



Modification to Approved Project
City of Rochester, New Hampshire

Case # 240-49-A-22 Property Address 60 Shaw Drive

Type of project: Site Plan ☒; Subdivision ☐; Line Adjustment ☐; Other ☐

Project name GNM Solar 17, LLC - Agrivoltaics Field

Date of original Planning Board approval November 7, 2022

Description of modification: The proposed solar tracker locations were shifted slightly to comply with the
NHDES Alteration of Terrain requirements for ground slopes. The proposed roadway improvements to Shaw Drive
were shorten and the impacts to the wetlands were drastically reduced. The proposed power to the facility will be from Shaw Drive
electrical infrastructure rather than from across the railroad tracks.

Applicant Name: GNM Solar 17, LLC, c/o Packy Campbell

Mailing Address 123 Washington Street, Rochester NH 03867

Phone Number: 603-765-9101 Email Address: packyc@rsarealty.com

Please note: *Modifications are reviewed by the Planning Board but no public hearing is held and no notices are required. (In contrast, projects, which are considered to have a potential impact upon abutters, are considered amendments for which notice and a public hearing is required.) There is a \$125.00 fee for a modification.*

Name of applicant or agent filling out this form Scott Lawler, PE; Norway Plains Associates, Inc.

Please check box: Applicant ☐ Agent ☒

Signature of person completing form:  Date: 06/30/2023

Signature of property owner (if different): _____ Date: _____

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (03867)
Rochester, NH 03866-0249
Phone (603) 335-3948 / (800) 479-3948
www.norwayplains.com



P. O. Box 268
31 Mooney St.
Alton, NH 03809
Phone & Fax (603) 875-3948

June 30, 2023

Ryan O'Connor, Chief Planner
Department of Planning and Development
City Hall Annex
33 Wakefield Street
Rochester, NH 03867-1917

Re: Case #240-49-A-22; Proposed Agrivoltaics Field; 60 Shaw Drive; Modification to Approved Project Application.

Dear Ryan:

The following is a summary of the plan revisions that the applicant is seeking approval. These revisions were the result of ongoing permitting processes with the State of New Hampshire Department of Environmental Services and Eversource.

- **Shaw Drive Improvements.** The proposed reconstruction of Shaw Drive has been revised to reduce the overall length of upgrades. The proposed roadwork will stop after the first wetland crossing at an existing turn-out. The main reason for terminating the improvements at this location was to drastically reduce the overall impacts to the jurisdictional wetlands. Under the originally approved site plans, the impacts, temporary and permanent, was approximately 10,100 square feet. However, by eliminating the two larger crossing, the impacts were decreased to 1,626 square feet of temporary and permanent impacts. With the reduction, NHDES was able to issue a permit for the proposed roadway reconstruction. Please find the attached NHDES permit 2023-00870.

The proposed plans continue to depict a proposed culvert at the wetlands crossing and upgrades to Shaw Drive to achieve safe passage for emergency vehicles of 20 feet from shoulder to shoulder starting at the end of the Class V approximately 500 feet to the existing turn-out. Please refer to Sheets C-1 through C-4 of the plan set.

- **Connection to the Eversource electrical grid.** The site plans were revised to depict a new connection to the electrical grid via Shaw Drive. The original approved plans depicted connection from the proposed development to the grid on the south side of the railroad tracks near Albany International. Initially, this had been the preferred connection based on meetings between the applicant and Eversource. However, it was determined that additional wetlands impacts were likely necessary to provide year-round access to the utility poles on the other side of the railroad tracks. Eventually, the applicant and Eversource were able to agree that upgrades would be made to the existing electrical system on Shaw Drive to allow for the connection of the solar tracker facility. This change in connection methods was also a driving force in allowing for less wetland impacts on the Class VI section of Shaw Drive.

The plans were revised to depict the existing utility poles and overhead wires on Shaw Drive north of the proposed project. The Utility Plan, sheet C-3, depicts proposed utility poles and overhead electric wires down Shaw Drive and underground electric conduits from the last pole to the small utility building. As noted on the revised plan, the final placement of the poles are to be at the description of the utility company.

- **Solar Tracker Locations.** The placement of the 60 solar trackers has shifted slightly to align in such a manner as to optimize the solar efficiency. The new locations are place the trackers on existing ground slopes of 5% or less also in accordance with the NHDES Alteration of Terrain guidelines for Solar arrays. An Alteration of Terrain Permit application has been submitted to NHDES, with an approval anticipated shortly.


The plans were revised to depict the location of the 60 trackers and the proposed utility conduits that will connect them. Please refer to sheets C-1 through C-3.

- **Performance Guarantee.** Based on the new site design, the construction cost has been reduced. Attached is an updated Project Surety Schedule & Performance Guarantee worksheet.

On behalf of GNM Solar 17, LLC and Packy Campbell, I want to thank everyone within the Planning Department, Public Works Department, and other City Departments that assisted in the approval and implantation of their project. Please do not hesitate to contact me with any questions, comments, or concerns.

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: 

Scott A. Lawler, P.E., Project Engineer

Cc: GNM Solar 17, LLC



PROPOSED AGRIVOLTAICS FIELD

SHAW DRIVE

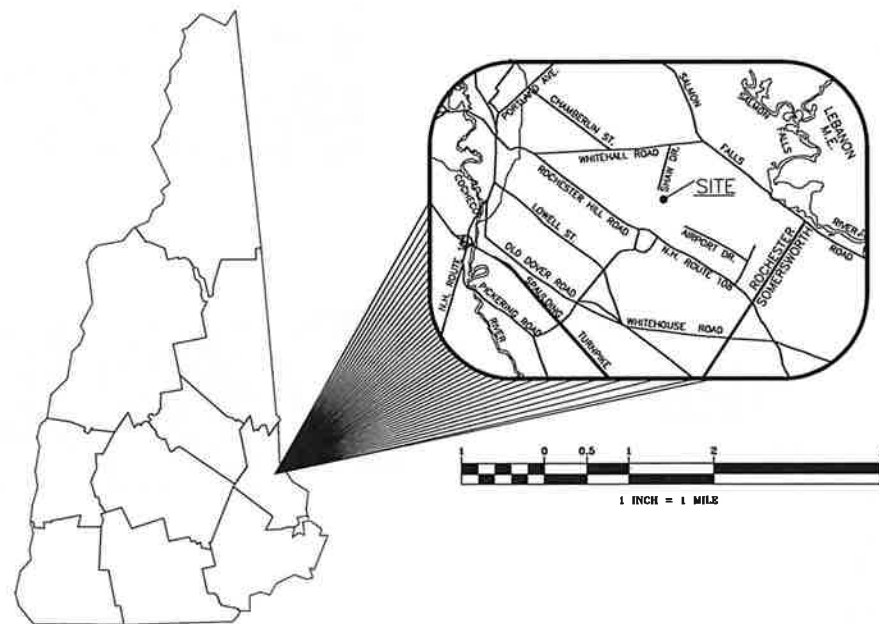
PREPARED FOR

GNM SOLAR 17, LLC

SEPTEMBER 2022

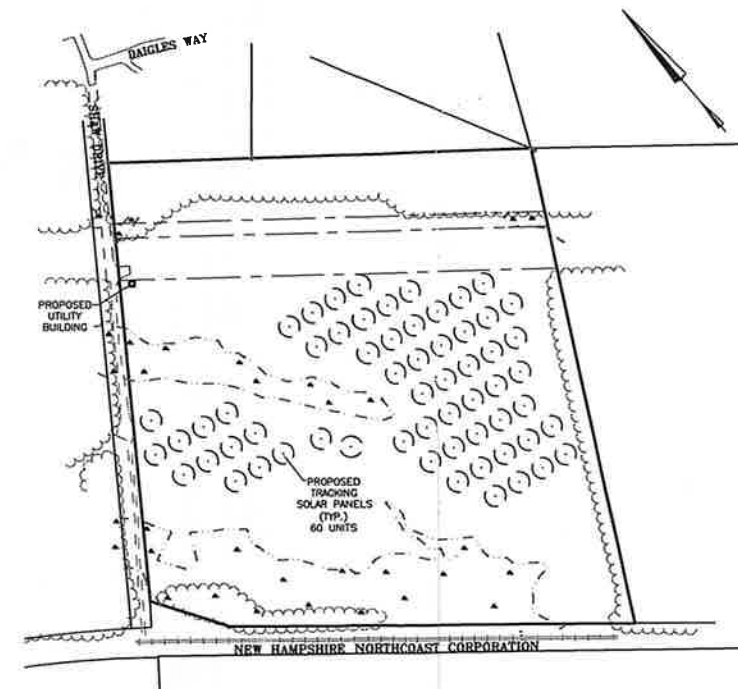
REVISED JUNE 2023

REVISIONS:
06/2/23 - REVISE PER AOT COMMENTS, MODIFY SHAW DRIVE



NEW HAMPSHIRE FISH AND GAME AOT PERMIT CONDITIONS RELATED TO THREATENED AND ENDANGERED SPECIES:

- ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB22-2361, 60 SHAW DRIVE WILDLIFE SPECIES OBSERVATION.
- PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
- IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
- THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.



