

4.88 MW AC SOLAR ARRAY

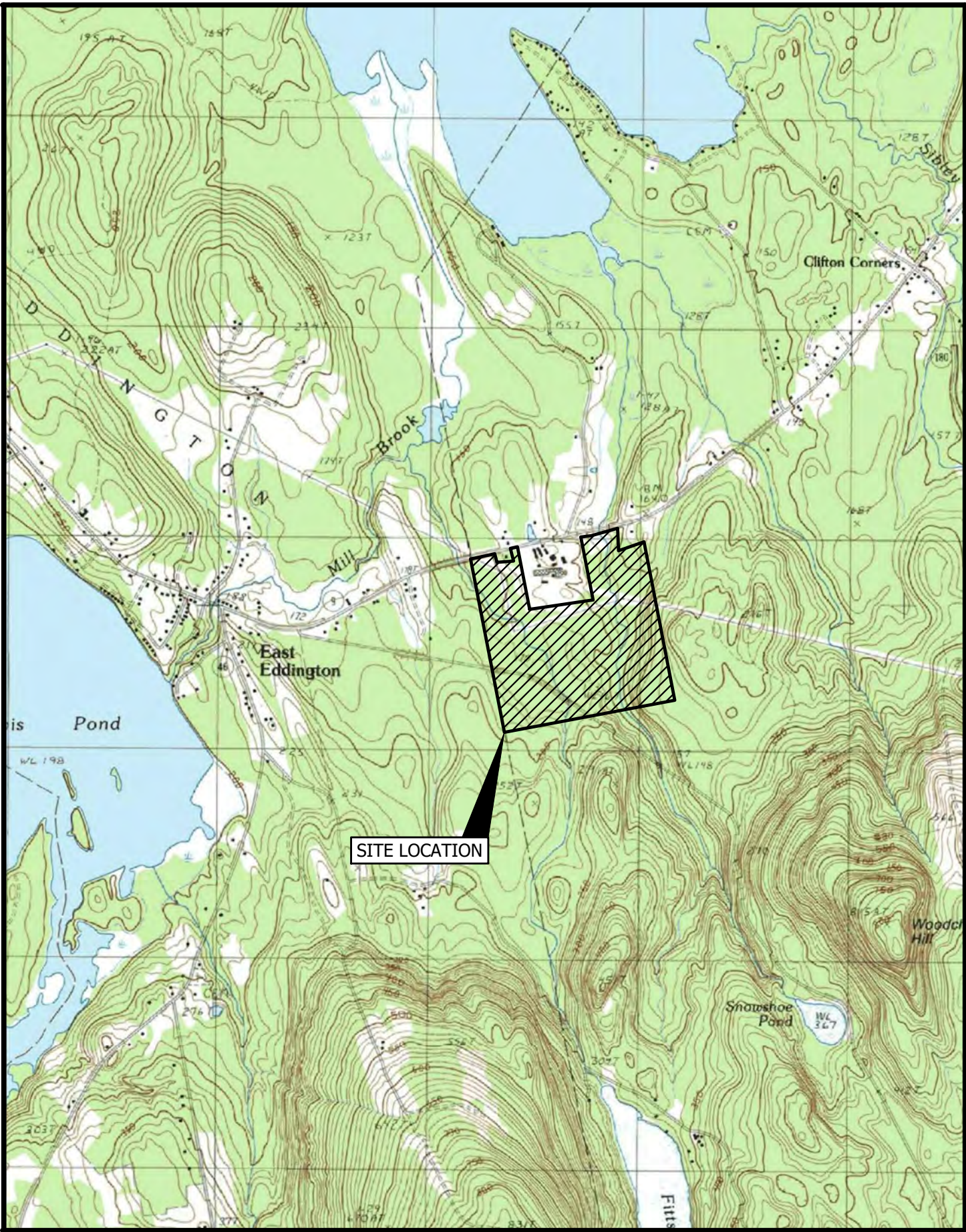
HEP CLIFTON SPV, LLC

45 AIRLINE ROAD

CLIFTON, MAINE

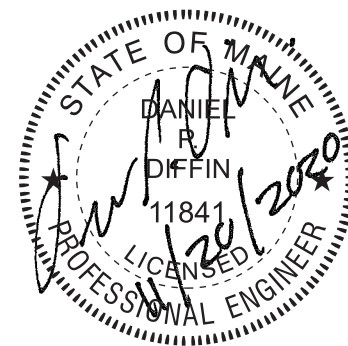
TITLE	DWG NO
COVER SHEET	
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LOCATION MAP



ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com



GENERAL SITE NOTES:

1.

DRAWING DATUM:
HORIZONTAL DATUM: STATE PLAN NAD83 MAINE, EAST
VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM 1988
2.

PROPERTY BOUNDARIES AND EXISTING FEATURES FROM CADD FILE PROVIDED BY NORTHERN SURVEY ENGINEERS, LLC, OF BRUNSWICK, MAINE, DATED 11/16/2020.
3.

LIDAR DERIVED TOPOGRAPHY FROM MAINE GIS DATABASE, DATED 2006-2013. THE TOPOGRAPHY WAS GATHERED BETWEEN 2006 AND 2013. IF PRECISE SURFACE CONTOURS ARE CRITICAL TO THE PROPOSED SOLAR ARRAY INSTALLATION, ADDITIONAL SURVEY MAY BE REQUIRED PRIOR TO CONSTRUCTION.
4.

WETLANDS FROM PLAN TITLED "PRELIMINARY NATURAL RESOURCE PLAN" BY BURMAN LAND & TREE COMPANY, LLC, DATED OCTOBER 21, 2020.
5.

AERIAL IMAGE FROM GOOGLE EARTH, DATED JUNE 21, 2018.
6.

SOIL TYPES FROM A CUSTOM SOIL RESOURCE REPORT BY UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE.
7.

PLANS ARE NOT FOR CONSTRUCTION AND ALL PROPERTY BOUNDARY INFORMATION SHALL BE CONFIRMED WITH A BOUNDARY SURVEY PERFORMED BY A LICENSED PROFESSIONAL SURVEYOR PRIOR TO CONSTRUCTION. STANDARD PRACTICE DICTATES THAT PLANS COMPILED IN THIS MANNER SHOULD BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO ENGINEER. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION IS NOT GUARANTEED. VERIFY SITE CONDITIONS INCLUDING TEST PITS FOR LOCATIONS AND INVERTS OF UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.
8.

