2.5	VEHICLE CIRCULATION PLAN	10-21-19	0
C2.6	RIVERFRONT DISTURBANCE PLAN	04-16-21	0
C3.1	SITE & DRAINAGE DETAILS	10-28-19	1
C3.2	SITE DETAILS - 2	10-21-19	0
C3.3	SOIL EROSION & SEDIMENT CONTROL AND LANDSCAPE DETAILS	04-16-21	2

[illegible]

DATE: _____

[illegible]





NOTE: PRIOR TO ANY WORK TAKING PLACE

1. A PRE-CONSTRUCTION MEETING SHOULD BE SCHEDULED BETWEEN BERTIN ENGINEERING AND CONSTRUCTION MANAGER. ALL ASPECTS OF EROSION CONTROLS AND CONSTRUCTION OF PROJECT ARE TO BE DISCUSSED
2. SLOTTED AND SILTATION FENCE TO BE INSTALLED. INSTALL STABILIZED CONSTRUCTION ENTRANCE (SITE TRACKING PAD)
3. INSPECTIONS WILL BE CONDUCTED WEEKLY AND AFTER 0.5 INCH RAIN. COPIES OF WEEKLY REPORTS AND RAIN EVENT REPORTS SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION WITHIN SEVEN DAYS OF THE INSPECTION.

ACREAGE SUMMARY IN ACRES	
SEEDED AREA	11.29 AC±
TOTAL DISTURBED	15.12 AC±

CONTRACTOR TO LOCATE TEMPORARY SEDIMENTATION BASINS TO PREVENT SEDIMENT FROM LEAVING THE LIMIT OF WORK. TEMPORARY SEDIMENTATION BASINS ARE TO BE INSTALLED IN LOCATIONS UPSTREAM OF ANY EROSION CONTROL BARRIERS WHERE EXCESS SEDIMENT IS OBSERVED. DURING THE CONSTRUCTION PROCESS, REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT ACCUMULATES TO ONE-HALF DESIGN VOLUME. REMOVE BASIN AFTER DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, INSPECTED, AND APPROVED. BEFORE REMOVING DAM, DRAIN WATER AND REMOVE SEDIMENT; PLACE WASTE MATERIAL IN DESIGNATED DISPOSAL AREA. SMOOTH SITE TO BLEND WITH SURROUNDING AREA AND STABILIZE. TEMPORARY SEDIMENTATION BASINS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS.

DESIGN RECOMMENDATIONS:

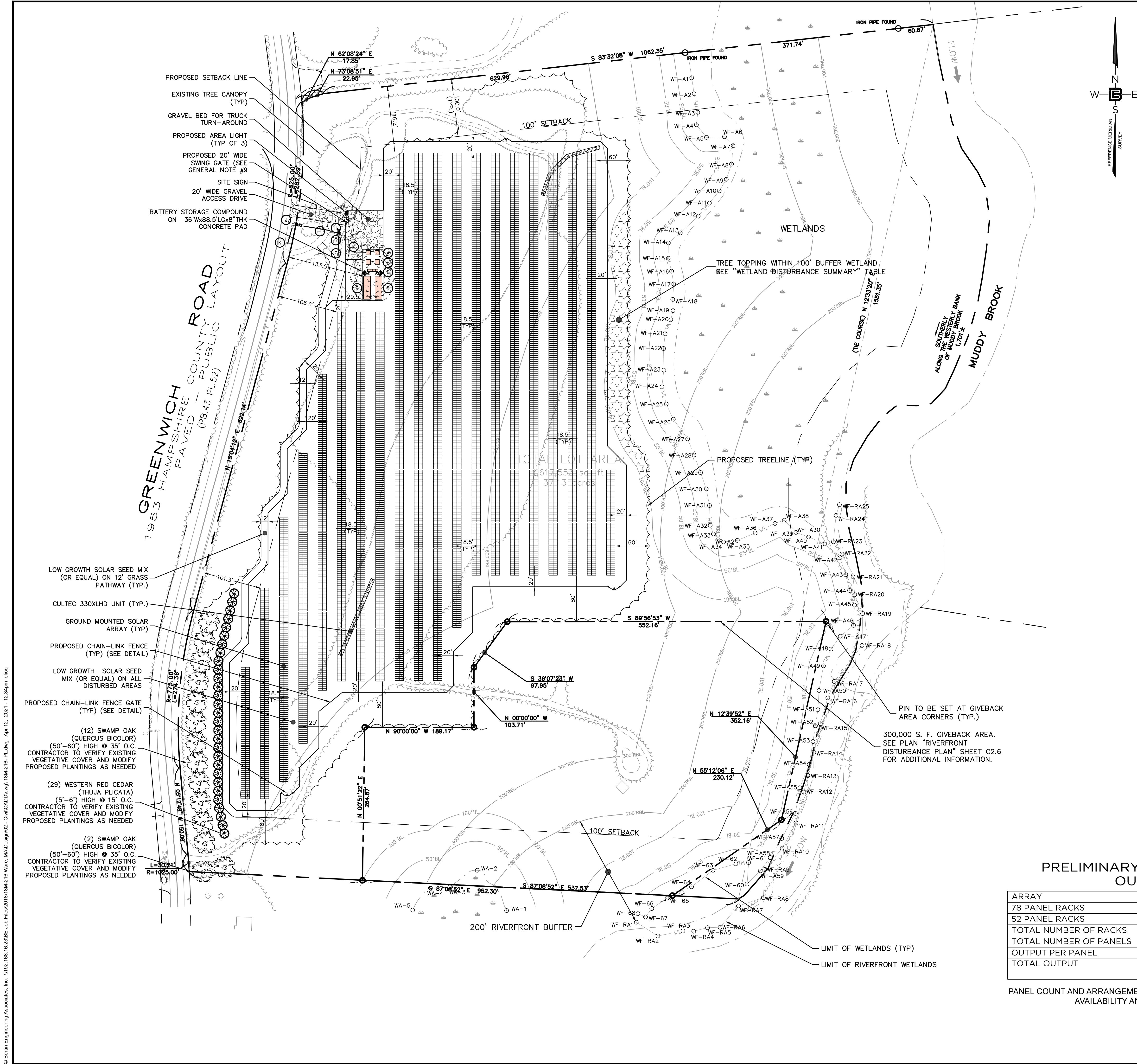
- DRAINAGE AREA NOT MORE THAN 100 ACRES.
- THE SEDIMENT BASIN SHOULD HAVE A MINIMUM VOLUME BASED ON 1 INCH OF STORAGE FOR EACH ACRE OF DRAINAGE AREA. THIS VOLUME EQUATES TO 1800 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA. LENGTH-TO-WIDTH RATIO SHOULD BE 2:1 OR GREATER; DIVERT INFLOW TO UPPER END OF BASIN TO AVOID SHORT-CIRCUITING FLOW. LENGTH IS DEFINED AS THE AVERAGE DISTANCE FROM THE INLET TO THE OUTLET OF THE TRAP. BAFFLES TO SPREAD THE FLOW THROUGHOUT THE BASIN SHOULD BE INCLUDED.
- KEEP SEDIMENT POOL DEWATERED BETWEEN STORMS.
- CONSTRUCT SIDE SLOPES 2:1 OR FLATTER IN POOL AREA. PLACE 6" BARREL AND RISER ON FIRM, EVEN FOUNDATION.
- INSTALL ANTI-SLEEP COLLARS SLIGHTLY AROUND PIPE. COVER PIPE TO A DEPTH OF 2 FEET MINIMUM OF HAND-COMPACTED BACKFILL BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. INSTALL TRASH GUARD WITH BARS SPACED 2-3 INCHES APART. INSTALL SPRAY APRON AT PIPE OUTLET, WIDTH 5 FT MINIMUM. EXTEND APRON TO STABLE GRADE (LENGTH 10 FT MINIMUM). USE WELL-GRADED STONE WITH D50 OF 19 INCHES MINIMUM.

39 ELM STREET
SOUTHBRIDGE, MA 01550
P 508.765.0195
F 508.765.0193
www.bertineengineering.com

MECHANICAL • LANDSCAPE

THE EXCLUSIVE USE BY THE CLIENT/REUSE ASSOCIATES, INC. IS PROHIBITED.

20



GENERAL NOTES

- ALL FEATURES ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED. PROPOSED FEATURES AS SHOWN IN FULL TONE. EXISTING FEATURES ARE SHOWN IN HALF TONE. EXISTING FEATURES TO BE REMOVED ARE SHOWN AS DASHED, OR ARE NOTED.
- LOCATION OF ALL UNDERGROUND UTILITIES IS APPROXIMATE AND SHOULD BE VERIFIED BEFORE EXCAVATION OR CONSTRUCTION BEGINS. CALL DIG SAFE SYSTEM, INC.: 811 OR 1-888-344-7233.
- UNLESS OTHERWISE NOTED, MAINTAIN EXISTING YARD GRADES AND SLOPES.
- ALL UTILITY CONNECTIONS ARE TO BE IN ACCORDANCE WITH LOCAL CODE.
- THE SITE PLAN(S) SUPERSEDES ALL STANDARD DRAWINGS.
- ALL WETLANDS DELINEATED BY ECOTEC INC. IN SEPTEMBER 2019.
- THE FENCING WILL INCORPORATE A DESIGN OF THE EPC'S CHOOSING THAT WILL FACILITATE WILDLIFE MOVEMENT ACROSS THE PROPERTY.
- ALL GATES TO BE INSTALLED WITH KNOX BOX AND SIGNAGE WITH EMERGENCY CONTACT INFORMATION SUBJECT TO NATIONAL GRID FINAL DESIGN AND CONSTRUCTION. KNOX BOX KEY TO BE GIVEN TO LOCAL FIRE DEPARTMENT.
- NO PESTICIDES OR HERBICIDES ARE TO BE USED DURING CONSTRUCTION OR MAINTENANCE.
- ROADWAY ALIGNMENT CAN BE ALTERED IF FIELD CONDITIONS ARE UNSUITABLE. ENGINEER'S APPROVAL REQUIRED PRIOR TO ALTERATION.