OVERALL SITE

1" = 200'

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

OWNER OF RECORD
TAX MAP 240, LOT 49
GNM SOLAR 17, LLC
123 WASHINGTON STREET
ROCHESTER N.H. 03867
SCRD BOOK 4946, PAGE 485

APPLICANT
GNM SOLAR 17, LLC
123 WASHINGTON STREET
ROCHESTER, NH 03867
(603) 785-9101

STATE AND FEDERAL PERMITS:
STATE OF NEW HAMPSHIRE PERMIT NUMBERS:

NHDES ALTERATION OF TERRAIN:	AOT-2023-00870
NHDES WETLANDS PERMIT:	NOT REQUIRED
NHDES DAM PERMIT:	NOT REQUIRED
NHDES SUBDIVISION PERMIT:	NOT REQUIRED
NHDES SUBSURFACE SYSTEMS PERMIT:	NOT REQUIRED
NHDES WASTEWATER PERMIT:	NOT REQUIRED
NHDOT DRIVEWAY/ENTRANCE PERMIT:	NOT REQUIRED

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):
NPDES PERMITS ARE ONLY REQUIRED FOR PROJECTS MEETING THE DISTURBED AREA CRITERIA BELOW AND HAVING A POINT SOURCE STORMWATER DISCHARGE FROM THE SITE TO AN ADJACENT WETLAND OR WATER BODY (I.E. CULVERT, SWALE, ETC. OUTLETING TO A WETLAND, CREEK, STREAM OR RIVER).

NPDES PERMIT: REQUIRED

NPDES PERMITS CONSIST OF A NOTICE OF INTENT (NOI) FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY AT LEAST 14 DAYS PRIOR TO CONSTRUCTION COMMENCING AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BEING PREPARED, KEPT ON SITE AND FOLLOWED BY THE CONTRACTOR.

FOR STATUS OF THIS PERMIT, CONTACT THE PROJECT GENERAL CONTRACTOR.

FINAL APPROVAL BY
ROCHESTER PLANNING BOARD

CERTIFIED BY: _____ DATE: _____

SHEET INDEX		
	COVER	
SHEET E-1	EXISTING FEATURES	1" = 100'
SHEET C-1	OVERALL SITE PLAN	1" = 100'
SHEET C-2	GRADING, DRAINAGE EROSION AND SEDIMENTATION CONTROL PLAN	1" = 100'
SHEET C-3	UTILITY PLAN	1" = 50'
SHEET C-4	SHAW DRIVE IMPROVEMENT PLAN AND PROFILE	AS SHOWN
SHEET C-5	CONSTRUCTION DETAILS	AS SHOWN
SHEET C-6	TEMPORARY EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-7	PERMANENT EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN

CIVIL ENGINEERS
NORWAY PLAINS ASSOCIATES, INC.
2 CONTINENTAL BOULEVARD
ROCHESTER, NEW HAMPSHIRE 03867
(603) 335-3948

FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

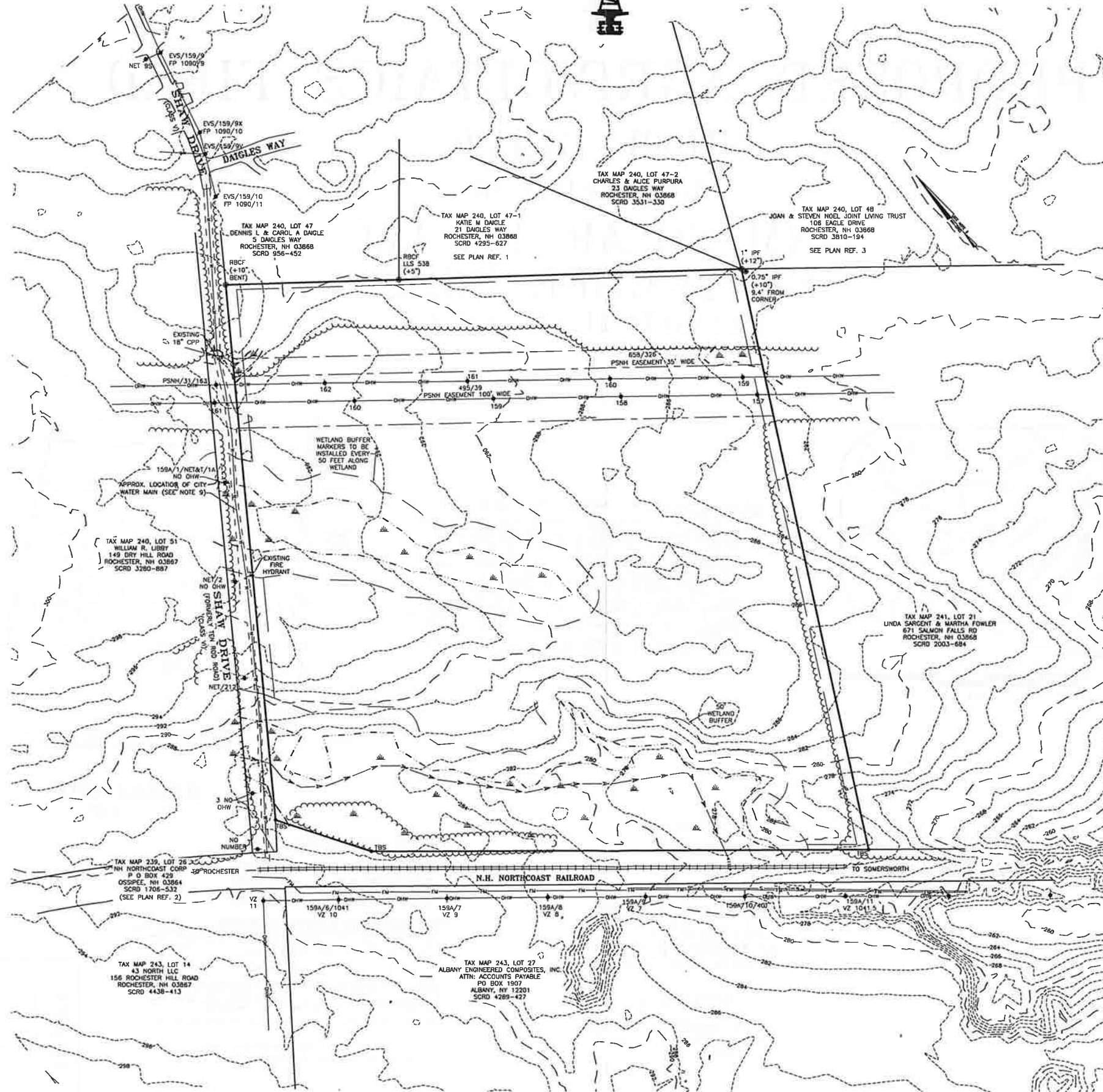
31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

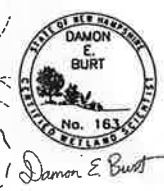
2 Continental Blvd., Rochester, N.H. 603-335-3948

LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- - - 50' WETLANDS BUFFER
- - - EXISTING OVERHEAD WIRES
- - - EXISTING DRAIN LINE
- - - EXISTING WATER LINE
- - - EXISTING UTILITY POLE
- - - EXISTING MONUMENT
- - - EXISTING HYDRANT
- - - EXISTING WATER GATE OR SHUT-OFF VALVE



- GENERAL SITE PLAN NOTES
1. THE PURPOSE OF THIS PLAN IS TO DEPICT A THE EXISTING FEATURES ON TAX MAP 240, LOT 49.
 2. TOTAL PARCEL AREA: MAP 240, LOT 49 27.60 ACRES
 3. PARCEL IS ZONED AGRICULTURAL (AG).
 4. THE SURVEYED LOT IS SERVED BY THE MUNICIPAL WATER SYSTEM. THE SURVEYED LOT HAS NO SEPTIC SYSTEM.
 5. BEARINGS SHOWN ON THIS PLAN REFER TO GRID NORTH, NH STATE PLANE, BASED ON GPS OBSERVATION TAKEN JANUARY 2022.
 6. VERTICAL DATUM NAVD83
 7. THE SURVEYED LOT IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 5/17/2005, COMMUNITY PANEL 33017C02160.
 8. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:
 - AGRICULTURAL ZONE (A):
 - MINIMUM LOT AREA = 45,000 SQ.FT.
 - MINIMUM LOT FRONTAGE = 150 FT.
 - MINIMUM YARD SETBACKS:
 - FRONT = 20 FT.
 - SIDE = 10 FT.
 - REAR = 20 FT.
 9. WATERLINE LOCATION IS APPROXIMATE BASED ON "CITY OF ROCHESTER, CONTRACT DRAWINGS FOR GRANITE STATE BUSINESS PARK WATER MAIN EXTENSION, ROCHESTER, NH, JUNE 2019, CONFORMED VERSION, AUGUST 2019, BY WRIGHT-PIERCE".
 10. WETLANDS WERE DELINEATED BY DAMON E. BURT, CWS ON MAY 13, 2022.
 11. SHAW DRIVE (FORMERLY TEN ROD ROAD) IS A CLASS V ROAD. SEE WAIVER AND RELEASE BETWEEN GRM SOLAR 17 AND THE CITY OF ROCHESTER, SCRD BOOK 5091, PAGE 31 FOR USE OF SHAW DRIVE.
- REFERENCE PLANS:
1. "SUBDIVISION PLAN FOR CAROL & DENNIS DANGLE" DATED: OCTOBER 2003 BY POHOPEK SURVEY & SEPTIC DESIGN RECORDED: SCRD B5-8
 2. "RIGHT OF WAY AND TRACK MAP, BOSTON AND MAINE RAILROAD, STA. 507+90 TO 560+70" DATED: JUNE 1914, REVISED 1935 BY BOSTON AND MAINE RAILROAD NOT RECORDED
 3. "LOT LINE REVISION, SALMON FALLS ROAD, FOR JOAN MARY & STEVEN W. NOEL, SR., TRUSTEES" DATED: MARCH 2014, BY NORWAY PLAINS ASSOCIATES, INC. RECORDED: SCRD 107-41
 4. "CITY OF ROCHESTER CONTRACT DRAWINGS FOR GRANITE STATE BUSINESS PARK WATER MAIN EXTENSION, ROCHESTER, NH JUNE 2019, CONFORMED VERSION AUGUST 2019" PREPARED BY WRIGHT-PIERCE ON FILE WITH THE CITY OF ROCHESTER



WETLAND INFORMATION:

A) Wetlands were delineated by Froggie Rock Environmental on May 13, 2022 according to the 1987 Corps of Engineers Wetlands Delineation Manual, U.S. Army Corps of Engineers, January 1987 and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeast and Northcentral Regions, U.S. Army Corps of Engineers, January 2012.