EXCAVATE AND STOCKPILE ON-SITE TOPSOIL. TOPSOIL IS TO REMAIN THE PROPERTY OF THE OWNER DURING CONSTRUCTION, AND SHALL NOT BE REMOVED FROM THE SITE. AFTER FINAL LOAM AND SEED, EXCESS TOPSOIL SHALL BE REMOVED FROM SITE BY CONTRACTOR.

ZONING NOTES:

1.

OWNER/DEVELOPER:

HEP CLIFTON SPV, LLC
57 EXCHANGE STREET, STE 100
PORTLAND, MAINE 04105
2.

PROJECT:

4.88 MW AC SOLAR ARRAY
3.

ZONING DISTRICT:

GMA 1B (ENTERPRISE)
4.

ZONE STANDARDS:
MINIMUM LOT SIZE

REQUIRED
10 ACRES

PROVIDED
>10 ACRES

SETBACKS
DRIVING AND PARKING/STRUCTURES

FRONT
35/100 FEET
SIDE
20/100 FEET
REAR
20/100 FEET

>35/100 FEET
>20/100 FEET
>20/100 FEET
5.

TAX MAP 7, LOT 2
6.

PROPOSED USE: COMMERCIAL/INDUSTRIAL (SOLAR ARRAY)
7.

THE PROPERTY IS OUTSIDE OF THE 100 YEAR FLOODPLAIN AS OUTLINED ON FEMA COMMUNITY PANEL NO. 230378 0005 A, EFFECTIVE DAT MAY 2, 1994.

DIG SAFE NOTES:

- PRIOR TO EXCAVATION, VERIFY THE UNDERGROUND UTILITIES, PIPES, STRUCTURES AND FACILITIES. PROVIDE THE FOLLOWING MINIMUM MEASURES:
1.

PRE-MARK THE BOUNDARIES OF YOUR PLANNED EXCAVATION WITH WHITE PAINT, FLAGS OR STAKES, SO UTILITY CREWS KNOW WHERE TO MARK THEIR LINES.
2.

CALL DIG SAFE, AT 811, AT LEAST THREE BUSINESS DAYS - BUT NO MORE THAN 30 CALENDAR DAYS - BEFORE STARTING WORK. DO NOT ASSUME SOMEONE ELSE WILL MAKE THE CALL.
3.

IF BLASTING, NOTIFY DIG SAFE AT LEAST ONE BUSINESS DAY IN ADVANCE.
4.

WAIT THREE BUSINESS DAYS FOR LINES TO BE LOCATED AND MARKED WITH COLOR-CODED PAINT, FLAGS OR STAKES. NOTE THE COLOR OF THE MARKS AND THE TYPE OF UTILITIES THEY INDICATE. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
5.

CONTACT THE LANDOWNER AND OTHER "NON-MEMBER" UTILITIES (WATER, SEWER, GAS, ETC.). FOR THEM TO MARK THE LOCATIONS OF THEIR UNDERGROUND FACILITIES. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
6.

RE-NOTIFY DIG SAFE AND THE NON-MEMBER UTILITIES IF THE DIGGING, DRILLING OR BLASTING DOES NOT OCCUR WITHIN 30 CALENDAR DAYS, OR IF THE MARKS ARE LOST DUE TO WEATHER CONDITIONS, SITE WORK ACTIVITY OR ANY OTHER REASON.
7.

HAND DIG WITHIN 18 INCHES IN ANY DIRECTION OF ANY UNDERGROUND LINE UNTIL THE LINE IS EXPOSED. MECHANICAL METHODS MAY BE USED FOR INITIAL SITE PENETRATION, SUCH AS REMOVAL OF PAVEMENT OR ROCK.
8.

DIG SAFE REQUIREMENTS ARE IN ADDITION TO TOWN, CITY AND/OR STATE DOT STREET OPENING PERMIT REQUIREMENTS.
9.

FOR COMPLETE DIG SAFE REQUIREMENTS, CALL THE PUBLIC UTILITIES COMMISSION (PUC) AT 1-800-452-4699 OR VISIT WWW.STATE.ME.US/MPUC
10.

IF YOU DAMAGE, DISLOCATE OR DISTURB ANY UNDERGROUND UTILITY LINE, IMMEDIATELY NOTIFY THE AFFECTED UTILITY. IF DAMAGE CREATES SAFETY CONCERNS, CALL THE FIRE DEPARTMENT AND TAKE IMMEDIATE STEPS TO SAFEGUARD HEALTH AND PROPERTY.
11.

ANY TIME AN UNDERGROUND LINE IS DAMAGED OR DISTURBED OR IF LINES ARE IMPROPERLY MARKED, YOU MUST FILE AN INCIDENT REPORT WITH THE PUC FOR AN INCIDENT REPORT FORM VISIT WWW.STATE.ME.US/MPUC OR CALL THE PUC AT 1-800-452-4699.

GRADING NOTES:

1.

ADD 4" LOAM, SEED AND MULCH TO DISTURBED AREAS UNLESS OTHERWISE NOTED. PROVIDE EROSION CONTROL MESH ON ALL SLOPES 6:1 OR STEEPER, AND ALONG DITCH CHANNELS.
2.

MAINTAIN TEMPORARY EROSION CONTROL MEASURES FOR THE FULL DURATION OF CONSTRUCTION. INSPECT WEEKLY AND AFTER EACH STORM AND REPAIR AS NEEDED. PLACE IN AREA OF LOW EROSION POTENTIAL, AND STABILIZE WITH SEED AND MULCH. REMOVE SEDIMENTS FROM THE SITE.
3.

NO MORE THAN 5 ACRES WILL BE DISTURBED AT ANY ONE TIME BEFORE TEMPORARY OR PERMANENT STABILIZATION. PLACE TEMPORARY SOIL STABILIZATION WITHIN 14 DAYS OF INITIAL DISTURBANCE. PLACE PERMANENT SOIL STABILIZATION WITHIN 7 DAYS OF FINAL GRADING.