BATTERY STORAGE COMPOUND EQUIPMENT LEGEND

- (A) (2) MV TRANSFORMERS
- (B) (2) INVERTERS WITH RECOMBINERS
- (C) (5) AC/DC CONVERTER
- (D) (2) 12"x40" BATTERY STORAGE CONTAINER
- (E) UNDERGROUND ELECTRIC FROM EQUIPMENT TO UTILITY POLE

SYMBOL KEY OF PROPOSED ELECTRICAL EQUIPMENT

- (K) UTILITY OWNED JUNCTION POLE/POINT OF INTERCONNECTION ON ASH STREET
- (J) UTILITY OWNED GOAB POLE
- (I) UTILITY OWNED RECLOSER POLE
- (H) POINT OF COMMON COUPLING/BI-DIRECTIONAL METER POLE
- (G) CUSTOMER OWNED GOAB POLE WITH 200A FUSED CUT-OUTS
- (F) CUSTOMER OWNED RISER AND RECLOSER POLE DOWN BOX

SOLAR FIELD SEED MIX

30%	BEACON HARD FESCUE	7-9"
30%	CHAROIT HARD FESCUE	7-9"
20%	MATTERHORN HARD FESCUE	7-9"
10%	HIGHLAND COLONIAL BENTGRASS	6-8"
10%	SHARK CREEPING BENTGRASS	6-8"

SEEDING RATE 150 LBS PER ACRE
HEIGHT 6-9"

WETLAND BUFFER	WETLAND DISTURBANCE SUMMARY			
	BUFFER DISTURBANCE WITHIN FENCE LINE		TREE TOPPING WITHIN BUFFER	
	SQUARE FEET	ACRES	SQUARE FEET	ACRES
25' BUFFER LINE	0	0	0	0
50' BUFFER LINE	0	0	0	0
100' BUFFER LINE	395	0.009	15,745	0.361

LIGHTING SCHEDULE

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/HALLIST	ULF	QTY
A1	(Symbol)	LS INDUSTRIES (1) XGBM-FT-LED-SS-NW	(1) LEDs	17994	12 FT, 4000K Neutral White LEDs Forward Throw Distribution	0.85	1
A2	(Symbol)	LS INDUSTRIES (2) XGBM-FT-LED-SS-NW-HSS	(2) LEDs	13314	12 FT, 4000K Neutral White LEDs Forward Throw Distribution with House Side Shields	0.85	2

LEGEND

- WETLAND FLAG
- WL— WETLANDS BOUNDARY LINE
- 50'BL— 50 FT WETLANDS BUFFER LINE
- 100'BL— 100 FT WETLANDS BUFFER LINE
- 200'RBL— 200 FT RIVERFRONT BUFFER LINE
- 300'RBL— 300 FT RIVERFRONT BUFFER LINE
- 600'RBL— 600 FT RIVERFRONT BUFFER LINE
- (Grid Symbol) SOLAR PANELS
- (Gravel Symbol) GRAVEL DRIVE
- A— 5.0 FOOTCANDLE LINE
- B— 1.0 FOOTCANDLE LINE
- C— 0.5 FOOTCANDLE LINE

PRELIMINARY SOLAR PANEL OUTPUT

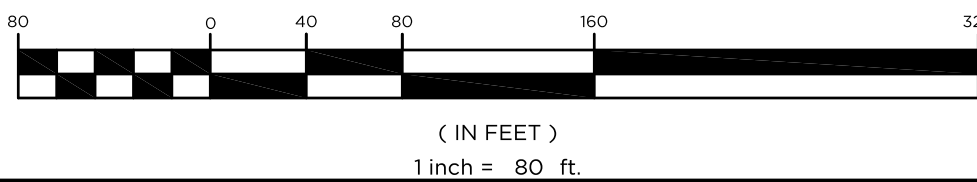
ARRAY	TOTAL
78 PANEL RACKS	76
52 PANEL RACKS	27
TOTAL NUMBER OF RACKS	103
TOTAL NUMBER OF PANELS	(78x76) + (52x27) = 7,332
OUTPUT PER PANEL	440W
TOTAL OUTPUT	440W x 7,332 = 3,226,080 W (3.23 MW)

PANEL COUNT AND ARRANGEMENT SUBJECT TO CHANGE BASED ON AVAILABILITY AND MANUFACTURER

TOWN OF WARE PLANNING BOARD

DATE:

GRAPHIC SCALE



39 ELM STREET
SOUTHBURIDGE, MA 01550
P 508.765.0195
F 508.765.0195
www.bertinengineering.com

BERTIN
ENGINEERING

CIVIL • SURVEYING • TRAFFIC • STRUCTURAL • ENVIRONMENTAL • MECHANICAL • LANDSCAPE

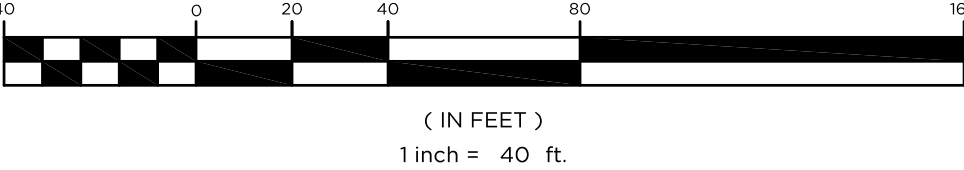
CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER
CT LIC. NO. 12950 NJ LIC. NO. 28845
MA LIC. NO. 40595 NY LIC. NO. 60022
NH LIC. NO. 9368 RI LIC. NO. 6694

3	18-16-21	OVERALL SITE LAYOUT REVISION	E.G.	
2	03-05-20	LANDSCAPING ALONG GREENWICH ROAD AND INFILTRATION TRENCH REVISION	E.G.	
1	10-28-19	REVISED SOLAR PANEL LAYOUT ALONG FENCE LINE AND FENCE LINE THROUGHOUT SITE. ADDITION OF WETLAND DISTURBANCE SUMMARY TABLE AND ADDITION OF LANDSCAPING ALONG DISTURBED LOTION.	E.G.	
NO.	DATE	REVISION		

DRAWING TITLE
SITE PLAN

PROJECT
LARGE SCALE
SOLAR ARRAY
PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS
CLIENT
WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060
CERTIFICATE OF AUTHORIZATION
24GA28068900 / 21MH00002800
DRAWN BY: E.G. CHECKED BY: C.J.B.
SCALE: 1" = 80' PROJECT NO: 18M-216
DATE: 10-21-19 REVISION NO: 3
DRAWING NO:

C2.2















TEST PIT DATA


TEST PIT# PERFORMED BY JTC INC. ON SEPTEMBER 20, 2019

B-3
NO GROUNDWATER OR MOTTLING ENCOUNTERED
TEXTURES:
COARSE TO FINE SAND, LITTLE GRAVEL, SILT TRACES, OCCASIONAL COBBLES AND
MEDIUM TO FINE SAND, MEDIUM DENSE TO VERY DENSE, DRY: 0-2 FEET;
GLACIAL TILL: 2-11 FEET;

B-4
NO GROUNDWATER OR MOTTLING ENCOUNTERED
TEXTURES:
FRESH MAT: 0-4 INCHES;
MEDIUM TO FINE SAND, SOME SILT WITH ROOTS: 0-2 FEET;
MEDIUM TO FINE SAND, OCCASIONAL COBBLES AND BOULDERS, MEDIUM DENSE TO VERY
DENSE: 2-4 FEET;
GLACIAL TILL: 5-12 FEET;

LEGEND			
CB	CATCH BASIN		IRON PIPE
UP	UTILITY POLE		DRILL HOLE
IR	REBAR		REBAR SET
DH	DRILL HOLE		BOUND SYMBOL
IP	IRON PIPE		UTILITY POLE
FND	FOUND		STONE WALL
BND	BOUND		WELL
AP:	ASSESSORS PARCEL		BENCH MARK
HYD.	HYDRANT		HYDRANT
GUY	GUY WIRE		GUY WIRE
	STUMP WITH WIRE		TREE WITH WIRE

WETLANDS LEGEND

	WETLAND FLAG
—WL—	WETLANDS BOUNDARY LINE
—50'BL—	50 FT WETLANDS BUFFER LINE
—100'BL—	100 FT WETLANDS BUFFER LINE
—200'RBL—	200 FT RIVERFRONT BUFFER LINE
—300'RBL—	300 FT RIVERFRONT BUFFER LINE
—600'RBL—	600 FT RIVERFRONT BUFFER LINE

[illegible]

GRAPHIC SCALE

CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER

CT LIC. NO. 12950	NJ LIC. NO. 28845
MA LIC. NO. 40595	NY LIC. NO. 60022
NH LIC. NO. 9368	RI LIC. NO. 6694

Calisto J. Bertin
CALISTO J. BERTIN, P.E.

				E.Q.
3	04-16-21	OVERALL SITE GRADING & DRAINAGE REVISIONS		E.Q.
2	04-02-19	REVISED GRADING AND DRAINAGE AND ADDITION OF INFILTRATION TRENCH TABLE. REVISION OF BEST PRACTICE DATA TO INCLUDE MORTUOUS ADDITION OF BORING LOGS AND SUMMARIES.		E.Q.
1	10-28-19	ADDITION OF SPOT SHOTS AND INF. BASINS ADDITION OF BORING LOGS AND SUMMARIES.		E.Q.
NO.	DATE	REVISION		

GRADING & DRAINAGE PLAN (SECTION 1)

PROJECT

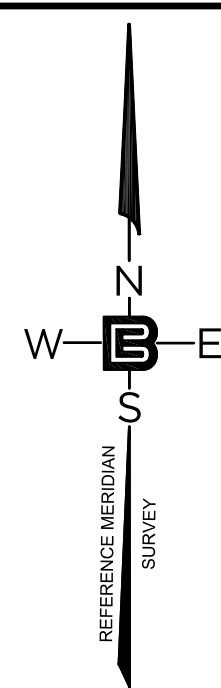
**LARGE SCALE
SOLAR ARRAY**

PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

24GA28068900 / 21MH00002800	
DRAWN BY E.Q.	CHECKED BY C.J.B.
SCALE 1" = 40'	PROJECT NO. 18M-216
DATE 10-21-19	REVISION NO. 3

C2.3



INFILTRATION TRENCH DEPTH ANALYSIS						
INFILTRATION TRENCH	NEAREST TEST PIT	TEST PIT EXIST. SURFACE ELEVATION	TEST PIT PROP. SURFACE ELEVATION	G.W. ELEV.	TRENCH DEPTH ELEV.	G.W SEPARATION
PR-INF-1	B-1 196 FT	498.00 FT	498.00 FT	487.00 FT	493.00 FT	6.00 FT
PR-INF-2	B-2 200 FT	478.00 FT	478.00 FT	461.00 FT	470.96 FT	9.96 FT

TEST PIT DATA

TEST PITS PERFORMED BY JTC INC. ON SEPTEMBER 20, 2019

B-1
NO GROUNDWATER OR MOTTLING ENCOUNTERED

TEXTURES:
TOPSOIL: 0-7 INCHES; FINE SAND, SOME SILT WITH ROOTS: 0-2 FEET;
FINE SAND, SILT TRACES, GRAVEL TRACES, OCCASIONAL COBBLES AND BOULDERS,
MEDIUM DENSE TO VERY DENSE: 2-4 FEET;
GLACIAL TILL: 5-15.5 FEET;
GLACIAL TILL, COARSE TO FINE SAND, LITTLE GRAVEL, SILT TRACES. FREQUENT
COBBLES AND BOULDERS, MEDIUM DENSE TO VERY DENSE, DRY: 10-11 FEET

B-2
NO GROUNDWATER OR MOTTLING ENCOUNTERED

TEXTURES:
TOPSOIL: 0-4 INCHES; FINE SAND, SOME SILT, WITH ROOTS: 0-2 FEET;
MEDIUM TO FINE SAND, LITTLE SILT, GRAVEL TRACES, MEDIUM DENSE, DRY: 2-4 FEET;
GLACIAL TILL, FINE SAND AND SILT, MEDIUM DENSE, DRY: 5-7 FEET;
GLACIAL TILL: 7-9 FEET;
GLACIAL TILL, SILT TRACES: 9-11 FEET;
GLACIAL TILL, MEDIUM TO FINE SAND, MEDIUM DENSE, DRY: 11-13 FEET;
GLACIAL TILL, STONE IN TIP OF SAMPLER: 16-17 FEET

LEGEND

CB	CATCH BASIN		IRON PIPE
UP	UTILITY POLE		DRILL HOLE
IR	REBAR		REBAR SET
DH	DRILL HOLE		BOUND SYMBOL
IP	IRON PIPE		UTILITY POLE
FND	FOUND		STONE WALL
BND	BOUND		WELL
AP:	ASSESSORS PARCEL		BENCH MARK
HYD.	HYDRANT		HYDRANT
GUY	GUY WIRE		GUY WIRE
	STUMP WITH WIRE		TREE WITH WIRE