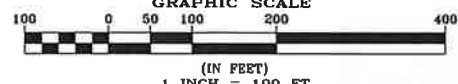
B) Hydric soils were identified using the Field Indicators of Hydric Soils in the United States, A guide for identifying and Delineating Hydric Soils, Version 7.0, 2010 and Field Indicators for Identifying Hydric Soils in New England, Version 3, NHEPIC Wetlands Work Group (May 2004).

C) Wetlands were classified by Froggie Rock Environmental utilizing the criteria of the US Fish & Wildlife Services Manual FWS/OBS-79/13 Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et. al. 1979).

D) Dominance of wetland vegetation was assessed by Froggie Rock Environmental, utilizing the National List of Plant Species That Occur in Wetlands: Northeast (Region 1), U.S. Fish and Wildlife Service (May 1988).

TAX MAP 240, LOT 49
OWNER OF RECORD:
GNM SOLAR 17, LLC
123 WASHINGTON STREET
ROCHESTER N.H. 03867
SCRD BOOK 4946, PAGE 485

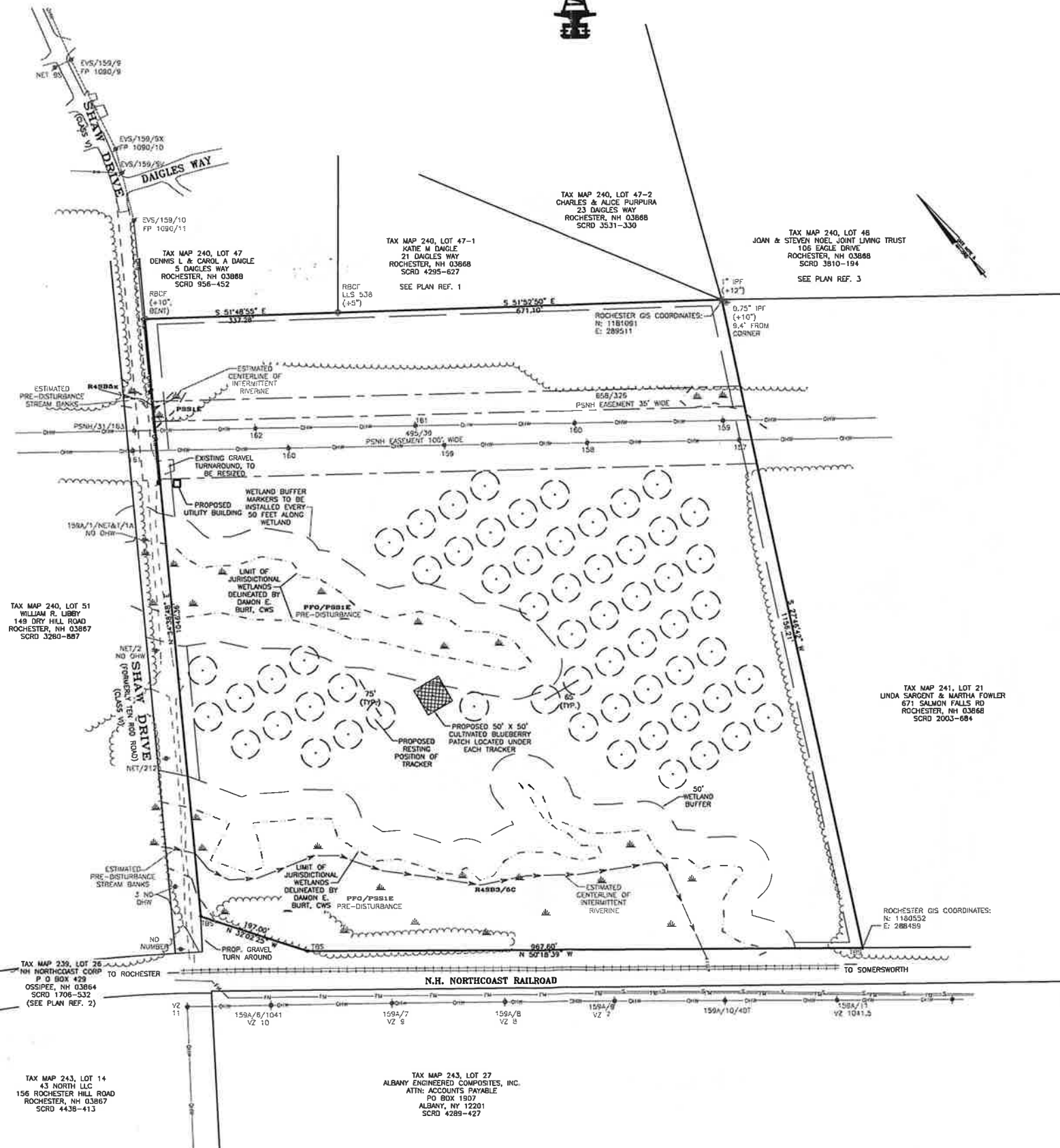
EXISTING FEATURES PLAN
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH
PREPARED FOR:
GNM SOLAR 17, LLC
APRIL 2022



FILE NO. 104
 PLAN NO. C-3235
 DWG. NO. 21033 SP-1

LEGEND

- PROPERTY LINE
 - - - JURISDICTIONAL WETLANDS
 - - - 50' WETLANDS BUFFER
 --- EXISTING OVERHEAD WIRES
 * EXISTING UTILITY POLE
 @ EXISTING MONUMENT
 --- PROPOSED OVERHEAD WIRES
 --- PROPOSED UNDERGROUND ELECTRIC
 - - - PROPOSED GRAVEL
 - - - PROPOSED DRAIN LINE
 [Hatched Box] PROPOSED BLUEBERRY PATCH
 [Circle with Center] PROPOSED SOLAR TRACKER



REVISIONS:
 10/6/22 - REVISED PER TRG COMMENTS.
 02/22/23 - REVISE SOLAR TRACKER ALIGNMENT.
 03/02/23 - REVISED PER NOD
 06/20/23 - REVISE SHAW DRIVE, MOVE UTILITY BUILDING, MOVE CONCRETE WASHOUT, REMOVE TWO WETLAND CROSSINGS.

GENERAL SITE PLAN NOTES

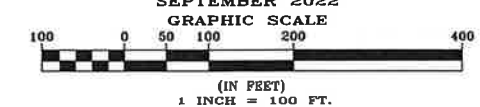
1. THE PURPOSE OF THIS PLAN IS TO DEPICT A PROPOSED SOLAR TRACKER FIELD AND BLUEBERRY PATCHES ON THE PARCEL.
2. TOTAL PARCEL AREA: MAP 240, LOT 49 27.60 ACRES
3. PARCEL IS ZONED AGRICULTURAL (AO).
4. THE SURVEYED LOT IS SERVICED BY THE MUNICIPAL WATER SYSTEM. THE SURVEYED LOT HAS NO SEPTIC SYSTEM.
5. BEARINGS SHOWN ON THIS PLAN REFER TO GRID NORTH, NH STATE PLANE, BASED ON GPS OBSERVATION TAKEN JANUARY 2022.
6. VERTICAL DATUM NAVD83
7. THE SURVEYED LOT IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 5/17/2005, COMMUNITY PANEL 33017C0216D.
8. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:
 AGRICULTURAL ZONE (A):
 MINIMUM LOT AREA = 45,000 SQ.FT.
 MINIMUM LOT FRONTAGE = 150 FT.
 MINIMUM YARD SETBACKS:
 FRONT = 20 FT.
 SIDE = 10 FT.
 REAR = 20 FT.
9. VARIANCE GRANTED BY ROCHESTER ZONING BOARD OF ADJUSTMENTS TO PERMIT A POWER GENERATION UTILITY IN THE AGRICULTURAL ZONE ON SEPTEMBER 14, 2022.
10. SHAW DRIVE MUST BE ABLE TO SUPPORT ACCESS TO THE LOT FOR EMERGENCY VEHICLES.
11. FOR MORE INFORMATION ABOUT THIS SITE PLAN, CONTACT THE CITY OF ROCHESTER PLANNING DEPARTMENT, 33 WAKEFIELD ST., ROCHESTER, NH 03867. (603) 335-1338.
12. ALL SOLAR TRACKERS SHALL BE PROGRAMMED TO REST IN A POSITION THAT IS PARALLEL TO THE SLOPES TO PREVENT CHANNELIZED FLOW AND EROSION.