UTILITY NOTES:

1.

EXISTING UTILITIES IN AIRLINE ROAD:
OVERHEAD ELECTRIC
OVERHEAD COMMUNICATIONS
2.

EXISTING UNDERGROUND AND ABOVE GROUND UTILITIES ARE NOT SHOWN ON THIS PLAN. PRIOR TO WORK THE CONTRACTOR SHALL USE PRIVATE UTILITY LOCATION SERVICE TO LOCATE ALL UNDERGROUND AND ABOVE GROUND UTILITIES WITHIN THE LIMITS OF WORK. LOCATION AND ELEVATION OF ALL UTILITIES SHALL BE SURVEYED BY THE CONTRACTOR AND PROVIDED TO THE OWNER ON AS-BUILT DRAWINGS PRIOR TO PROJECT COMPLETION.
3.

THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION IS NOT GUARANTEED. VERIFY SITE CONDITIONS INCLUDING TEST PITS OUTSIDE THE LANDFILL LIMIT FOR LOCATIONS AND INVERTS OF UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.
4.

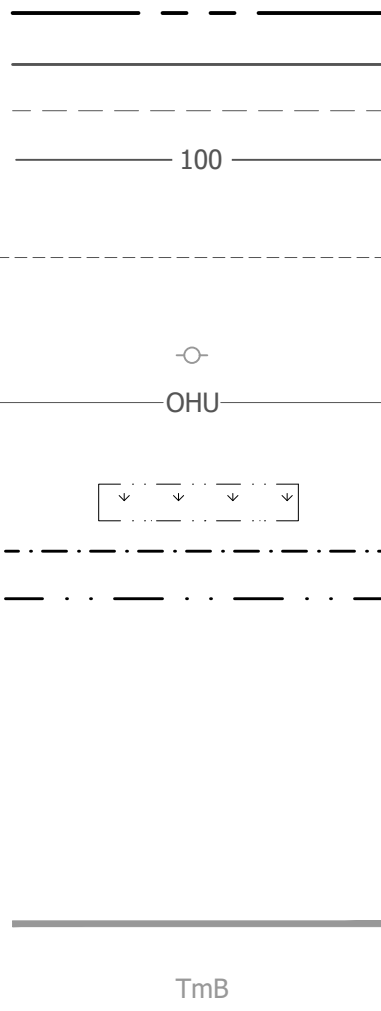
COORDINATE WORK ON UTILITY LINES WITH THE TOWN OF CLIFTON.

TYPICAL ABBREVIATIONS:

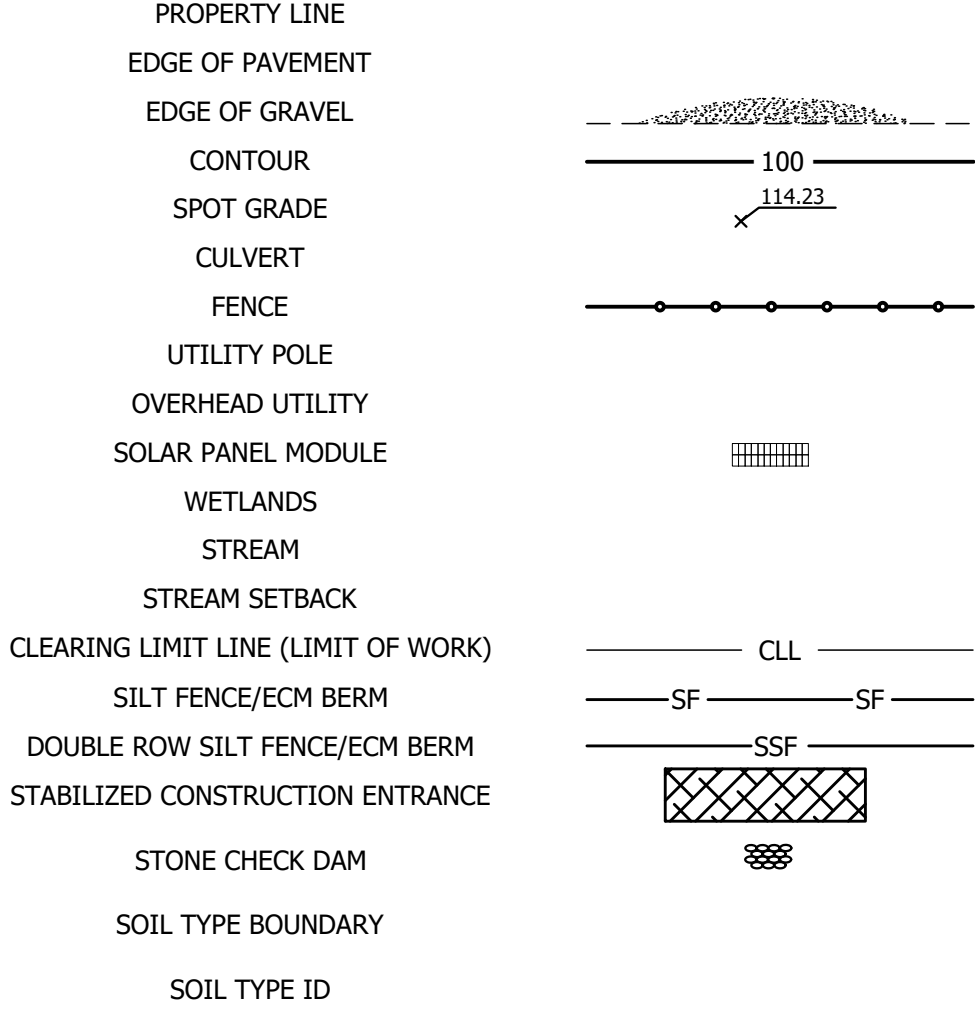
ACCOMP	ASPHALT COATED CMP	D	DEGREE OF CURVE	HDPE	HIGH DENSITY POLYETHYLENE	PERF	PERFORATED
ACP	ASBESTOS CEMENT PIPE	DBL	DOUBLE	HORIZ	HORIZONTAL	PP	POWER POLE
AC	ACRE	DEG OR °	DEGREE	HP	HORSEPOWER	PSI	POUNDS PER SQUARE INCH
AGG	AGGREGATE	DEPT	DEPARTMENT	HYD	HYDRANT	PVC	POLYVINYL CHLORIDE
ALUM	ALUMINUM	DI	DUCTILE IRON			PVMT	PAVEMENT
APPD	APPROVED	DIA OR	DIAMETER	ID	INSIDE DIAMETER		
APPROX	APPROXIMATE	DIM	DIMENSION	IN OR "	INCHES		
ARMH	AIR RELEASE MANHOLE	DIST	DISTANCE	INV	INVERT	QTY	QUANTITY
ASB	ASBESTOS	DN	DOWN	INV EL	INVERT ELEVATION		
ASP	ASPHALT	DR	DRAIN			RCP	REINFORCED CONCRETE PIPE
AUTO	AUTOMATIC	DWG	DRAWING	LB	POUND	ROW	RIGHT OF WAY
AUX	AUXILIARY			LC	LEACHATE COLLECTION	RAD	RADIUS
AVE	AVENUE	EA	EACH	LD	LEAK DETECTION	REQD	REQUIRED
AZ	AZIMUTH	EG	EXISTING GROUND OR GRADE	LF	LINEAR FEET	RT	RIGHT
		ELEC	ELECTRIC	LOC	LOCATION	RTE	ROUTE
		EL	ELEVATION	LT	LEACHATE TRANSPORT	S	SLOPE
BCCMP	BITUMINOUS COATED CMP	ELB	ELBOW			SCH	SCHEDULE
BM	BENCH MARK	EOP	EDGE OF PAVEMENT	MH	MANHOLE	SF	SQUARE FEET
BIT	BITUMINOUS	EQUIP	EQUIPMENT	MJ	MECHANICAL JOINT	SHT	SHEET
BLDG	BUILDING	EST	ESTIMATED	MATL	MATERIAL	SHH	SANITARY MANHOLE
BOT	BOTTOM	EXC	EXCAVATE	MAX	MAXIMUM	ST	STREET
BRG	BEARING	EXIST	EXISTING	MFR	MANUFACTURE	STA	STATION
BV	BALL VALVE			MIN	MINIMUM	SY	SQUARE YARD
		FI	FIELD INLET	MISC	MISCELLANEOUS	TAN	TANGENT
CB	CATCH BASIN	FG	FINISH GRADE	MON	MONUMENT	TDH	TOTAL DYNAMIC HEAD
CEN	CENTER	FBRGL	FIBERGLASS			TEMP	TEMPORARY
CEM LIN	CEMENT LINED	FDN	FOUNDATION			TYP	TYPICAL
CMP	CORRUGATED METAL PIPE	FLX	FLEXIBLE	NITC	NOT IN THIS CONTRACT	UD	UNDERDRAIN
CO	CLEAN OUT	FLG	FLANGE	NTS	NOT TO SCALE	V	VOLTS
CF	CUBIC FEET	FLR	FLOOR	N/F	NOW OR FORMERLY	VA TEE	VALVE ANCHORING TEE
CFS	CUBIC FEET PER SECOND	FPS	FEET PER SECOND	NO OR #	NUMBER	VERT	VERTICAL
CI	CAST IRON	FT OR '	FEET				
CL	CLASS	FTG	FOOTING	OC	ON CENTER		
CONC	CONCRETE			OD	OUTSIDE DIAMETER		
CONST	CONSTRUCTION						
CONTR	CONTRACTOR	GA	GAUGE	PC	POINT OF CURVE	WG	WATER GATE
CS	CURB STOP	GAL	GALLON	PD	PERIMETER DRAIN	W/	WITH
CTR	CENTER	GALV	GALVANIZED	PI	POINT OF INTERSECTION	W/O	WITHOUT
CU	COPPER	GPD	GALLONS PER DAY	PIV	POST INDICATOR VALVE		
CY	CUBIC YARD	GPM	GALLONS PER MINUTE	PT	POINT OF TANGENT	YD	YARD