WETLANDS LEGEND

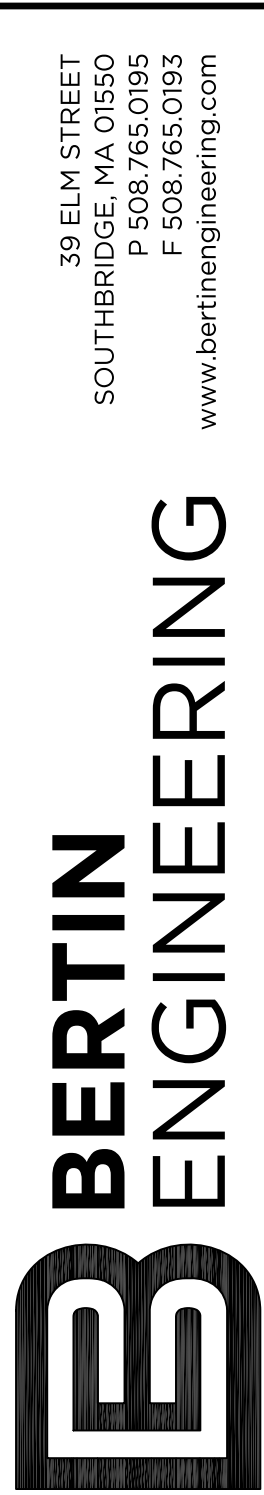
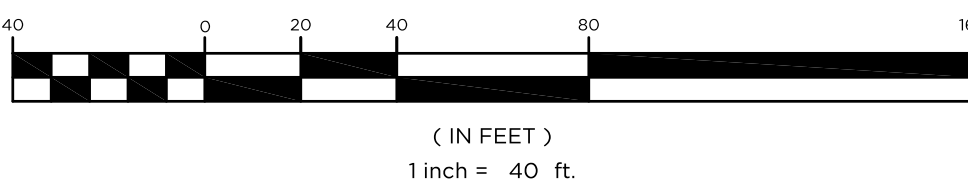
- WETLAND FLAG
- WL— WETLANDS BOUNDARY LINE
- 50'BL— 50 FT WETLANDS BUFFER LINE
- 100'BL— 100 FT WETLANDS BUFFER LINE
- 200'RBL— 200 FT RIVERFRONT BUFFER LINE
- 300'RBL— 300 FT RIVERFRONT BUFFER LINE
- 600'RBL— 600 FT RIVERFRONT BUFFER LINE

TOWN OF WARE PLANNING BOARD

[illegible]

DATE:

GRAPHIC SCALE



CIVIL • SURVEYING • TRAFFIC • STRUCTURAL • ENVIRONMENTAL • MECHANICAL • LANDSCAPE

CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER

CT LIC. NO. 12950	NJ LIC. NO. 28845
MA LIC. NO. 40595	NY LIC. NO. 60022
NH LIC. NO. 9368	RI LIC. NO. 6694

167

[illegible]

DRAWING TITLE

GRADING &
DRAINAGE PLAN
(SECTION 2)

PROJECT

**LARGE SCALE
SOLAR ARRAY**

PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

CERTIFICATE OF AUTHORIZATION
24GA28068900 / 21MH00002800

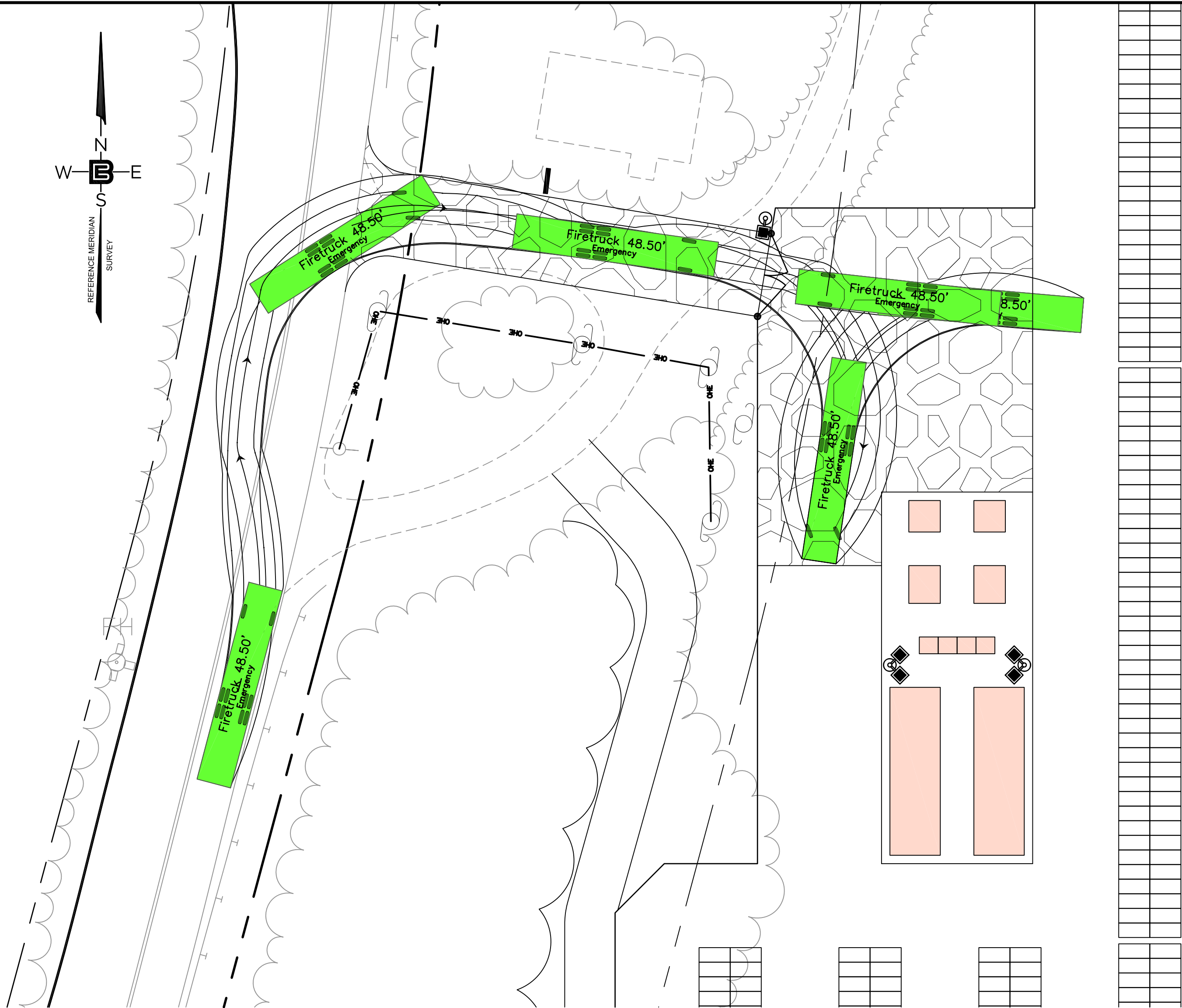
DRAWN BY E.Q.	CHECKED BY C.J.B.
------------------	----------------------

SCALE 1" = 40'	PROJECT NO. 18M-216
-------------------	------------------------

DATE	REVISION NO.
10-21-19	3

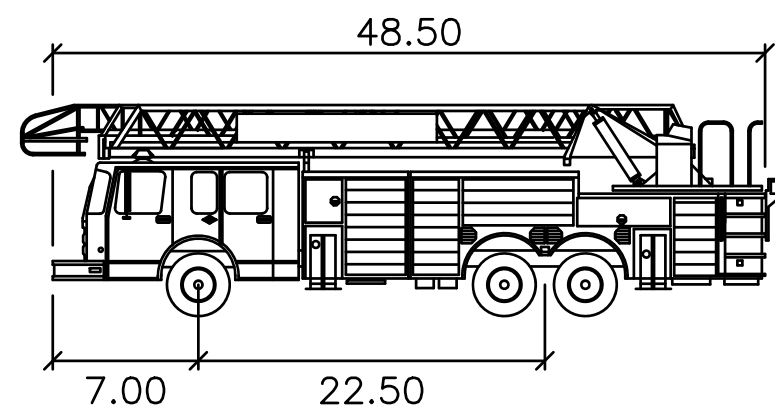
C2.4

© Bertin Engineering Associates, Inc. 11/02/108 16 210E Job Files\011818M-216 Ware, MA\Design\02 - Civil\CADD\09g 18M-216-PL.dwg Apr 12, 2021 12:30pm ellq



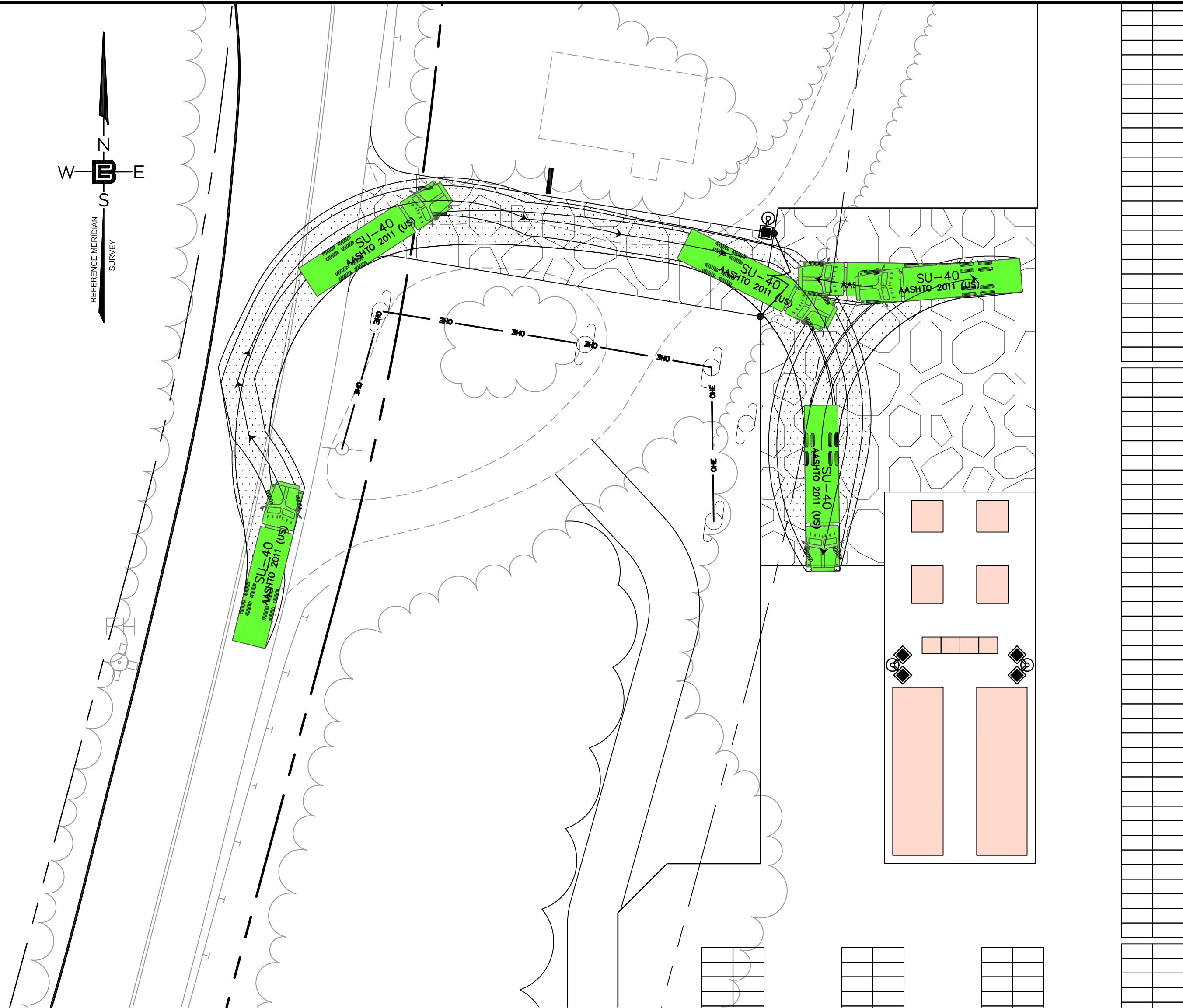
FIRETRUCK CIRCULATION PATH

SCALE: 1" = 20'