REFERENCE PLANS:

1. "SUBDIVISION PLAN FOR CAROL & DENNIS DAIGLE"
 DATED: OCTOBER 2003 BY POKOPEX SURVEY & SEPTIC DESIGN
 RECORDED: SCR 85-8
2. "RIGHT OF WAY AND TRACK MAP, BOSTON AND MAINE RAILROAD, STA. 507+90 TO 560+70"
 DATED: JUNE 1914, REVISED 1935 BY BOSTON AND MAINE RAILROAD
 NOT RECORDED
3. "LOT LINE REVISION, SALMON FALLS ROAD, FOR JOAN MARY & STEVEN W. NOEL, SR., TRUSTEES"
 DATED: MARCH 2014, BY NORWAY PLAINS ASSOCIATES, INC.
 RECORDED: SCR 107-41
4. "CITY OF ROCHESTER CONTRACT DRAWINGS FOR GRANITE STATE BUSINESS PARK WATER MAIN EXTENSION, ROCHESTER, NH JUNE 2019, CONFORMED VERSION AUGUST 2019" PREPARED BY WRIGHT-PIERCE ON FILE WITH THE CITY OF ROCHESTER

TAX MAP 240, LOT 49
 OWNER OF RECORD:
 GNM SOLAR 17, LLC
 123 WASHINGTON STREET
 ROCHESTER N.H. 03867
 SCR BOOK 4946, PAGE 485

OVERALL SITE LAYOUT PLAN
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH
 PREPARED FOR:
 GNM SOLAR 17, LLC
 SEPTEMBER 2022



C-1

FILE NO. 104
 PLAN NO. C-3235
 DWG. NO. 21033 SP-1

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 Continental Blvd., Rochester, N.H. 603-335-3948

LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- - - 50' WETLANDS BUFFER
- - - EXISTING TREE LINE
- - - EXISTING OVERHEAD WIRES
- - - EXISTING DRAIN LINE
- - - EXISTING SEWER LINE
- - - EXISTING FORCE MAIN SEWER LINE
- - - EXISTING WATER LINE
- - - EXISTING UTILITY POLE
- - - EXISTING MONUMENT
- - - EXISTING HYDRANT
- - - EXISTING WATER GATE OR SHUT-OFF VALVE
- - - PROPOSED OVERHEAD WIRES
- - - PROPOSED UNDERGROUND ELECTRIC
- - - PROPOSED EROSION CONTROL MIX BERM
- - - PROPOSED SILT FENCE
- - - STABILIZED CONSTRUCTION EXIT



REVISIONS:
10/06/22 - REVISED PER TRG COMMENTS.
12/15/22 - ADD CONSTRUCTION SEQUENCE NOTES.
02/22/23 - REVISE SOLAR TRACKER ALIGNMENT.
06/23/23 - MODIFY SHAW DRIVE, MOVE UTILITY BUILDING

CONSTRUCTION SEQUENCE

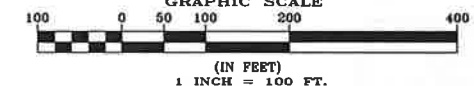
- NOTES:
1. ESTABLISH STAGING AREA AS SHOWN ON CONSTRUCTION PLAN. USE THIS AREA FOR ALL MATERIAL STORAGE AND CONSTRUCTION EQUIPMENT.
 2. INSTALL EROSION CONTROL BERM AS SHOWN.
 3. REMOVE AND STOCKPILE WETLAND SOILS FROM SHAW DRIVE RECONSTRUCTION. STOCK PILE SHALL BE DONE ON SITE AND IN UPLAND AREAS. THE SOIL SHALL BE REUSED AS PART OF THE TEMPORARY WETLAND IMPACT AND RESTORATION AREAS.
 4. INSTALL ALL CROSS CULVERTS WITH HEADWALLS.
 5. BRUSH SHALL DRIVE UP TO SUB GRADE WITH SUITABLE FILL.
 6. INSTALL PROCESSED GRAVELS ON SHAW DRIVE IN ACCORDANCE WITH SHEET C-4.
 7. CONSTRUCT A LAY-DOWN AREA IN THE LOCATION SHOWN.
 8. WORKING FROM THE END OF THE PATH, DIG TRENCH FOR UNDERGROUND CONDUIT.
 9. DIG AREA FOR EACH TRACKING PANEL FOUNDATION.
 10. INSTALL UNDERGROUND CONDUIT 30" BELOW GRADE AND SURROUND IN SAND BOX AS SHOWN IN DETAIL ON SHEET C-4. CONDUIT RUN SHALL BE DONE TO AVOID REMOVAL OF TREE STUMPS.
 11. INSTALL FOUNDATION FOR SOLAR TRACKERS.
 12. INSTALL SOLAR TRACKERS.
 13. ALL CONSTRUCTION EQUIPMENT SHALL NOT DRIVE OR DISTURB ANY LAND OUTSIDE OF THE PROPOSED TRACKERS AND UNDERGROUND CONDUIT LOCATIONS.
 14. RESTORE AROUND THE TRACKERS AND OVER THE CONDUITS TO EXISTING CONDITIONS USING NEW ENGLAND SEED AT THE END OF CONSTRUCTION.
 15. REMOVE ALL EROSION CONTROL MEASURES ONCE THE LAND IS STABILIZED.

TAX MAP 240, LOT 49
OWNER OF RECORD:
GNM SOLAR 17, LLC
123 WASHINGTON STREET
ROCHESTER N.H. 03867
SCRD BOOK 4946, PAGE 485

GRADING, DRAINAGE, EROSION & SEDIMENTATION CONTROL PLAN

TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH

PREPARED FOR:
GNM SOLAR 17, LLC
SEPTEMBER 2022
GRAPHIC SCALE



FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 Continental Blvd., Rochester, N.H. 603-335-3948

LEGEND

---	PROPERTY LINE
- - - -	JURISDICTIONAL WETLANDS
---	EXISTING OVERHEAD WIRES
---	EXISTING WATER MAIN
---	EXISTING GRAVITY SEWER MAIN
---	EXISTING HYDRANT
---	EXISTING WATER GATE OR SHUT-OFF VALVE
---	EXISTING UTILITY POLE
---	UGW - PROPOSED UNDERGROUND ELECTRIC WIRES
---	OHW - PROPOSED OVERHEAD WIRES
---	PROPOSED DRAIN LINE



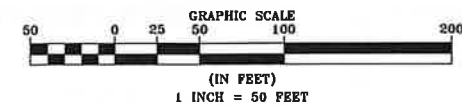
REVISIONS:
10/06/22 - REVISED PER TRG COMMENTS.
02/22/23 - REVISE SOLAR TRACKER ALIGNMENT.
06/20/23 - REVISE SHAW DRIVE, MOVE UTILITY BUILDING, REMOVE UNDERGROUND UTILITIES, REMOVE TWO WETLAND CROSSINGS.

NOTES:

- CONSTRUCTION WILL CONFORM TO THE FOLLOWING UTILITIES STANDARDS AND SPECIFICATION:
A) SANITARY SEWER DISPOSAL - CITY OF ROCHESTER
B) ELECTRIC DISTRIBUTION - EVERSOURCE
C) TELEPHONE - FAIRPOINT
D) CABLE - BREEZELINE
E) WATER - CITY OF ROCHESTER
- ALL PROPOSED ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
- WATERLINE LOCATION IS APPROXIMATE BASED ON "CITY OF ROCHESTER, CONTRACT DRAWINGS FOR, GRANITE STATE BUSINESS PARK WATER MAIN EXTENSION, ROCHESTER, NH, JUNE 2019, CONFORMED VERSION, AUGUST 2019, BY WRIGHT-PERCE".
- THE LOCATION OF THE UNDERGROUND CONDUITS SHALL BE ADJUSTED TO MINIMIZE THE OVERALL EARTH DISTURBANCE AND TO AVOID ANY LARGE STUMPS, ROCKS, OR LEDGE.
- THE PROPOSED ELECTRIC WIRES WILL BE INSTALLED EITHER OVERHEAD OR UNDER THE RAILROAD AS AGREED UPON BY BOTH EVERSOURCE AND N.H. NORTHEAST RAILROAD.

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITH IN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

UTILITY PLAN
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH
PREPARED FOR:
GNM SOLAR 17, LLC
SEPTEMBER 2022



FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 Continental Blvd., Rochester, N.H. 603-335-3948