LEGEND

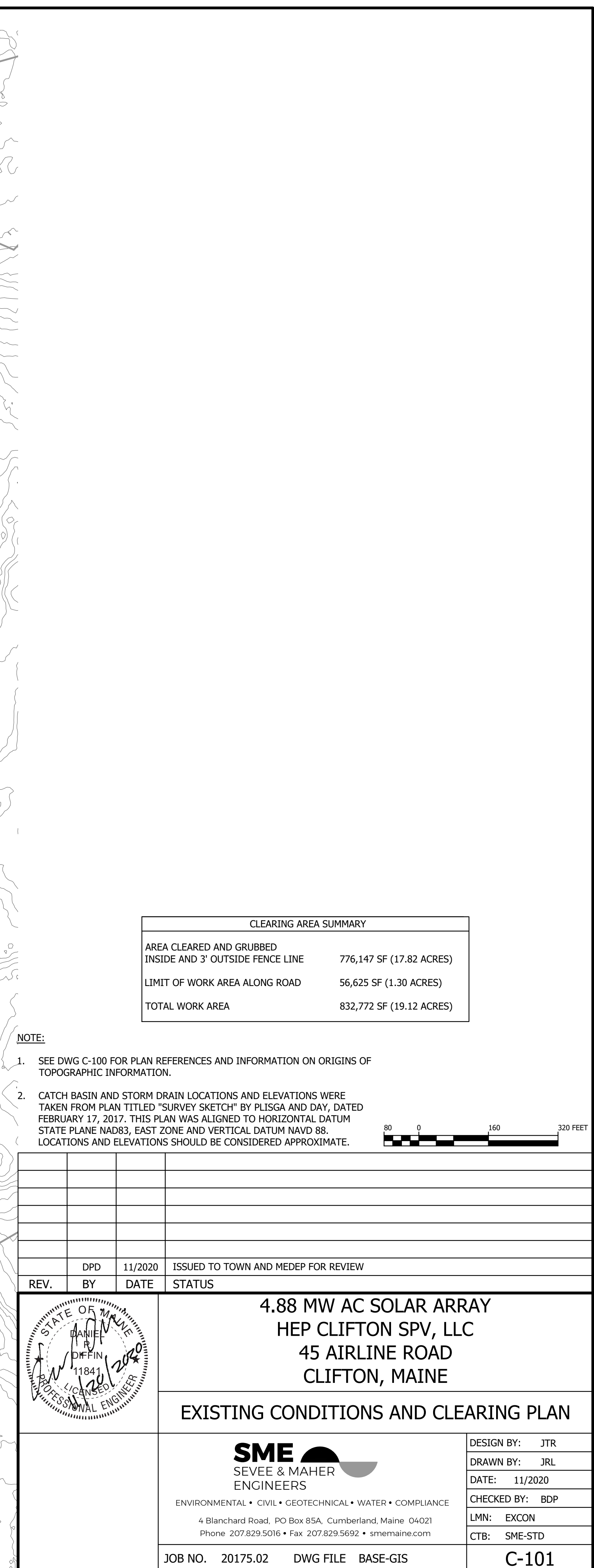
EXISTING



PROPOSED



	DPD	11/2020	ISSUED TO TOWN AND MEDEP FOR REVIEW
REV.	BY	DATE	STATUS
4.88 MW AC SOLAR ARRAY HEP CLIFTON SPV, LLC 45 AIRLINE ROAD CLIFTON, MAINE			
GENERAL NOTES, LEGEND, AND ABBREVIATIONS			
			DESIGN BY: JTR
			DRAWN BY: JRL
			DATE: 11/2020
			CHECKED BY: BDP
			LMN: NONE
			CTB: SME-STD
JOB NO.	20175.02	DWG FILE	GEN-NOTES-LGND
			C-100





NOTE:

- SEE DWG C-100 FOR PLAN REFERENCES AND INFORMATION ON ORIGINS OF TOPOGRAPHIC INFORMATION.
- AERIAL IMAGE FROM GOOGLE EARTH, DATED JUNE 21, 2018.