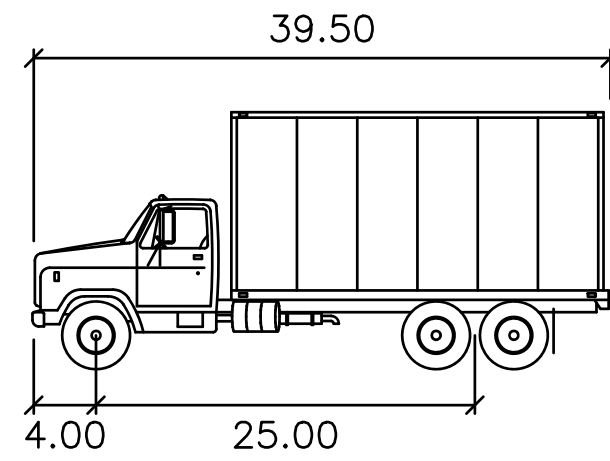
Firetruck

	feet
Width	: 8.25
Track	: 7.75
Lock to Lock Time	: 6.0
Steering Angle	: 31.6



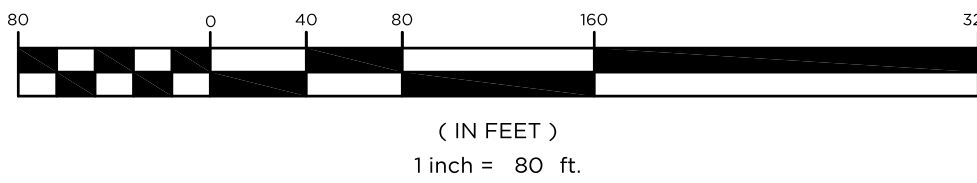
SU-40 MAINTENANCE VEHICLE CIRCULATION PATH

SCALE: 1" = 20'



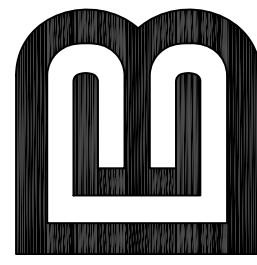
SU-40

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8



TOWN OF WARE PLANNING BOARD	


DATE: _____	



CIVIL • SURVEYING • TRAFFIC • STRUCTURAL • ENVIRONMENTAL • MECHANICAL • LANDSCAPE

39 ELM STREET
SOUTHBIDGE, MA 01550
P 508.765.0195
F 508.765.0193
www.bertinengineering.com

CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER
CT LIC. NO. 12950 NJ LIC. NO. 28845
MA LIC. NO. 40595 NY LIC. NO. 60022
NH LIC. NO. 9368 RI LIC. NO. 6694



NO. DATE

REVISION

DRAWING TITLE

VEHICLE CIRCULATION PLAN

PROJECT

LARGE SCALE SOLAR ARRAY
PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

CLIENT

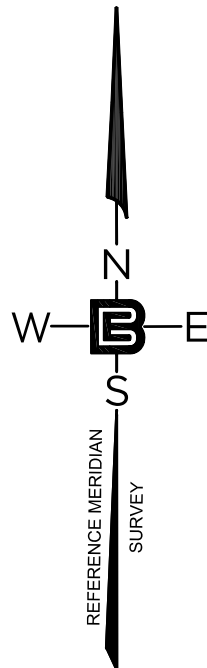
WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

CERTIFICATE OF AUTHORIZATION
24GA28068900 / 21MH00002800


DRAWN BY J.A.S.	CHECKED BY C.J.B.
SCALE 1" = 20'	PROJECT NO. 18M-216
DATE 10-21-19	REVISION NO. 0

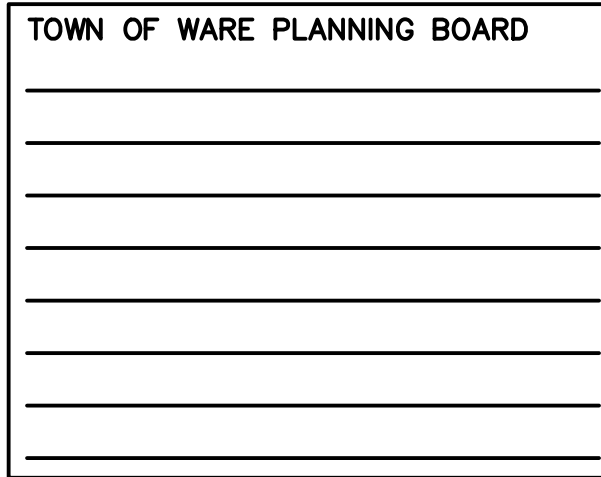
DRAWING NO.

C2.5



LEGEND

	WETLAND FLAG
—WL—	WETLANDS BOUNDARY LINE
—50'BL—	50 FT WETLANDS BUFFER LINE
—100'BL—	100 FT WETLANDS BUFFER LINE
—200'RBL—	200 FT RIVERFRONT BUFFER LINE
—300'RBL—	300 FT RIVERFRONT BUFFER LINE
—600'RBL—	600 FT RIVERFRONT BUFFER LINE



PROJECT

**LARGE SCALE
SOLAR ARRAY**

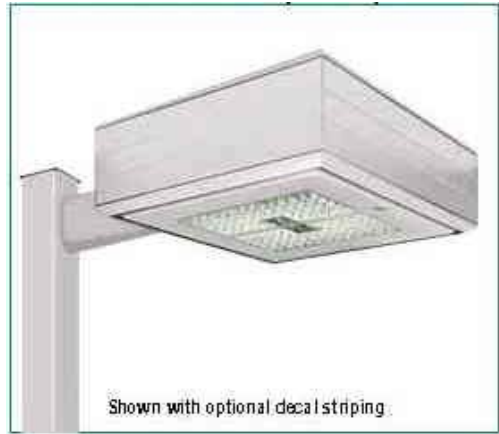
PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

CLIENT

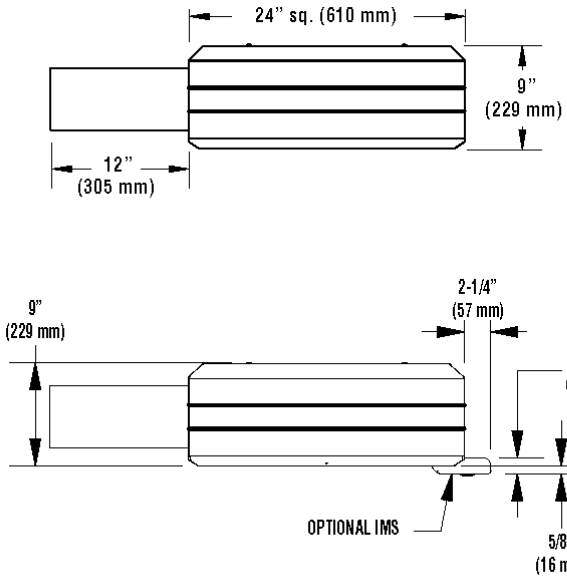
WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

C2.6

© Bertin Engineering Associates, Inc. 1182.108 16 23BE Job Files\2018\18M-216 Ware, MA\Design\02 - Civil\CA\DD\wp1 18M-216-DT.dwg Apr 12, 2021 - 12:32pm elbq

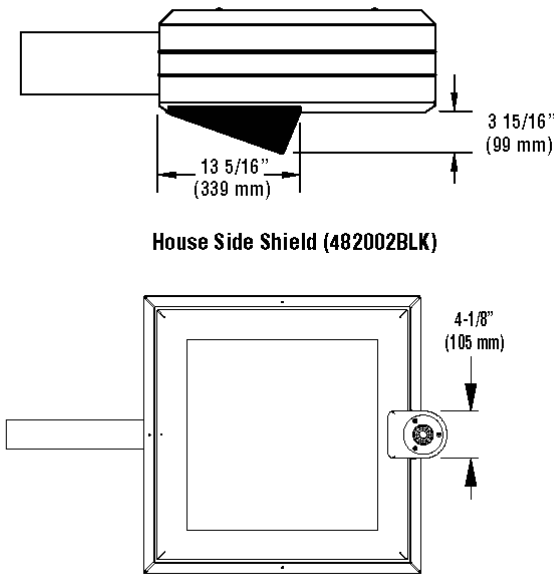


LED AREA LIGHT (XGBM) WITH OPTIONAL INTEGRAL MOTION SENSOR (IMS), MANUFACTURED BY LSI INDUSTRIES. SEE LIGHTING SCHEDULE FOR MOUNTING HEIGHT(S), LED COLOR TEMPERATURE(S), LIGHTING DISTRIBUTION(S), AND LUMENS.