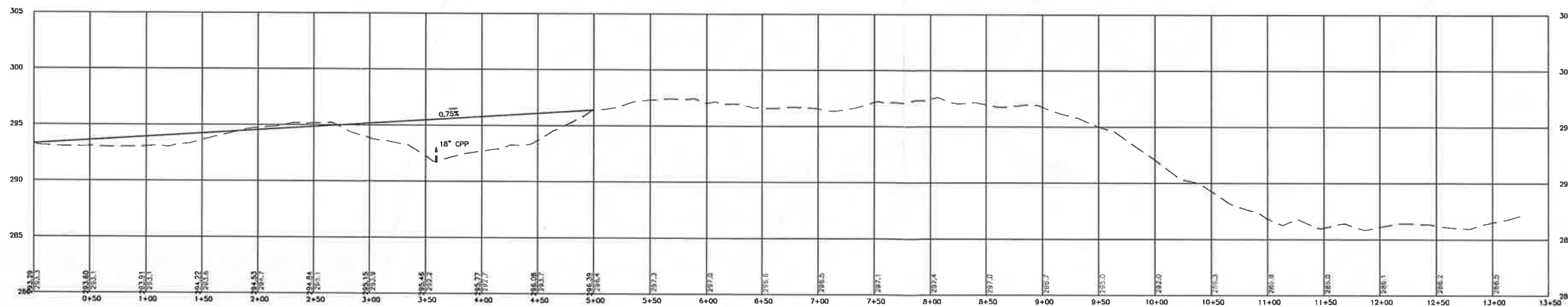
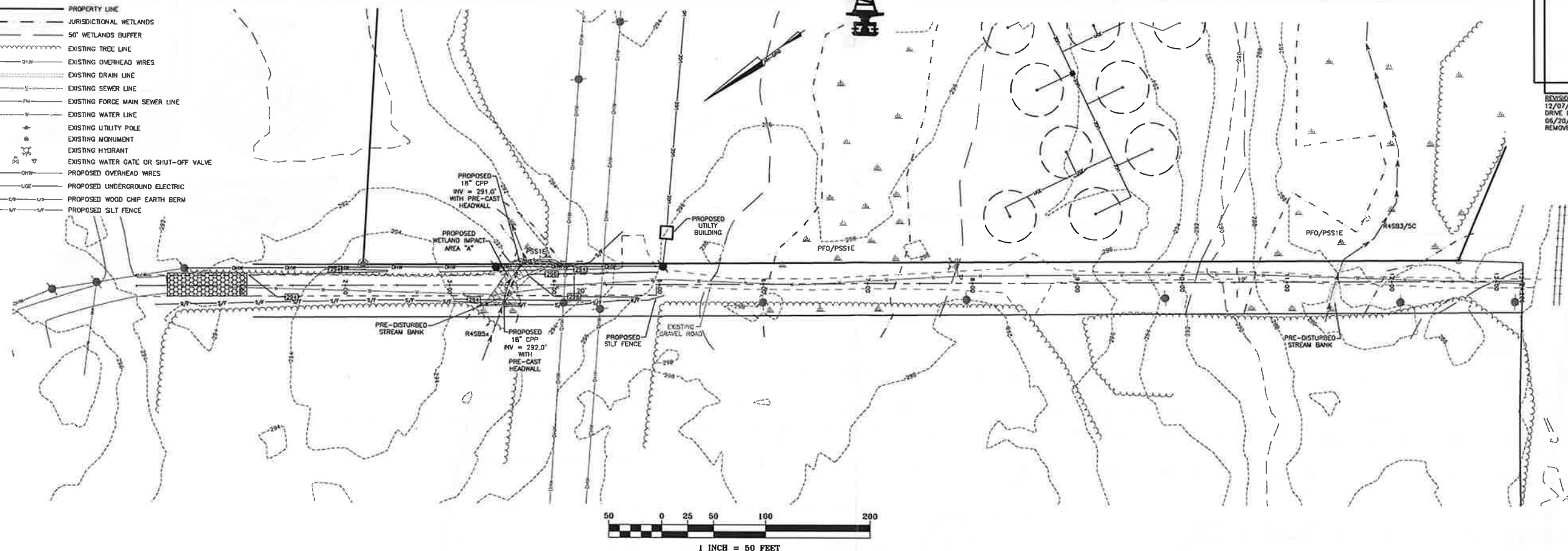
LAND SURVEYORS

CIVIL ENGINEERS

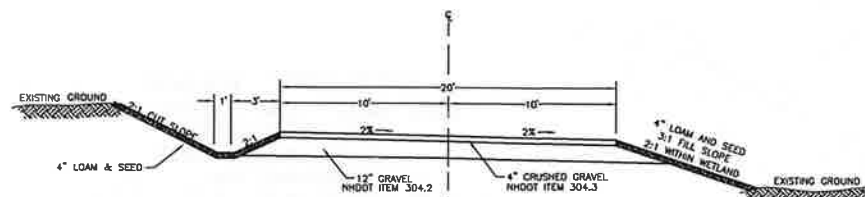
LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- 50' WETLANDS BUFFER
- EXISTING TREE LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN LINE
- EXISTING SEWER LINE
- EXISTING FORCE MAIN SEWER LINE
- EXISTING WATER LINE
- EXISTING UTILITY POLE
- EXISTING MONUMENT
- EXISTING HYDRANT
- EXISTING WATER GATE OR SHUT-OFF VALVE
- PROPOSED OVERHEAD WIRES
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED WOOD CHIP EARTH BERM
- PROPOSED SILT FENCE

REVISIONS:
12/07/2022 - REVISE TYPICAL CROSS SECTIONS AND SHAW DRIVE RECONSTRUCTION NOTES.
04/20/23 - REVISE SHAW DRIVE, MOVE UTILITY BUILDING, REMOVE TWO WETLAND CROSSINGS, REVISE PROFILE.



HORIZONTAL - 1 INCH = 50 FEET
VERTICAL - 1 INCH = 5 FEET



SHAW DRIVE CROSS-SECTIONS

1 INCH = 5 FEET

WETLANDS IMPACTS

AREA	PERMANENT WETLAND IMPACT (SQUARE FOOT)	TEMPORARY WETLANDS IMPACT (SQUARE FOOT)
A	968 SF	286 SF

SURFACE WATER IMPACTS

AREA	STREAM WETLAND IMPACT (LINEAR FEET)	STREAM BANK WETLANDS IMPACT (SQUARE FOOT)
A	50 LF	392 SF

SHAW DRIVE RECONSTRUCTION NOTES:

1. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES AS DEPICTED ON THE PLANS.
2. REMOVE ALL TOP SOIL AND WETLAND SOILS FROM THE ROADWAY AND SIDE SLOPE AREAS. WETLAND SOILS SHALL BE REUSED FOR ALL TEMPORARY WETLAND AREAS OR WETLAND RESTORATION AREAS.
3. ALL STOCKPILES OF TOP SOILS OR WETLAND SOILS SHALL BE LOCATED OUTSIDE THE UNITS OF ANY JURISDICTIONAL WETLANDS OR CONSERVATION OVERLAY DISTRICT AREAS.
4. INSTALL ALL DRAINAGE PIPE AND HEADWALL AS DEPICTED ON THE PLANS.
5. PLACE COMMON FILL IN 12 INCH LIFTS. COMPACT COMMON FILL TO 95% MAXIMUM PROCTOR DENSITY.
6. PLACE GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
7. PLACE CRUSHED GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
8. INSTALL A MINIMUM OF 4" OF LOAM ON THE ROADWAY SIDE SLOPES AND A MINIMUM OF 6" OF WETLAND SOILS AT ALL TEMPORARY WETLAND IMPACT AREAS.
9. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE THE SIDE SLOPES AND TEMPORARY WETLAND IMPACT AREAS ARE FULLY ESTABLISHED.

FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

31 Mooney Street, Alton, N.H. 603-875-3948

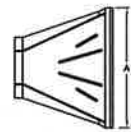
NORWAY PLAINS ASSOCIATES, INC.

SHAW DRIVE IMPROVEMENT
PLAN & PROFILE
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH

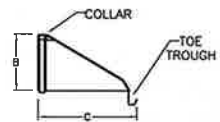
PREPARED FOR:
GNM SOLAR 17, LLC
SEPTEMBER 2022

2 Continental Blvd., Rochester, N.H. 603-335-3948

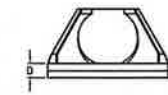
C-4



TOP VIEW



SIDE VIEW

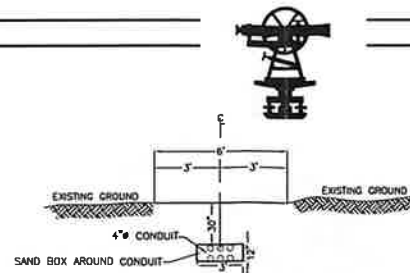


FRONT VIEW

FLAIRED END SECTION DETAIL

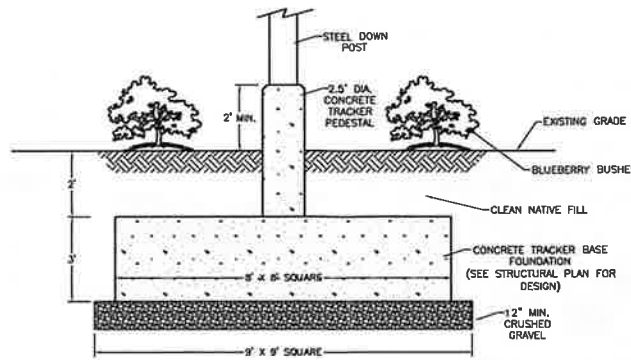
NOT TO SCALE

DIMENSIONS (INCHES)				
PIPE DIAMETERS	A	B	C	D
10" / 12"	42	14.5	33	6
15"	41	19	34	6
18"	49	22	43	6
24"	59.5	28	48	6
30"	68	36	63.5	6
36"	88	43	66.5	6



UTILITY CONDUIT CONSTRUCTION CROSS-SECTION

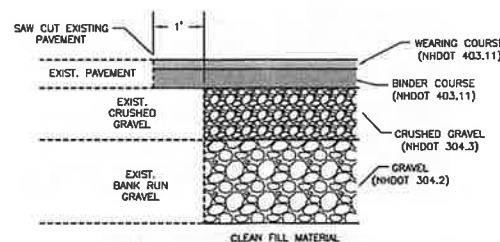
- NOTES:
1. INSTALL EROSION CONTROL BERM AS SHOWN ON SHEET C-2. THE TRENCH PATH SHALL BE PLACED TO AVOID ANY STUMPS, LEDGE OR LARGE ROCKS.
 2. DIG TRENCH FOR UNDERGROUND CONDUIT.
 3. INSTALL UNDERGROUND CONDUIT 30" BELOW GRADE AND SURROUND IN SAND BOX.
 4. RESTORE BACK TO EXISTING GRADE AND INSTALL 2-INCHES OF STUMP GRINDINGS TO ALLOW CONSTRUCTION EQUIPMENT ACCESS.