REV.	BY	DATE	STATUS
	DPD	11/2020	ISSUED TO TOWN AND MEDEP FOR REVIEW

STATE OF MAINE

DANIEL DUFFIN

1184

PROFESSIONAL ENGINEER

11/2020

4.88 MW AC SOLAR ARRAY

HEP CLIFTON SPV, LLC

45 AIRLINE ROAD

CLIFTON, MAINE

SITE OVERVIEW PLAN

SME

SEVEE & MAHER

ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021

Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY: JTR

DRAWN BY: JRL

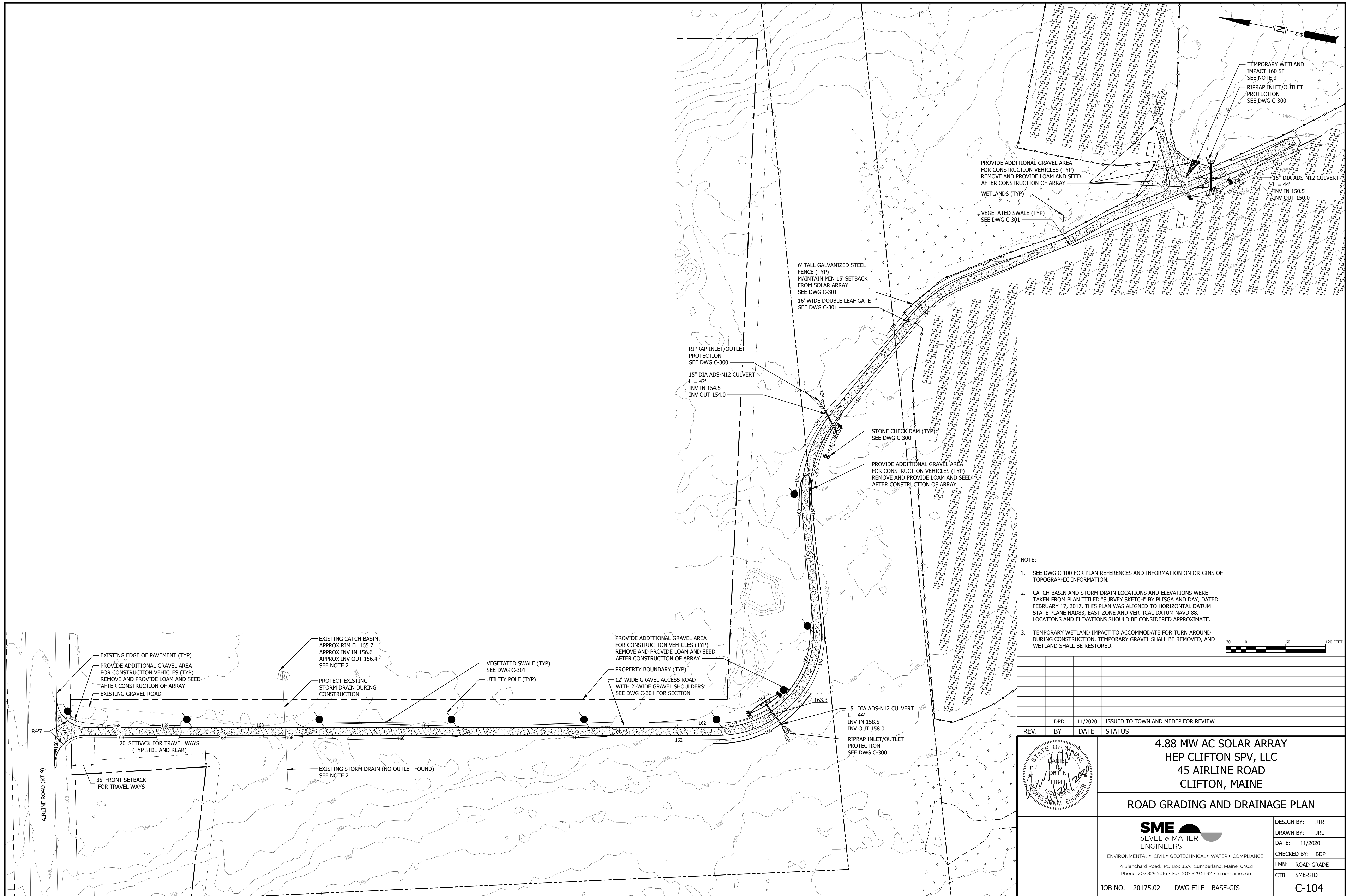
DATE: 11/2020

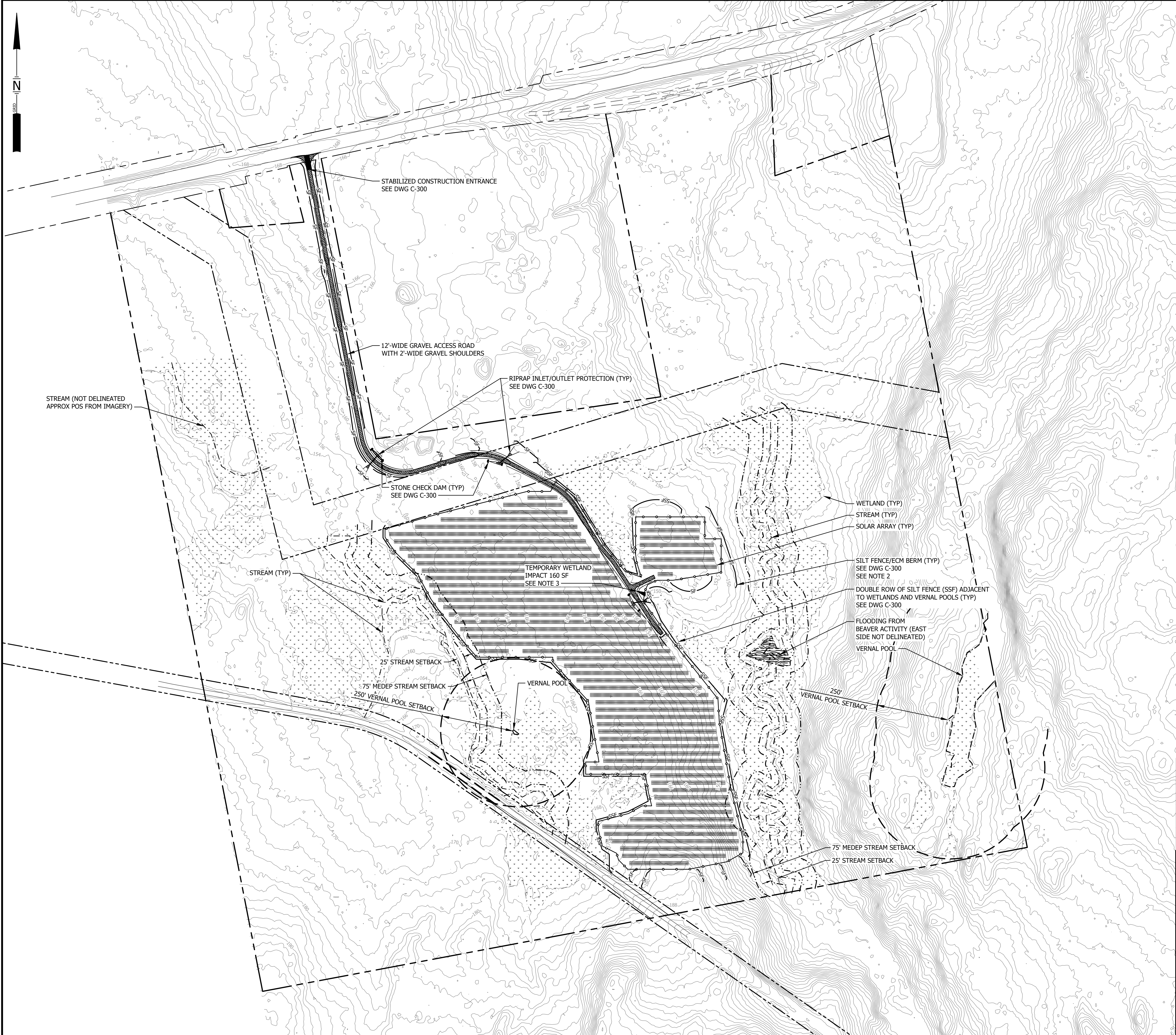
CHECKED BY: BDP

LMN: SITEOVER

CTB: SME-STD

JOB NO. 20175.02 DWG FILE BASE-GIS C-102





NOTES:

- SEE DWG C-100 FOR PLAN REFERENCES AND ORIGINS OF TOPOGRAPHIC INFORMATION.
- SILT FENCE/ECB BERM LOCATIONS ARE APPROXIMATE. SILT FENCE/ECB BERMS SHALL BE INSTALLED "ON-CONTOUR" TO MATCH TOPOGRAPHY OBSERVED ON-SITE. ENDS OF SILT FENCES/ECB BERMS SHALL BE INSTALLED UP-CONTOUR ONE FOOT TO PREVENT "RUN-AROUND" OF STORMWATER.
- TEMPORARY WETLAND IMPACT TO ACCOMMODATE FOR TURN AROUND DURING CONSTRUCTION. TEMPORARY GRAVEL SHALL BE REMOVED, AND WETLAND SHALL BE RESTORED.
- PROVIDE ADDITIONAL EROSION CONTROL MIX BARRIER OR SILT FENCE AT DOWNSLOPE OF ACTIVE CONSTRUCTION AREAS AS NEEDED FOR SEDIMENT CONTROL.
- PROVIDE TEMPORARY SEDIMENT BASINS AS NEEDED IN DOWNSLOPE PORTIONS OF ACTIVE WORK AREA. ALL BASINS SHALL BE PER MAINE EROSION AND SEDIMENT CONTROL HANDBOOK, BMP'S.
- IN AREAS WITH TREE CLEARING AND GRUBBING NOT DESIGNATED AS REGRADED, SMOOTH EXISTING SURFACE AND SEED WITH NEW ENGLAND MEADOW MIX.
- NO MORE THAN 5 ACRES WILL BE DISTURBED AT ANY ONE TIME BEFORE TEMPORARY OR PERMANENT STABILIZATION. PLACE TEMPORARY SOIL STABILIZATION WITHIN 14 DAYS OF INITIAL DISTURBANCE. PLACE PERMANENT SOIL STABILIZATION WITHIN 7 DAYS OF FINAL GRADING.