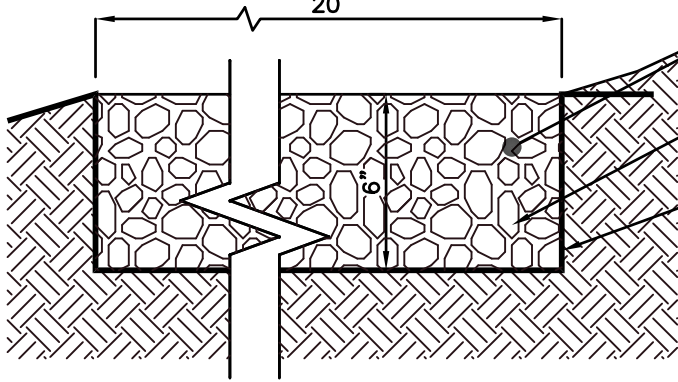
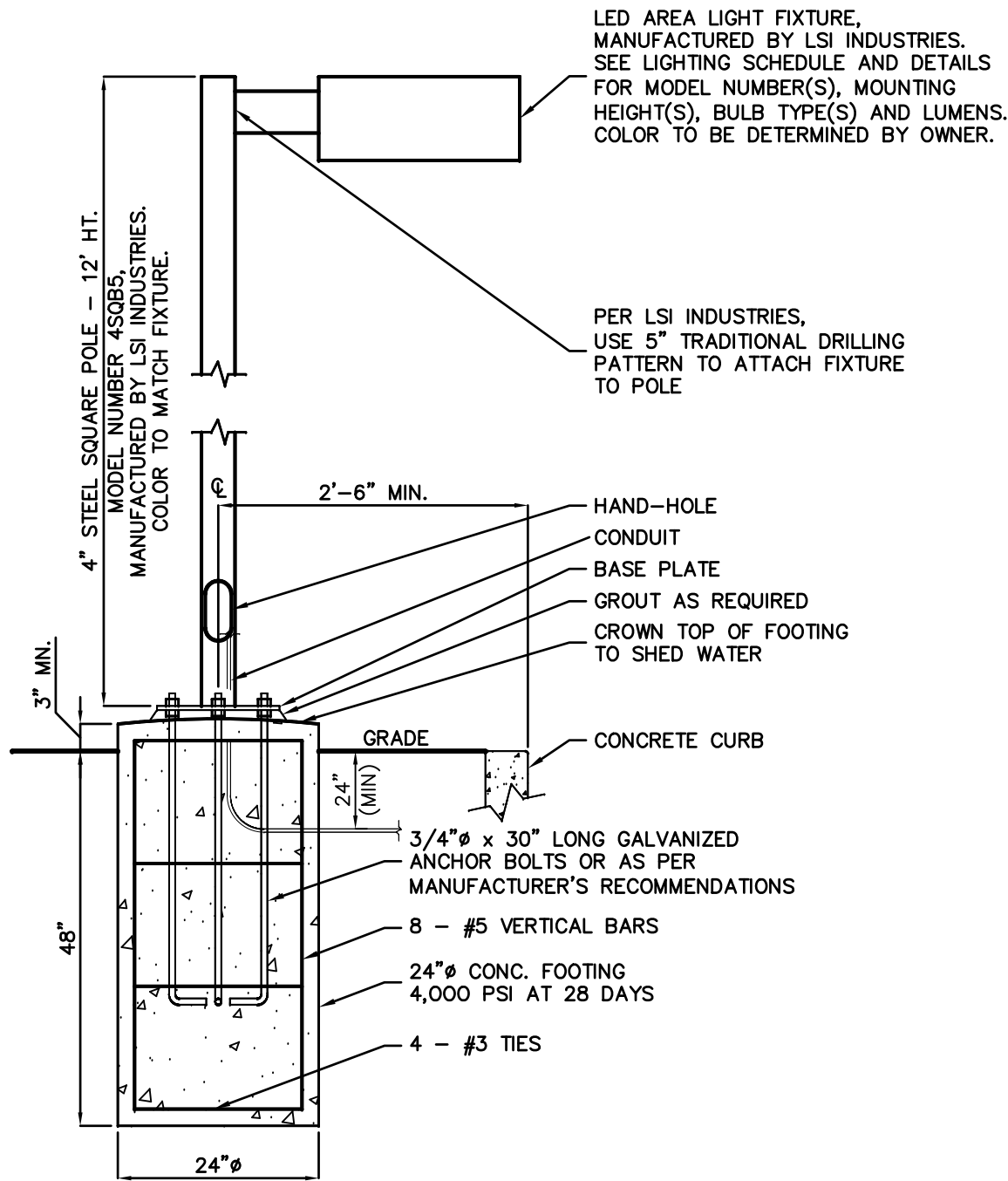
AREA LIGHT FIXTURE DETAIL