STANDARD SOLAR TRACKER INSTALLATION DETAIL

NOT TO SCALE

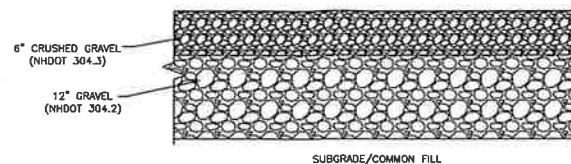
- NOTES:
1. CONCRETE TRACKER BASE OR PEDESTAL DESIGN BY OTHERS. REFER TO STRUCTURAL DESIGN.
 2. TRACKERS PLACED IN UPLAND AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM AND SEEDED WITH GRASS SEED MIXTURE, WITH MULCH.



TYPICAL PAVEMENT SAWCUT DETAIL

NOT TO SCALE

- NOTES:
1. SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED.
 2. INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
 3. PLACE BINDER COURSE.
 4. GRIND OR SAWCUT EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
 5. TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.

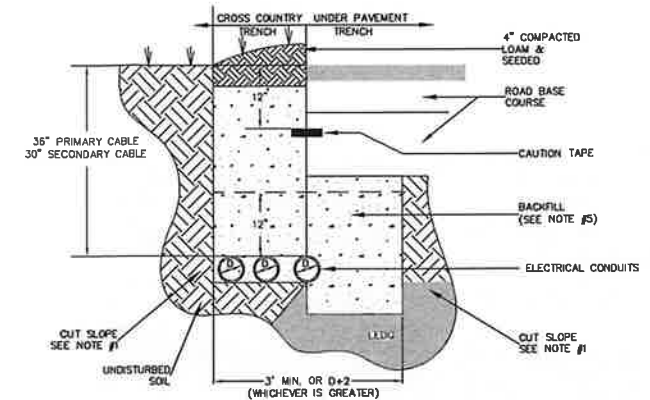


GRAVEL PARKING & TURN AROUND CROSS-SECTIONS

NOT TO SCALE

- PAVEMENT NOTES:
1. PLACE COMMON FILL IN 12 INCH LIFTS. COMPACT COMMON FILL TO 95% MAXIMUM PROCTOR DENSITY.
 2. PLACE GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
 3. PLACE CRUSHED GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.

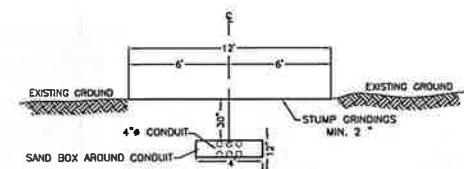
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITH IN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.



- NOTES:
1. ALL NON-METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC, AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA TC2-1998 AND BE UL LISTED. ONLY GRAY-COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. ALL PVC JOINTS MUST BE CEMENTED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
 2. ALL 90 DEGREE SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES. ALL STEEL SWEEPS WITHIN 18" OF THE SURFACE SHALL BE PROPERLY GROUNDING.
 3. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE EVERSOURCE DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING CABLE PULLING.
 4. THE CONDUIT SHALL CROSS PAVED AREAS AT APPROXIMATELY 90 DEGREES.
 5. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY EVERSOURCE. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 8-INCH LAYERS.
 6. A SUITABLE PULL STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE EVERSOURCE IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
 7. ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY EVERSOURCE. INSTALLATION OF THE CONDUIT WILL BE DONE BY THE CONTRACTOR. THE EVERSOURCE SUPERVISOR MUST BE NOTIFIED 2 BUSINESS DAYS PRIOR TO BACKFILLING THE TRENCH. IN THE EVENT THAT A CABLE CANNOT BE SUCCESSFULLY PULLED THROUGH THE COMPLETED CONDUIT SYSTEM DUE TO A CONSTRUCTION ERROR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND REPAIR THE INVOLVED CONDUIT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RESULTING EXPENSES.
 8. NORMAL CONDUIT SIZES FOR EVERSOURCE ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY.
 9. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.
 10. CONDUIT MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.

ELECTRICAL & UNDERGROUND UTILITY TRENCH INSTALLATION DETAIL

NOT TO SCALE



TEMPORARY IMPACT CONSTRUCTION PATH CROSS-SECTION

- NOTES:
1. INSTALL EROSION CONTROL BERM AROUND PERIMETER OF DISTURBANCE AREA AS SHOWN ON SHEET C-2.
 2. DIG TRENCH FOR UNDERGROUND CONDUIT.
 3. STOCKPILE MATERIAL WITHIN TEMPORARY IMPACT AREAS AS NEEDED, DO NOT STOCKPILE ANY MATERIAL IN WETLANDS OR WETLAND BUFFERS.
 4. INSTALL UNDERGROUND CONDUIT 30" BELOW GRADE AND SURROUND IN SAND BOX.
 5. INSTALL A MINIMUM OF 2-INCHES OF STUMP GRINDINGS ALONG TRENCH DISTURBANCE. TIE INTO EXISTING GRADE.
 6. USE PATH FOR ALL CONSTRUCTION ACTIVITIES.

GENERAL UTILITY NOTES

1. CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS.
3. THESE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE IS NOT INTENDED OR IMPLIED.
4. ANY UTILITY POLES THAT NEED TO BE RELOCATED SHALL BE COORDINATED WITH EVERSOURCE OR VERIZON, WHOM EVER HAS CONTROL OVER THEM.
5. PROPOSED UTILITIES TO CONNECT TO THE SITE SHALL BE OVERHEAD, WHILE ALL OTHER UTILITIES ARE TO BE UNDERGROUND. COORDINATE LOCATION OF UNDERGROUND UTILITIES AND TRANSFORMER PADS WITH EVERSOURCE AND OTHER PERTINENT UTILITY COMPANIES.

**CONSTRUCTION DETAILS
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH**

PREPARED FOR:
GNM SOLAR 17, LLC
SEPTEMBER 2022

DIA. D	HEADWALL LEIGHT L	HEADWALL HEIGHT H	FILL HEIGHT FH	PIPE COVER h	HEADWALL BTM HEIGHT W
12"	4'3"	3'9"	1'11"	1'13"	2'
15"	6'	4'3"	1'7"	1'8"	2'11"
18"	7'	4'8"	1'10"	1'8"	2'2"
24"	9'	5'	2'4"	1'8"	2'3"
30"	11'	5'6"	2'10"	1'8"	2'9"
36"	13'	6'	3'4"	1'8"	2'6"
42"	15'9"	6'9"	4'1"	1'9"	2'9"
48"	17'9"	7'3"	4'7"	1'9"	2'10"

PRE-CAST HEADWALL

FILE NO. 104
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31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 Continental Blvd., Rochester, N.H. 603-335-3948

TEMPORARY VEGETATION:

REVISIONS:
06/12/23 - REVISE PER A&T COMMENTS

- SPECIFICATIONS:**
1. SITE PREPARATION:
a. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
 2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
 3. RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
 4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
- SEEDING PREPARATION:**
1. STONES AND TRASH SHALL BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
 2. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
 3. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
 4. APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIME MAY BE APPLIED AT THE FOLLOWING RATES:

LIME APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)*
*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)*
*LOW PHOSPHATE FERTILIZER (8-0-4) OR EQUIVALENT

- SEEDING:**
1. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
 2. TEMPORARY SEED SHALL TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
 3. AREAS SEEDING BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH. ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICES DESCRIBED IN THE NYSM, VOL. 3.
 4. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

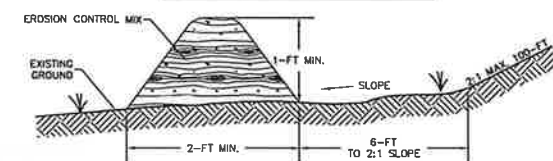
- MAINTENANCE REQUIREMENTS:**
1. TEMPORARY SEEDING SHALL BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHALL BE INSPECTED PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
 2. BASED ON INSPECTION, AREAS SHALL BE RESEED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHALL BE IMPLEMENTED.
 3. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEED, WITH OTHER TEMPORARY MEASURES (E.G. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

TEMPORARY VEGETATION SEEDING RECOMMENDATIONS

SPECIES	PER ACRE (BU) (LBS.)	PER 1,000-SF	REMARKS
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYE GRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYE GRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.

SOURCES:
1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

EROSION CONTROL MIX BERM CROSS-SECTION



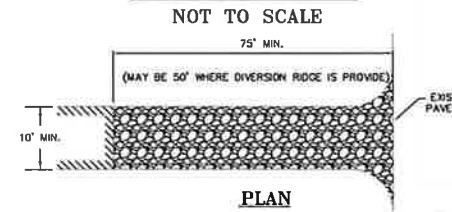
EROSION CONTROL MIX BERM CROSS-SECTION

- MAINTENANCE REQUIREMENTS:**
1. EROSION CONTROL MIX BERMS SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AT LEAST DURING PROLONGED RAINFALL.
 2. EROSION CONTROL MIX BERMS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM.
 3. IF THERE ARE SIGNS OF BREACHING OF THE BARRIER OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, THE EROSION CONTROL MIX BERMS SHOULD BE REPLACED WITH OTHER MEASURES TO INTERCEPT AND TRAP SEDIMENT (SUCH AS A DIVERSION BERM DIRECTING RUNOFF TO A SEDIMENT TRAP OR BASIN).
 4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT.
 5. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) OF THE HEIGHT OF THE BARRIER.
 6. EROSION CONTROL MIX BERMS SHOULD BE RESHAPED OR REAPPLIED AS NEEDED.
 7. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEED.