80 0 160 320 FEET

REV.	BY	DATE	STATUS
	DPD	11/2020	ISSUED TO TOWN AND MEDEP FOR REVIEW

STATE OF MAINE
DANIEL R. DUFFIN
11841
11/2020
PROFESSIONAL ENGINEER

4.88 MW AC SOLAR ARRAY
HEP CLIFTON SPV, LLC
45 AIRLINE ROAD
CLIFTON, MAINE

EROSION CONTROL PLAN

SME
SEVEE & MAHER
ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY: JTR
DRAWN BY: JRL
DATE: 11/2020
CHECKED BY: BDP
LMN: EROS
CTB: SME-STD

JOB NO.	20175.02	DWG FILE	BASE-GIS	C-105
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EROSION CONTROL NOTES:

A. GENERAL

- All soil erosion and sediment control will be done in accordance with: (1) the Maine Erosion and Sediment Control Handbook: Best Management Practices, Maine Department of Environmental Protection (MEDEP), October 2016.
- The site Contractor (to be determined) will be responsible for the repair/replacement/maintenance of all erosion control measures until all disturbed areas are stabilized.
- Disturbed areas will be permanently stabilized within 7 days of final grading. Disturbed areas not to be worked upon within 14 days of disturbance will be temporarily stabilized within 7 days of the disturbance.
- In all areas, removal of trees, bushes and other vegetation, as well as disturbance of topsoil will be kept to a minimum while allowing proper site operations.
- Any suitable topsoil will be stripped and stockpiled for reuse as directed by the Owner. Topsoil will be stockpiled in a manner such that natural drainage is not obstructed and no off-site sediment damage will result. In any event, stockpiles will not be located within 100 feet of wetlands and will be at least 50 feet upgradient of the stockpile's perimeter silt fence. The sideslopes of the topsoil stockpile will not exceed 2:1. Silt fence will be installed around the perimeter of all topsoil stockpiles. Topsoil stockpiles will be surrounded with siltation fencing and will be temporarily seeded with Aroostook rye, annual or perennial ryegrass within 7 days of formation, or temporarily mulched.

B. TEMPORARY MEASURES

1. STABILIZED CONSTRUCTION ENTRANCE/EXIT

A crushed stone stabilized construction entrance/exit will be placed at any point of vehicular access to the site, in accordance with the detail shown on this sheet.

2. SILT FENCE

- Silt fence will be installed prior to all construction activity, where soil disturbance may result in erosion. Silt fence will be erected at locations shown on the plans and/or downgradient of all construction activity.
- Silt fences will be removed when they have served their useful purpose, but not before the upgradient areas have been permanently stabilized.
- Silt fences will be inspected immediately after each rainfall and at least daily during prolonged rainfall. They will be inspected if there are any signs of erosion or sedimentation below them. Any required repairs will be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them, they will be replaced with a temporary crushed stone check dam.
- Sediment deposits will be removed after each storm event if significant build-up has occurred or if deposits exceed half the height of the barrier.

3. STONE CHECK DAMS

Stone check dams will be installed in grass-lined swales and ditches during construction.

4. EROSION CONTROL MIX SEDIMENT BARRIER

- Where approved, erosion control mix sediment barriers may be used as a substitute for silt fence. See the details in this drawing set for specifications.
- Rock Filter Berms: To provide more filtering capacity or to act as a velocity check dam, a berm's center can be composed of clean crushed rock ranging in size from the french drain stone to riprap.

5. TEMPORARY SEEDING

Stabilize disturbed areas that will not be brought to final grade and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.

6. TEMPORARY MULCHING

Use temporary mulch in the following locations and/or circumstances:

- In sensitive areas (within 100 feet of streams, wetlands and in lake watersheds) temporary mulch will be applied within 7 days of exposing spill or prior to any storm event.
- Apply temporary mulch within 14 days of disturbance or prior to any storm event in all other areas.
- Areas which have been temporarily or permanently seeded will be mulched immediately following seeding.
- Areas which cannot be seeded within the growing season will be mulched for over-winter protection and the area will be seeded at the beginning of the growing season.
- Mulch can be used in conjunction with tree, shrub, vine, and ground cover plantings.
- Mulch anchoring will be used on slopes greater than 5 percent in late fall (past October 15), and over-winter (October 15 - April 15).

The following materials may be used for temporary mulch:

- Hay or Straw material shall be air-dried, free of seeds and coarse material. Apply 2 bales/1,000 sf or 2 tons/acre to cover 90% of ground surface.
- Erosion Control Mix: It can be used as a stand-alone reinforcement:
 - on slopes 2 horizontal to 1 vertical or less;
 - on frozen ground or forested areas; and
 - at the edge of gravel parking areas and areas under construction.
- Erosion control mix alone is not suitable:
 - on slopes with groundwater seepage;
 - at low points with concentrated flows and in gullies;
 - at the bottom of steep perimeter slopes exceeding 100 feet in length;
 - below culvert outlet aprons; and around catch basins and closed storm systems.
- Chemical Mulches and Soil Binders: Wide ranges of synthetic spray-on materials are marketed to protect the soil surface. These are emulsions that are mixed with water and applied to the soil. They may be used alone, but most often are used to hold wood fiber, hydro-mulches or straw to the soil surface.
- Erosion Control Blankets and Mats: Mats are manufactured combinations of mulch and netting designed to retain soil moisture and modify soil temperature. During the growing season (April 15 to October 15) use mats indicated on drawings or North American Green (NAG) S75 (or mulch and netting) on:
 - the base of grassed waterways;
 - steep slopes (15 percent or greater); and
 - any disturbed soil within 100 feet of lakes, streams, or wetlands.

During the late fall and winter (October 15 to April 15) use heavy grade mats indicated on drawings for NAG SC250 on all areas noted above plus use lighter grade mats NAG S75 (or mulch and netting) on:

- sideslopes of grassed waterways; and moderate slopes (between 8 and 15 percent).

C. TEMPORARY DUST CONTROL

To prevent the blowing and movement of dust from exposed soil surfaces, and reduce the presence of dust, use water or calcium chloride to control dusting by preserving the moisture level in the road surface materials.