NOT TO SCALE



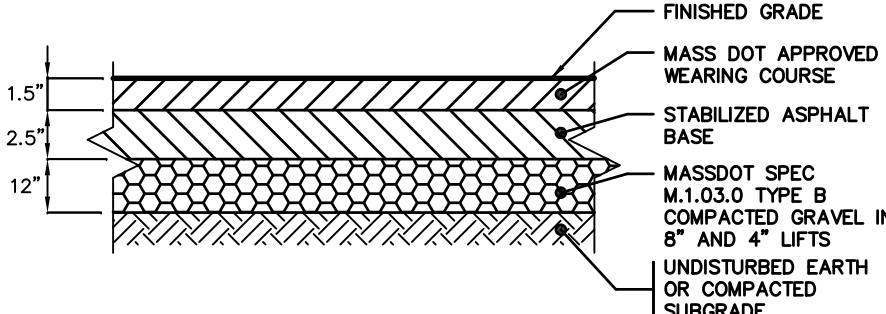
AREA LIGHT & FOOTING DETAIL

NOT TO SCALE



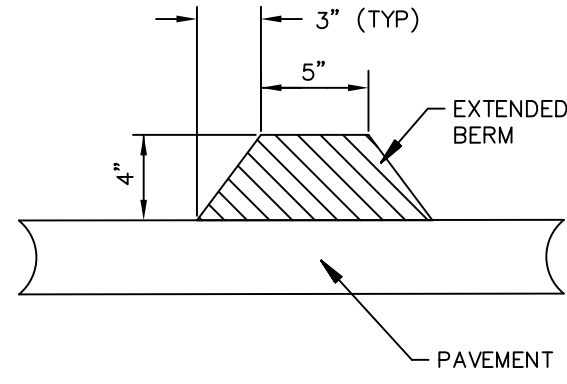
GRAVEL DRIVEWAY DETAIL

NOT TO SCALE



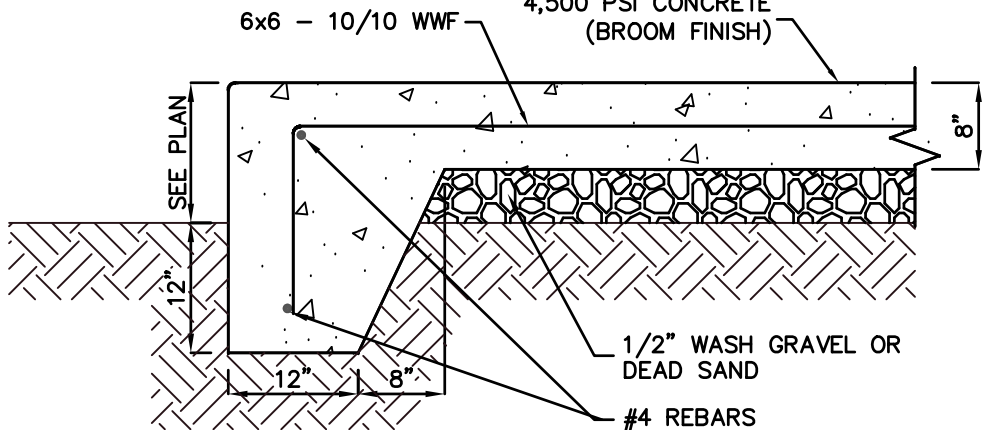
ASPHALT PAVEMENT DETAIL

NOT TO SCALE



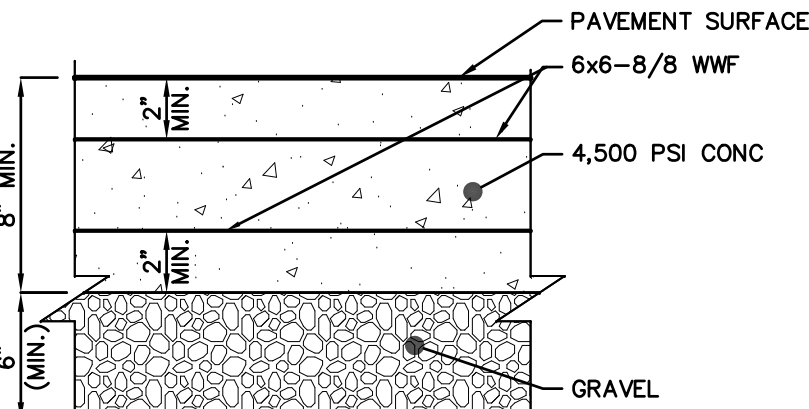
ASPHALT BERM

NOT TO SCALE



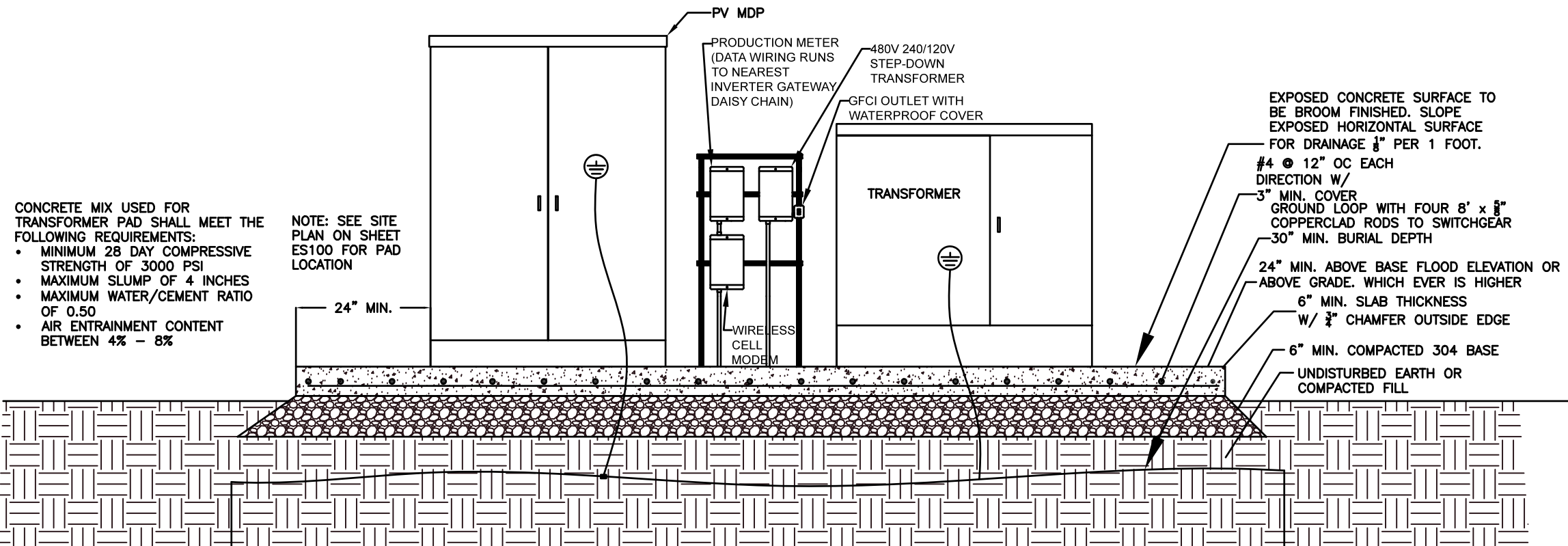
RAISED CONCRETE DETAIL

NOT TO SCALE



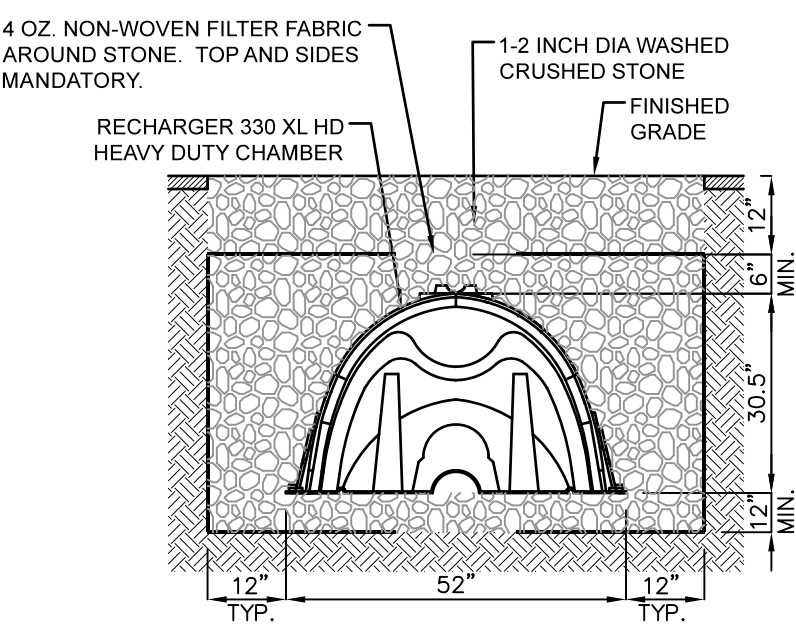
CONCRETE PAVEMENT DETAIL

NOT TO SCALE



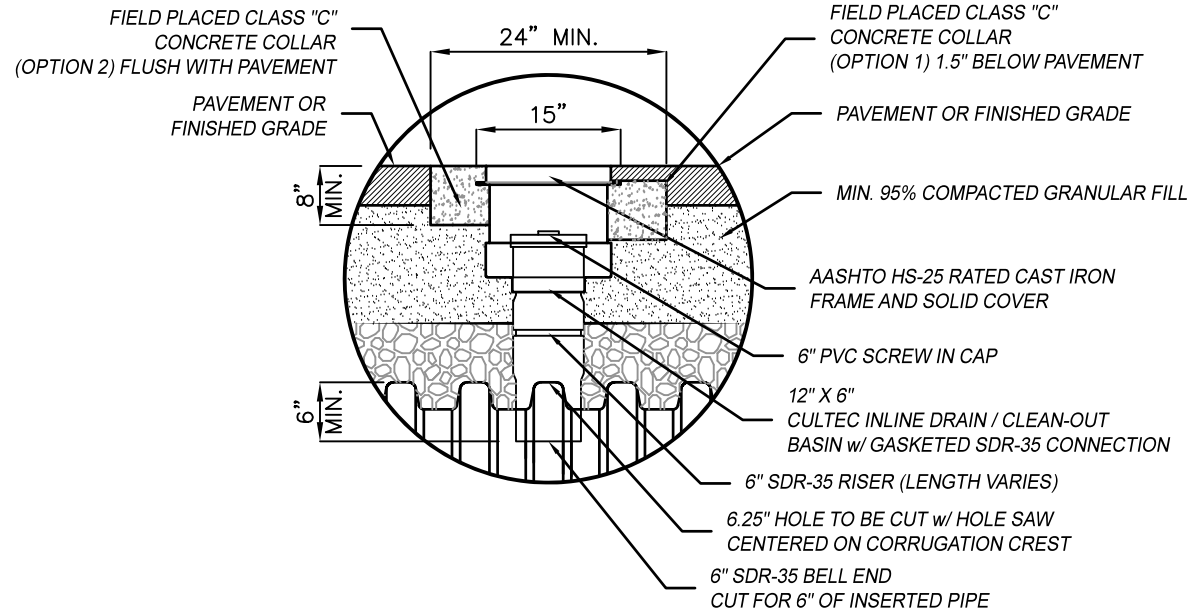
MAIN DISTRIBUTION PANEL AND TRANSFORMER PAD MOUNT DETAIL

NOT TO SCALE



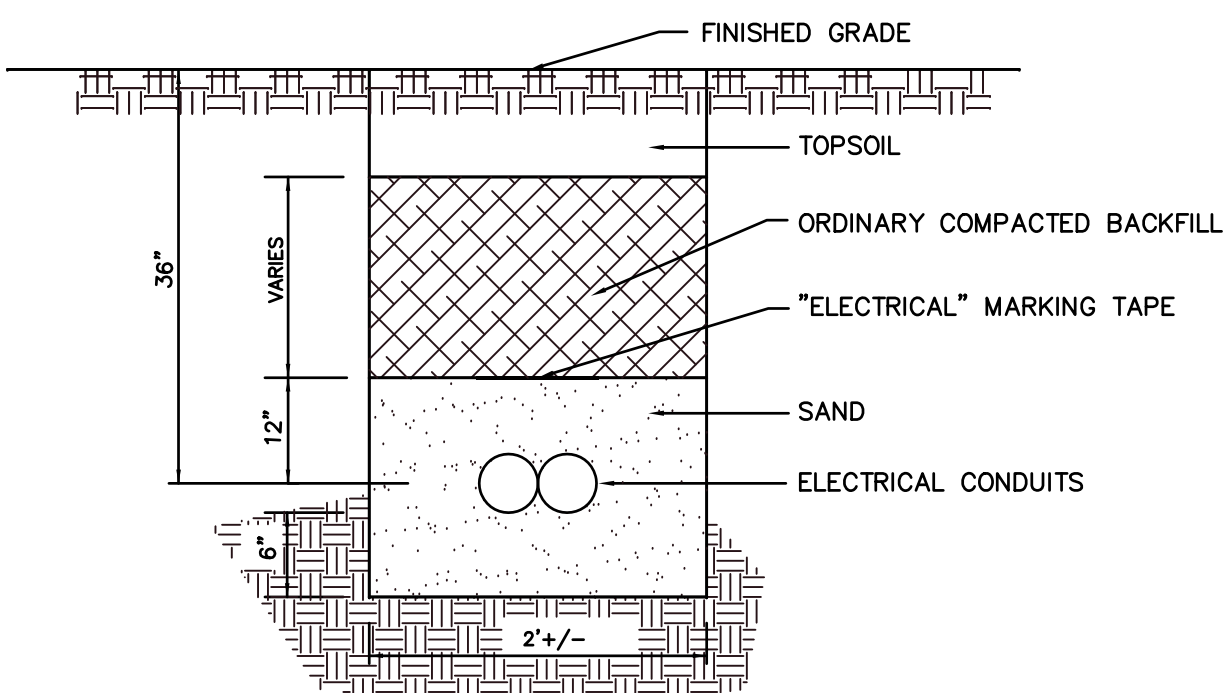
INFILTRATION TRENCH CROSS SECTION

NOT TO SCALE



INSPECTION PORT DETAIL

NOT TO SCALE



TYPICAL ELECTRICAL TRENCH DETAIL

NOT TO SCALE



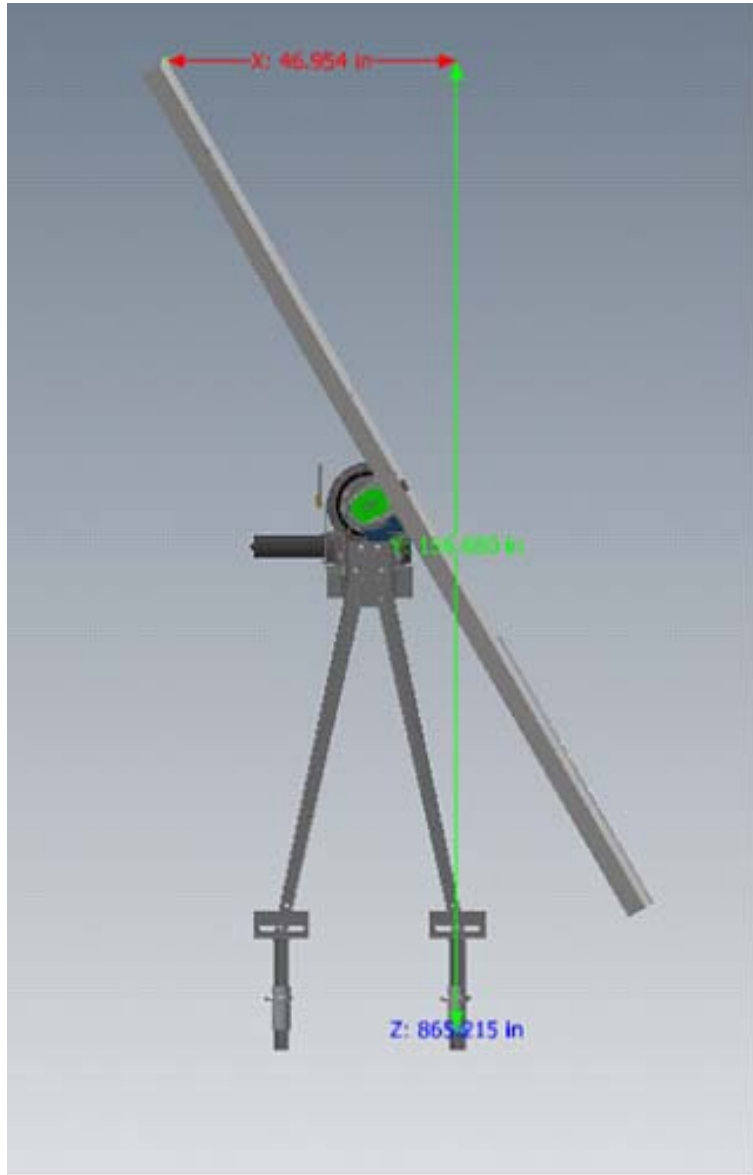
BATTERY STORAGE CONTAINER

NOT TO SCALE



STRING INVERTER

NOT TO SCALE



SOLAR PANEL & RACK SYSTEM

NOT TO SCALE

39 ELM STREET
SOUTHBIDGE, MA 01550
P 508.765.0195
F 508.765.0193
www.bertinengineering.com

BERTIN
ENGINEERING

CIVIL • SURVEYING • TRAFFIC • STRUCTURAL • ENVIRONMENTAL • MECHANICAL • LANDSCAPE

CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER
CT LIC. NO. 12950 NJ LIC. NO. 28845
MA LIC. NO. 40595 NY LIC. NO. 60022
NH LIC. NO. 9368 RI LIC. NO. 6694

BRUCE A. FITZBACK, P.L.S.
PROFESSIONAL LAND SURVEYOR
MA LIC. NO. 37731
CT LIC. NO. 16970

NOT TO SCALE, UNLESS NOTED

NO.	DATE	REVISION	E.G.
1	10-28-19	REVISION OF DRAWING TITLE, ADDITION OF DRAINAGE AND UTILITY DETAILS.	