- CONSTRUCTION SPECIFICATIONS:**
1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF OF THE PROJECT SITE.
 2. EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE SHREDDED BARK, STUMP CHIPPINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS.
 3. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

- COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:**
- A. EROSION CONTROL MIX SHALL BE A WELL GRADED MIXTURE OF PARTICLE SIZES FREE OF REFUSE, PHYSICAL CONTAMINANTS, MATERIAL TOXIC TO PLANT GROWTH AND MAY NOT CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER.
 - B. ORGANIC MATTER = 25-65% DRY WEIGHT BASIS
 - C. PARTICLES PASSING BY WEIGHT:
3-INCH 100%
1-INCH 90-100%
3/4-INCH 70-100%
1/2-INCH 50-100%
 - D. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - E. THE MIX SHOULD CONTAIN NO SILTS, CLAYS OR FINE SANDS.
 - F. SOLUBLE SILT CONTENT SHALL BE 4.0 mg/ml/cm³
 - G. pH OF THE MIX SHOULD BE BETWEEN 5.0 AND 8.0
 - H. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.
 - I. IT MAY BE NECESSARY TO CUT TALL GRASSES AND WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES IN THE BARRIER THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY. THE FABRIC SHALL BE REPLACED PROMPTLY.
 - J. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE PREPARED AND SEED.
 - K. IF THERE IS EVIDENCE OF END FLOW OR PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
 - L. SILT FENCES HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT FENCE SHALL BE REPAIRED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.

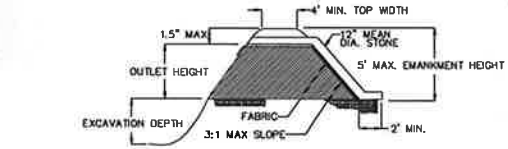
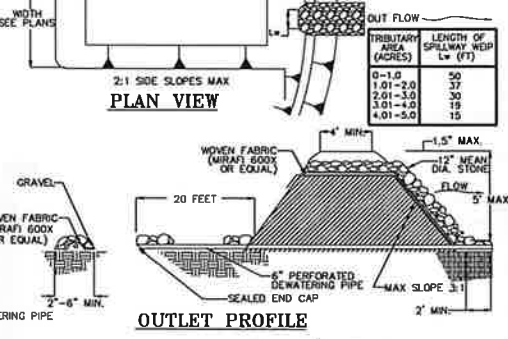
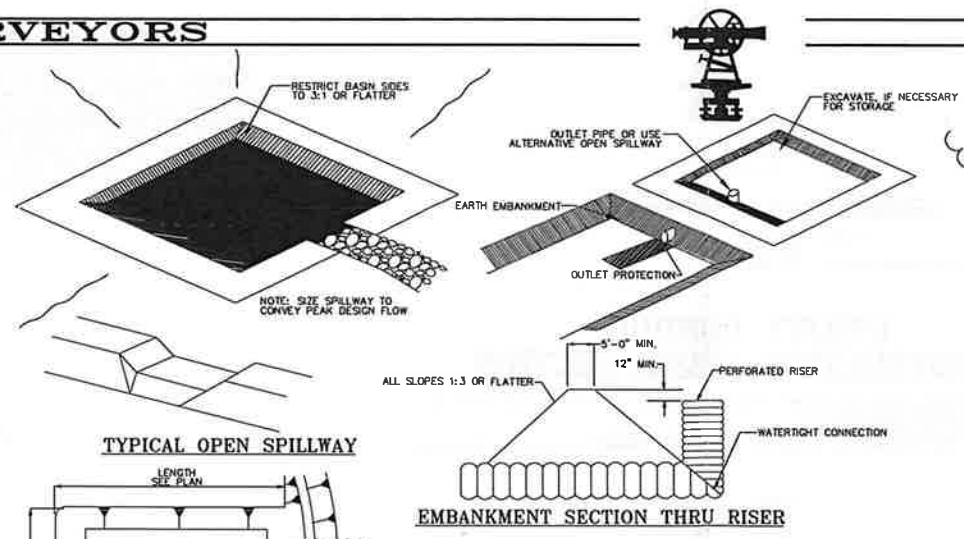
EROSION CONTROL MIX BERM DETAIL



TEMPORARY CONSTRUCTION EXIT

- MAINTENANCE REQUIREMENTS:**
1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL THEN BE RECONSTRUCTED.
 2. THE CONTRACTOR SHALL KEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
 3. WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE CONDUCTED ON AN AREA STABILIZED WITH APPROPRIATE EROSION CONTROL MEASURES. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.
- CONSTRUCTION SPECIFICATIONS:**
1. THE MINIMUM STONE USED SHALL BE 3-INCH CRUSHED STONE.
 2. THE MINIMUM LENGTH OF THE PAD SHALL BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
 3. THE PAD SHALL BE THE FULL WIDTH OF CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.
 4. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
 5. THE PAD SHALL BE AT LEAST 6 INCHES THICK.
 6. THE GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
 7. THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
 8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHALL BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SATISFACTORY OUTLET PROTECTION.

TEMPORARY EROSION AND SEDIMENTATION CONTROL
TAX MAP 240, LOT 49
SHAW DRIVE
ROCHESTER NH
PREPARED FOR:
GNM SOLAR 17, LLC
SEPTEMBER 2022



ALTERNATE OUTLET PROFILE SEDIMENT TRAP

SPACING BETWEEN STONE CHECK DAMS

- CONSTRUCTION SPECIFICATIONS:**
1. STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
 2. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION, AIR AND WATER POLLUTION WILL BE MINIMIZED.
 3. STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.
- MAINTENANCE NOTES:**
1. TEMPORARY GRADE STABILIZATION STRUCTURES SHALL BE INSPECTED AFTER EACH STORM AND DAILY DURING PROLONGED STORM EVENTS. ANY DAMAGE TO THE STRUCTURES SHALL BE REPAIRED IMMEDIATELY.
 2. PARTICULAR ATTENTION SHALL BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE.
 3. WHEN REMOVING THE STRUCTURES, THE DISTURBED AREAS SHALL BE BROUGHT UP TO EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEED, AND MULCHED.
 4. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT REACHES 1/2 THE ORIGINAL HEIGHT OF THE STRUCTURE.

STONE CHECK DAM INSTALLATION DETAIL

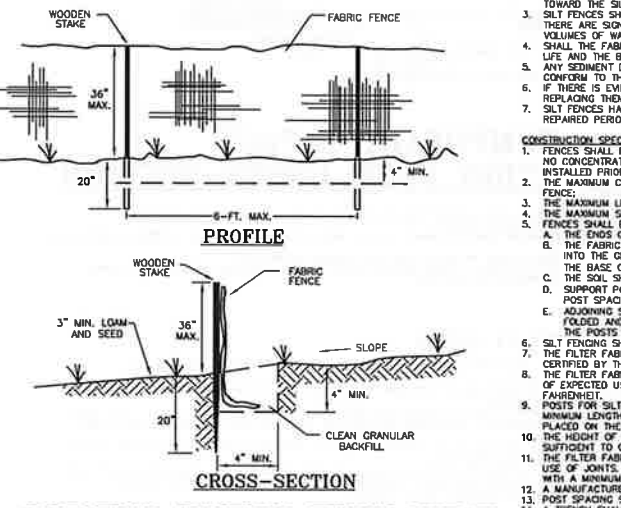
NOT TO SCALE

SLOPE INSTALLATION

- GENERAL NOTES:**
1. THERE SHALL BE NO PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/2 INCHES MATERIAL UTILIZED. (NOT APPLICABLE TO TURF REINFORCEMENT MATS).
 2. TURF REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.
- MAINTENANCE REQUIREMENTS:**
1. ALL BLANKET AND MATS SHALL BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN A 24-HOUR PERIOD.
 2. ANY FAILURE SHALL BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.
- CONSTRUCTION SPECIFICATIONS:**
1. MANUFACTURE'S INSTALLATION INSTRUCTIONS:
a. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (REC'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
b. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE REC'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF REC'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE REC'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF REC'S BACK OVER SEED AND COMPACTED SOIL. SECURE REC'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE REC'S.
c. ROLL THE REC'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. REC'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL REC'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHALL BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
d. THE EDGES OF PARALLEL REC'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON REC'S TYPE.
e. CONSECUTIVE REC'S SPUN DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE REC'S WIDTH.
NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE REC'S.
 2. SITE PREPARATION:
a. PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
b. GRADE AND SHAPE AREA IF INSTALLATION.
c. REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
d. PREPARE SEEDBED BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
e. INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.
 3. SEEDING:
a. SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND REVEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOES AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEED.
b. WHEN SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

TEMPORARY EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



SILTATION CONTROL FENCE DETAIL

NOT TO SCALE

FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

**DUST CONTROL PRACTICES:**

1. APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL OF DUST ON SITE.
2. **WATER APPLICATION:**
 - A) MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
 - B) AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.
3. **STONE APPLICATION:**
 - A) COVER SURFACE WITH CRUSHED OR COARSE GRAVEL.
 - B) IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE.
4. REFER TO "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" FOR OTHER ALLOWABLE DUST CONTROL PRACTICES (I.E. COMMERCIAL TACKLERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

STOCKPILE PRACTICES:

1. LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS.
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
3. STOCKPILES SHALL BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NWSM VOL. 3, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILE.
4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
5. PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER.