D. CONSTRUCTION DE-WATERING

- Water from construction de-watering operations shall be cleaned of sediment before reaching wetlands, water bodies, streams or site boundaries. Utilize temporary sediment basins, erosion control soil filter berms backed by staked hay bales, A Dirt Bag 55" sediment filter bag by ACF Environmental, or other approved Best Management Practices (BMP's).
- In sensitive areas near streams or ponds, discharge the water from the de-watering operation into a temporary sediment basin created by a surrounding filter berm of uncompacted erosion control mix immediately backed by staked hay bales (see the site details). Locate the temporary sediment basin at least 100 feet from the nearest water body, such that the filtered water will flow through undisturbed vegetated soil areas prior to reaching the water body or property line.

E. PERMANENT MEASURES

- Riprapped Aprons: All storm drain pipe outlets and the inlet and outlet of culverts will have riprap aprons to protect against scour and deterioration.
- Topsoil, Seed, and Mulch: All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, seeded, and mulched.

Seeded Preparation: Use stockpiled materials spread to the depths shown on the plans, if available. Approved topsoil substitutes may be used. Grade the site as needed.

- Seeding will be completed by August 15 of each year. Late season seeding may be done between August 15 and October 15. Areas not seeded or which do not obtain satisfactory growth by October 15, will be seeded with Aroostook Rye or mulched. After November 1, or the first killing frost, disturbed areas will be seeded at double the specified application rates, mulched, and anchored.

PERMANENT SEEDING SPECIFICATIONS

Mixture:	Roadside (lbs/acre)	Landfill (lbs/acre)
Kentucky Bluegrass	20	110
White Clover	5	0
Creeping Red Fescue	20	110
Perennial Ryegrass	5	30

- Mulch in accordance with specifications for temporary mulching.
- If permanent vegetated stabilization cannot be established due to the season of the year, all exposed and disturbed areas not to undergo further disturbance are to have dormant seeding applied and be temporarily mulched to protect the site.

- Ditches and Channels: All ditches on-site will be lined with North American Green S75 erosion control mesh (or an approved equal) upon installation of loam and seed.

F. WINTER CONSTRUCTION AND STABILIZATION

- Winter excavation and earthwork will be completed to minimize exposed areas while satisfactorily completing the project. Limit exposed areas to those areas in which work is to occur during the following 15 days and that can be mulched in one day prior to any snow event. All areas will be considered denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded, and mulched.

Install any added measures necessary to control erosion/sedimentation. The particular measure used will be dependent upon site conditions, the size of the area to be protected, and weather conditions.

To minimize areas without erosion control protection, continuation of earthwork operations on additional areas will not begin until the exposed soil surface on the area being worked has been stabilized.

- Natural Resource Protection: During winter construction, a double-row of sediment barriers (i.e., silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area. Projects crossing the natural resource will be protected a minimum distance of 100 feet on either side from the resource.

- Sediment Barriers: During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

4. Mulching:

- All areas will be considered to be denuded until seeded and mulched. Hay and straw mulch will be applied at a rate of twice the normal accepted rate.
- Mulch will not be spread on top of snow.
- After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.
- Between the dates of November 1 and April 15, all mulch will be anchored by either mulch netting, emulsion chemical, tracking or wood cellulose fiber.

- Soil Stockpiling: Stockpiles of soil or subsoil will be mulched for over-winter protection with hay or straw at twice the normal rate or with a 4-inch layer of erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpiles shall not be placed (even covered with mulch) within 100 feet from any natural resources.

- Seeding: Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas will receive 4 inches of loam and seed at an application rate of three times the rate for permanent seeding. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) will be revegetated by replacing loam, seed, and mulch.

If dormant seeding is not used for the site, all disturbed areas will be revegetated in the spring.

- Maintenance: Maintenance measures will be applied as needed during the entire construction season. After each rainfall, snow storm, or period of thawing and runoff, the site Contractor will perform a visual inspection of all installed erosion control measures and perform repairs as needed to ensure their continuous function.

Following the temporary and/or final seeding and mulching, the Contractor will, in the spring, inspect and repair any damages and/or bare spots. An established vegetative cover means a minimum of 85 to 90 percent of areas vegetated with vigorous growth.

G. OVER-WINTER CONSTRUCTION EROSION CONTROL MEASURES

- Stabilization of Disturbed Soil: By October 15, all disturbed soils on areas having a slope less than 15 percent will be seeded and mulched. If the Contractor fails to stabilize these soils by this date, then the Contractor shall stabilize the soil for late fall and winter, by using either temporary seeding or mulching.

- Stabilization of Disturbed Slopes: All slopes to be vegetated will be completed by October 15. The Owner will consider any area having a grade greater than 15 percent (6.5H:1V) to be a slope. Slopes not vegetated by October 15 will receive one of the following actions to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mesh.
- Stabilize the slope with erosion control mix.
- Stabilize the slope with stone riprap.

- Stabilization of Ditches and Channels: All stone-lined ditches and channels to be used to convey runoff through the winter will be constructed and stabilized by November 15. Grass-lined ditches and channels will be complete by September 15. Grass-lined ditches not stabilized by September 15 shall be lined with either sod or riprap.

H. MAINTENANCE PLAN

- Routine Maintenance: Inspection will be performed as outlined in the project's Erosion Control Plan. Inspection will be by a qualified person during wet weather to ensure that the facility performs as intended. Inspection priorities will include checking erosion controls for accumulation of sediments.

I. Housekeeping

- Spill prevention. Controls must be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

- Groundwater protection. During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

- Fugitive sediment and dust. Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

- Debris and other materials. Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

- Trench or foundation de-watering. Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

- Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

- Additional requirements. Additional requirements may be applied on a site-specific basis.

J. CONSTRUCTION SEQUENCE

In general, the expected sequence of construction for each phase is provided below. Construction is proposed to start in Spring 2021 and be complete in Spring 2022.

- Mobilization.
- Provide temporary erosion control measures.
- Install site access roads and rough utilities.
- Install panel foundations and equipment pads.
- Install racking, panels, transformers, switch gear, and fence.
- Provide site stabilization and remove temporary erosion control measures.