SITE & DRAINAGE DETAILS

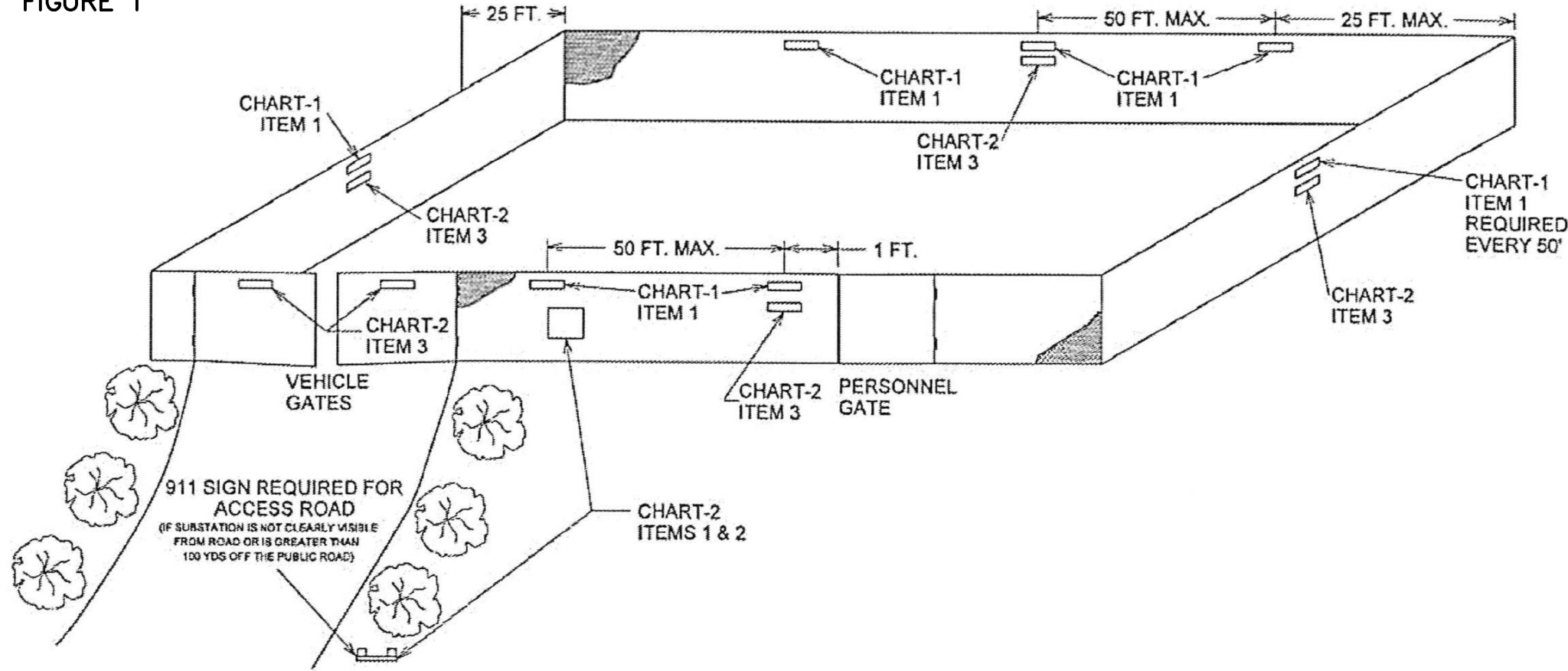
PROJECT
LARGE SCALE SOLAR ARRAY
PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

CLIENT
WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

CERTIFICATE OF AUTHORIZATION 24GA28068900 / 21MH00002800	
DRAWN BY J.A.S.	CHECKED BY C.J.B.
SCALE AS SHOWN	PROJECT NO. 18M-216
DATE 10-21-19	REVISION NO. 1

DRAWING NO.
C3.1

FIGURE 1

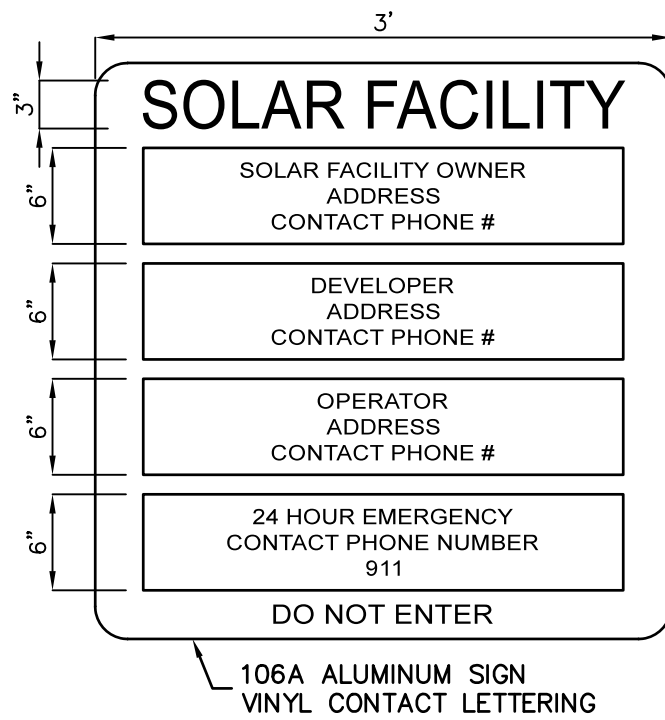
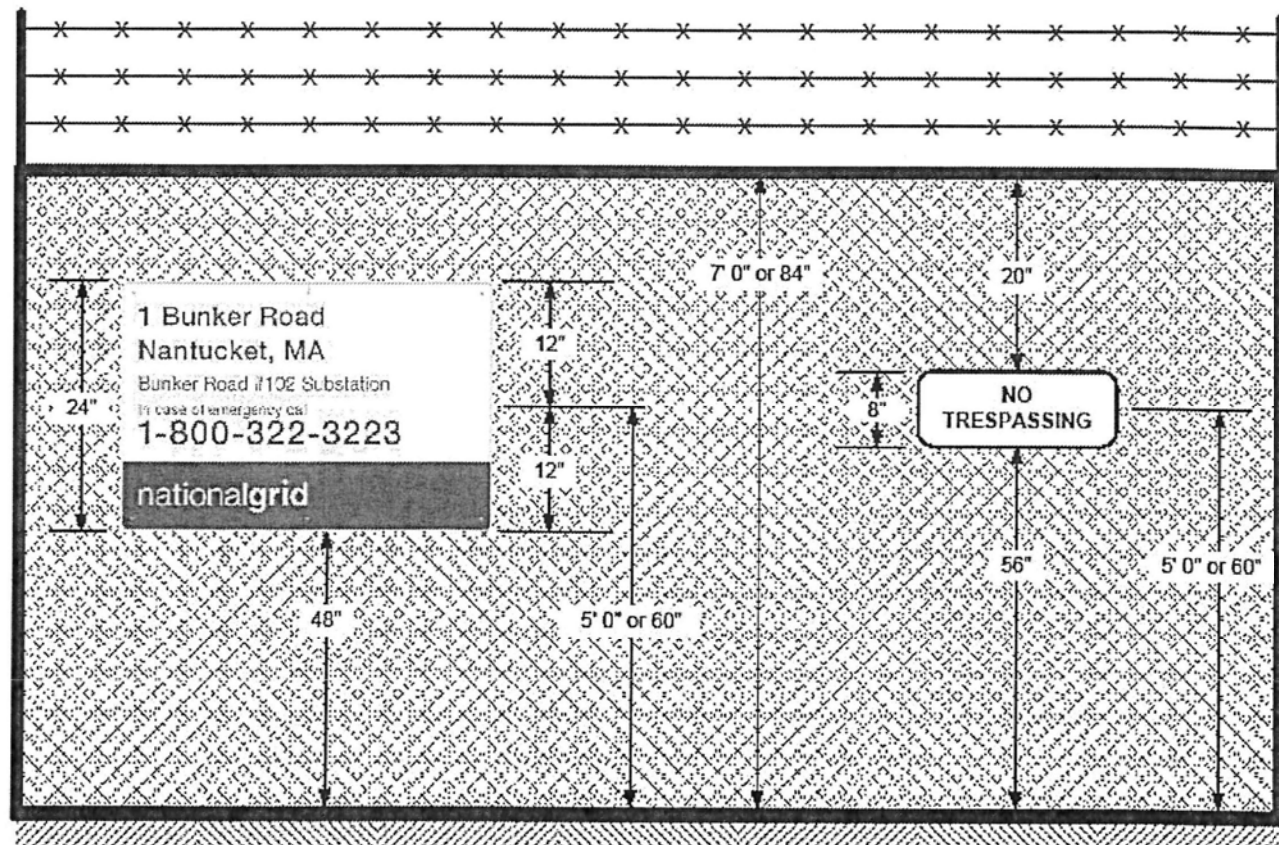


- NOTES:
1. SIGN CHAIN-LINK FENCES USING "DANGER" SIGN (CHART-1 ITEM 1).
 2. SIGN CHAIN-LINK FENCES USING "NO TRESPASSING" SIGN (CHART-2 ITEM 3).
 3. SIGN 4"x4" POSTS AT ACCESS ROAD AND CHAIN-LINK FENCES USING STATION "911" SIGN (CHART-2 ITEM 1 & 2).
 4. ALL SIGNS SHALL BE MOUNTED AS CLOSE TO A HEIGHT OF 60" (1525mm) ABOVE GRADE TO THE CENTERLINE OF THE SIGN AS POSSIBLE. ATTACH SIGNS AS LEVEL AS POSSIBLE.
 5. SIGN ALL GATES AT A HEIGHT OF 60" (1525mm) ABOVE GRADE TO THE CENTERLINE OF SIGN WITH SIGN AT GATE CENTER.
 6. FENCE SIDES THAT CONTAIN NO GATES SHOULD HAVE SYMMETRICAL SIGN PLACEMENT AS MUCH AS IS POSSIBLE.
 7. MAXIMUM DISTANCE BETWEEN SIGNS ALONG FENCE PERIMETER NOT TO EXCEED 50 FEET.
 8. REFER TO FIGURE 1 AND 2 FOR PLACEMENT DETAIL.
 9. SIGN UNHINGED SIDE OF SINGLE GATES AT A HEIGHT OF 60" (1525mm) ABOVE GRADE TO CENTERLINE OF SIGN ONE FOOT FROM GATE POST.
 10. ALL FIGURES AND NOTES TAKEN FROM "NATIONALGRID" ENGINEERING DOCUMENT #ST.03.06.001, PG 14 OF 22, VERSION 1.0 DATED 3-9-09.

SIGN PLACEMENT ON PERIMETER GATES & FENCES

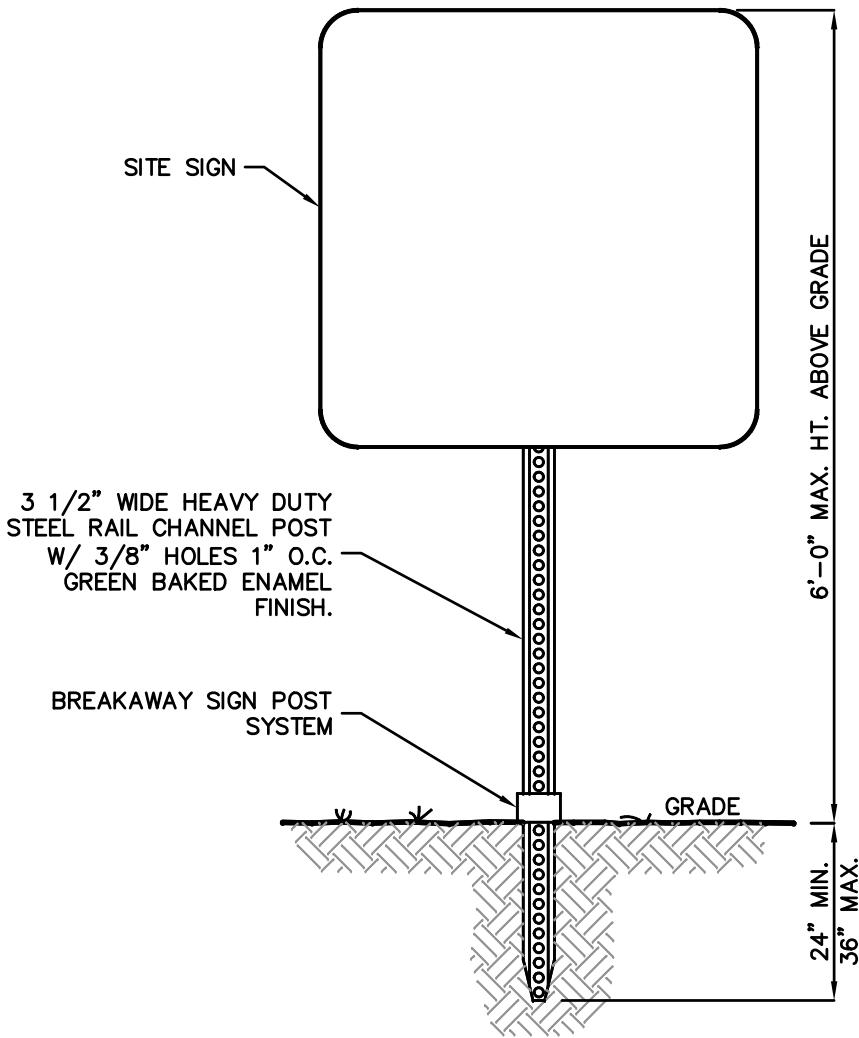
NOT TO SCALE

FIGURE 2 Substation Sign Placement Details



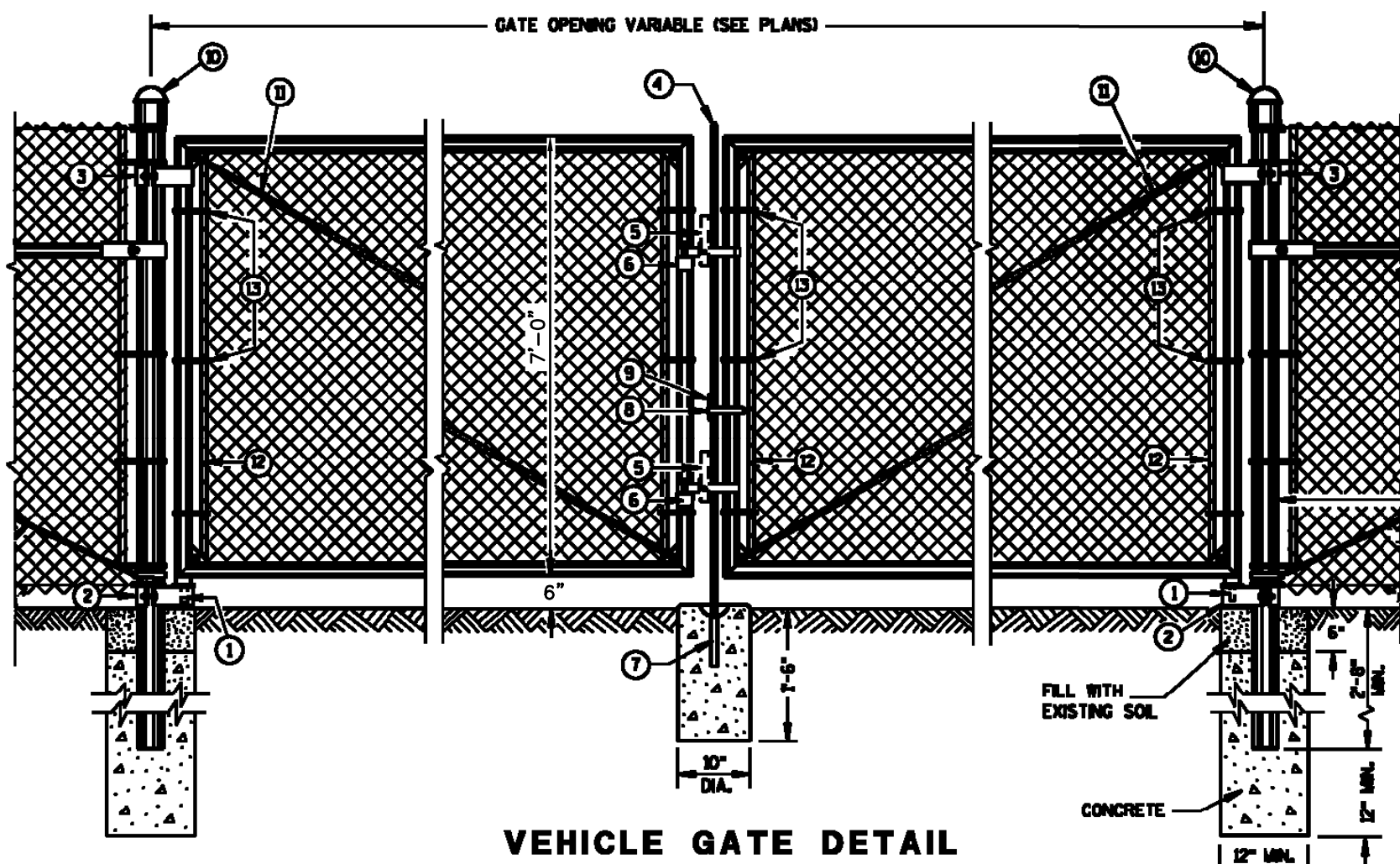
SITE SIGN DETAIL

NOT TO SCALE



SITE SIGN INSTALLATION DETAIL

NOT TO SCALE



- NOTES
1. FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.
 2. FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.
 3. MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

CHAIN LINK FENCE GATE DETAIL

NOT TO SCALE

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2*
	GREATER THAN OR EQUAL TO 8 FT.	FS3

ROUND STEEL FENCE POST (1.6 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2*	1.875	1.625	1.850
FS2	1.875	1.625	2.480
FS3	2.250	1.700	2.780

REQUIRED POST SIZE FOR GATES

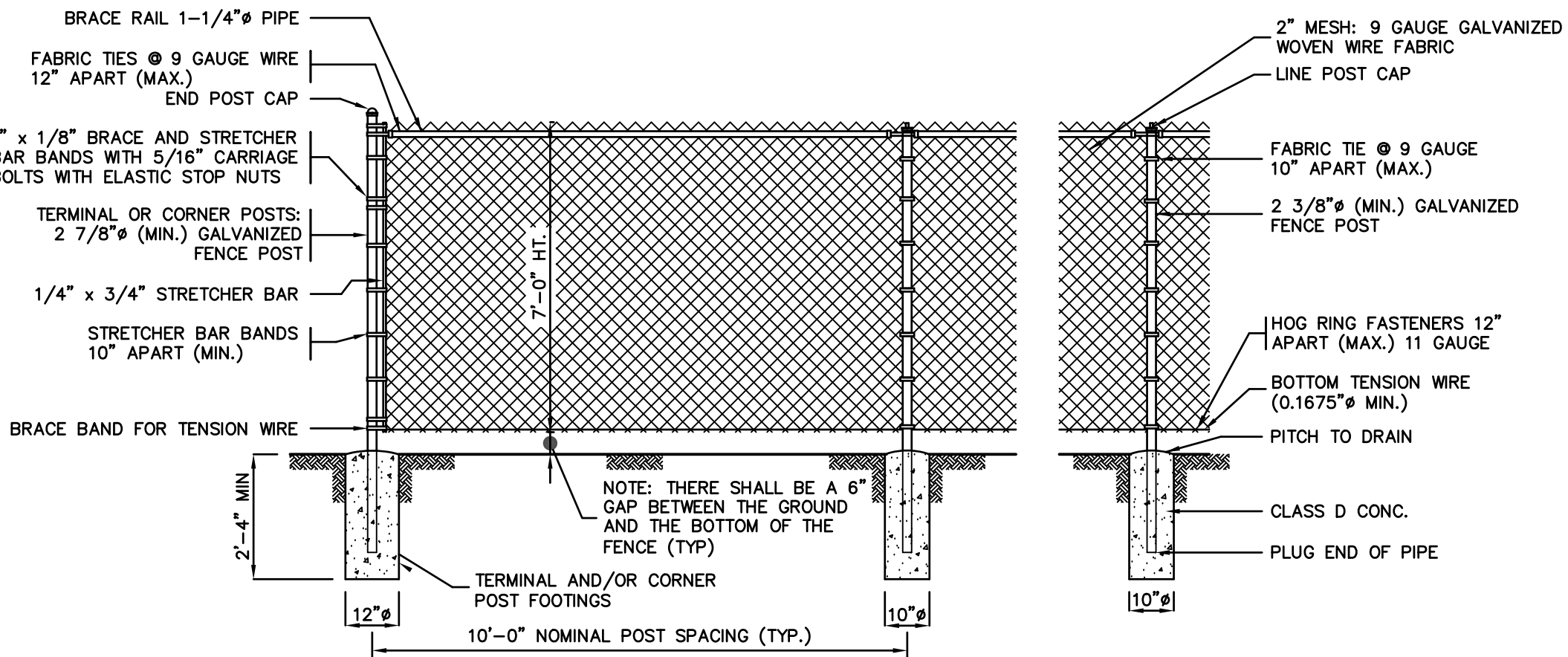
USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 25 FT.	SP7

- LEGEND
1. STRAIGHT PLUG
 2. BOTTOM HINGE
 3. TOP HINGE
 4. PLUNGER ROD
 5. FULCRUM LATCH
 6. FORK CATCH
 7. PLUNGER ROD CATCH
 8. LOCK KEEPER GUIDE
 9. LOCK KEEPER
 10. DOME TOPS
 11. TRUSS RODS
 12. TENSION BAR
 13. TENSION BANDS
 14. BRACE RAIL

GATE POST & END POST FOR FENCE

USE	TYPE
BRACE RAIL	SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS



- NOTES
1. ALL TIES, HOG RINGS AND CLIPS SHALL BE GALVANIZED.
 2. FABRIC SHALL BE GALVANIZED WIRE, ALL PIPE TO CONFORM TO CURRENT ASTM DESIGNATION F 1083, SCHEDULE 40, PLAIN END.
 3. BRACE RAIL AND ROD AT CORNER AND END SECTION ONLY.
 4. ALL REFERENCES TO PIPE DIAMETER ARE ASTM NOMINAL SIZE.
 5. WITH THE APPROVAL OF THE ENGINEER, IN SOFT MARSHY GROUND, POSTS MAY BE DRIVEN, THE CONCRETE FOOTING DELETED AND APPROVED DRIVE ANCHORS USED.

CHAIN LINK FENCE DETAIL

NOT TO SCALE

39 ELM STREET
SOUTHBIDGE, MA 01550
P 508.765.0195
F 508.765.0193
www.bertinengineering.com

BERTIN
ENGINEERING

CALISTO J. BERTIN, P.E.
PROFESSIONAL ENGINEER
CT LIC. NO. 12950 NJ LIC. NO. 28845
MA LIC. NO. 40595 NY LIC. NO. 60022
NH LIC. NO. 9368 RI LIC. NO. 6694

BRUCE A. FITZBACK, P.L.S.
PROFESSIONAL LAND SURVEYOR
MA LIC. NO. 37731
CT LIC. NO. 16970

DRAWING TITLE
SITE DETAILS - 2

PROJECT
LARGE SCALE
SOLAR ARRAY
PARCEL NUMBER 35-0-12
GREENWICH ROAD
TOWN OF WARE
HAMPSHIRE COUNTY, MASSACHUSETTS

CLIENT
WARE SOLAR III LLC
276 N. FOREST AVE. NE
MARIETTA, GA 30060

CERTIFICATE OF AUTHORIZATION
24GA28068900 / 21MH00002800
DRAWN BY J.A.S. CHECKED BY C.J.B.
SCALE AS SHOWN PROJECT NO. 18M-216
DATE 10-21-19 REVISION NO. 0

DRAWING NO.
C3.2

CIVIL • SURVEYING • TRAFFIC • STRUCTURAL • ENVIRONMENTAL • MECHANICAL • LANDSCAPE

NO. DATE REVISION

© Bertin Engineering Associates, Inc. \1182.108.16.218E Job Files\2018\18M-216 Ware, MA\Design\02 - Civil\CA\DD\wp1 18M-216-DT.dwg Apr 12, 2021 - 12:32pm ellcq



C3.3