PROTECTION OF INACTIVE STOCKPILES:

6. INACTIVE SOIL STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES.
7. INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND SIMILAR MATERIALS SHALL BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHALL ALSO BE COVERED.

PROTECTION OF ACTIVE STOCKPILES:

8. ALL STOCKPILES SHALL BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHALL BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIAL FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHALL BE INSPECTED AT THE END OF EACH WORKING DAY.
9. WHEN A STORM IS PREDICTED, STOCKPILES SHALL BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

PERMANENT VEGETATION:**SPECIFICATIONS:****SITE PREPARATION:**

1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
3. RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

SEEDBED PREPARATION:

1. WORK LINE AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHALL BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY AND SILT SOILS SHALL BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
2. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLOOS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
3. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
5. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE SEEDING OPERATION.
6. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TILLAGE IS CRITICAL, FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)*
*EQUIVALENT TO SOX CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)*
*LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

SEEDING:

1. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE.
3. WHERE FEASIBLE EXCEPT WHERE EITHER CULTPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
4. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHALL BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDING IN LATE SUMMER AT LEAST 50% OF THE SEED SHALL BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NWSM, VOL. 3, AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
5. AREAS SEEDING BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NWSM, VOL. 3.
6. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

HYDROSEEDING:

1. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
2. SLOPES MUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTAL BY 1 FOOT VERTICALLY).
3. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
4. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

MAINTENANCE REQUIREMENTS:

1. PERMANENT SEEDING AREAS SHALL BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHALL CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
2. SEEDING AREAS SHALL BE MOVED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOWING HEIGHT AND FREQUENCY DEPEND OF TYPE OF GRASS COVER.
3. BASED ON INSPECTION, AREAS SHALL BE RESEEDING TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
4. AT A MINIMUM 85% OF THE SOIL SURFACE SHALL BE COVERED BY VEGETATION.
5. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEEDING WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

GENERAL CONSTRUCTION PHASING:

1. **STABILIZATION:**

A SITE IS DEEMED STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOIL ON SITE WILL NOT EXPERIENCE ACCELERATED OR UNNATURAL EROSION UNDER THE CONDITIONS OF A 10-YEAR STORM EVENT, SUCH AS BUT NOT LIMITED TO:

 - a) A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
 - b) A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED; OR
 - c) EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
 2. **TEMPORARY STABILIZATION:**

a) A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
 - b) BASE COURSE GRAVELS HAVE BEEN INSTALLED.
1. ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES. THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.
 2. **PERMANENT STABILIZATION:**

a) ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.

THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME.

ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.

a) FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED.

b) EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.
 3. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN DEPICTED ON SHEET C-2.
 4. ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON SHEET C-2.
 5. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM EROSION.
 6. STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES".
 7. SLOPES SHALL NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLURPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGE.
 8. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.
 9. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHALL BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.
 10. ALL FILLS SHALL BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLURPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS AND OTHER FACILITIES, SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
 11. IN GENERAL, FILLS SHALL BE COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHALL REVIEW THE PROJECT GEOTECHNICAL REPORT AND/OR THE "SUBJECT SPECIFIC PHASING NOTES" FOR SPECIFIC GUIDANCE.
 12. ANY AND ALL FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS (LARGER THAN 3/4 THE DEPTH OF THE LIFT BEING INSTALLED), LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
 13. FROZEN MATERIAL OR SOFT, MOIST OR HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN AREAS OF THESE MATERIALS SHALL BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.
 14. THE OUTER FACE OF THE FILL SLOPE SHALL BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE 50 THE DOZER TRACKS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING" IN THE NWSM, VOL. 3.
 15. ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.
 16. USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
 17. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE EVALUATED BY A PROFESSIONAL ENGINEER (PREFERABLY THE DESIGN ENGINEER) TO DETERMINE IF THE PROPOSED DESIGN SHALL BE REVISED TO PROPERLY MANAGE THE CONDITION.
 18. STABILIZE ALL GRADED AREAS (AS ABOVE) WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETE OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.
 19. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
 20. THE PROJECT SHALL BE CONSTRUCTED TO MEET ALL REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

ABOVE NOTES EXCERPTED, ADAPTED AND REFERENCED FROM "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" (NWSM, VOL. 3)

PROJECT SPECIFIC CONSTRUCTION PHASING:

1. REFER TO THE "GENERAL CONSTRUCTION PHASING" NOTES PRIOR TO COMMENCING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING PHASING. THE "GENERAL CONSTRUCTION PHASING" NOTES APPLY TO THE OVERALL CONSTRUCTION AND SHALL BE ADHERED TO.
2. INSTALL ALL TEMPORARY SEDIMENT CONTROL BARRIERS (I.E. SILT FENCE, EROSION CONTROL MIX BERM, STONE CHECK DAMS, ETC.) AROUND THE OUTER PERIMETER OF THE CONSTRUCTION SITE AS DEPICTED ON SHEET C-2 PRIOR TO EARTH MOVING OPERATIONS.
3. ALL RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BUMPS ARE STABILIZED.
4. INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASINS AND THE FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE BASINS HAS STARTED.
5. CLEAR, GRUB AND STRIP THE SITE. STUMPS, BRUSH AND OTHER ORGANIC WASTE SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
6. INSTALL A TEMPORARY CONSTRUCTION EXIT AT THE LOCATION OF THE PROPOSED SHAW DRIVE IMPROVEMENTS. MAINTAIN AS DIRECTED BY THE TEMPORARY CONSTRUCTION EXIT DETAIL.
7. STOCKPILE STRIPPED TOPSOIL AND CUT MATERIAL TO BE REUSED ON SITE IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE "SOIL STOCKPILES PRACTICES".
8. PERFORM THE NECESSARY CUTS AND FILLS TO SUBGRADE IN PARKING AND TURN AROUND AREAS.
 - A) INSTALL REQUIRED FILLS IN MAXIMUM 8-INCH LIFTS AND COMPACT EACH LIFT TO 95% MAXIMUM PROCTOR DENSITY.
9. ALL DITCHES/SWALES/AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE AND SEDIMENT CONTROLS, ETC.)
11. INSTALL ALL UTILITIES AND DRAINAGE COMPONENTS (I.E. PIPE CULVERTS, AND UNDERGROUND UTILITIES) PER THE CORRESPONDING DETAILS AND AS SHOWN ON SHEET C-2 AND C-3, AS EACH STRUCTURE IS COMPLETED INSTALL THE CORRESPONDING SEDIMENT CONTROL MEASURES.
12. ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED OR GRAVELED SHALL BE LOAMED AND SEEDED FOR PERMANENT VEGETATION AND STABILIZATION AS DESCRIBED UNDER THE "PERMANENT VEGETATION PRACTICES" WITHIN 3 DAYS OF ACHIEVING FINAL GRADE.
13. INSTALL ALL GRAVEL BASE AND CRUSHED GRAVEL MATERIALS FOR THE PARKING AREA AS SPECIFIED IN THE CORRESPONDING DETAILS.
14. THE PARKING AREAS SHALL BE STABILIZED (CONSTRUCTED TO GRAVEL BASE COURSE) WITHIN 3 DAYS OF ACHIEVING FINISHED SUBGRADE ELEVATIONS.
15. INSTALL PAVEMENT SURFACES AS SOON AS POSSIBLE AFTER THE INSTALLATION OF THE GRAVEL BASE AND CRUSHED GRAVEL. IN ORDER TO LIMIT THE SOIL EROSION AND POLLUTION OF THE GRAVEL MATERIALS WITH ORGANIC MATERIALS, IN NO CASE SHALL AREAS TO BE PAVED BE LEFT UNPROTECTED THROUGHOUT THE WINTER MONTHS.
16. ALL DISTURBED AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE. IN NO CASE SHALL ANY DISTURBED AREA BE LEFT UN-STABILIZED FOR LONGER THAN 21 DAYS. IF NECESSARY TEMPORARY STABILIZATION MEASURES AS DISCUSSED IN THE "GENERAL CONSTRUCTION PHASING NOTES" AND NWSM, VOL. 3 SHOULD BE EMPLOYED.

MAINTENANCE AND INSPECTION:

1. DURING CONSTRUCTION ALL TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL, AND STORMWATER MANAGEMENT PRACTICES SHOULD BE INSPECTED WEEKLY, AFTER EVERY 1/2 INCH OF RAINFALL, AND ANNUALLY.
2. EXCESS SEDIMENT SHOULD BE REMOVED FROM TEMPORARY SEDIMENT, EROSION CONTROL, AND STORMWATER MANAGEMENT PRACTICES WHEN IT REACHES PRESCRIBED THRESHOLDS DISCUSSED IN THE DETAILS FOR EACH PRACTICE.
3. ALL DAMAGED TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE REPAIRED OR REPLACED IMMEDIATELY UPON NOTICE.
4. SEDIMENT SHALL BE DISPOSED OF PROPERLY EITHER ON SITE OR OFF SITE.
5. **PROJECT COMPLETION AND STABILIZATION:**
 1. UPON PROJECT COMPLETION, ONCE THE SITE IS DEEMED STABILIZED (VEGETATION IS GERMINATED), THE TEMPORARY SEDIMENT CONTROL BARRIERS AND EROSION CONTROL PRACTICES SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING REMOVAL SHALL BE REPAIRED IN AN APPROPRIATE MANNER.

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY UNUSABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

REVISIONS:

08/2/23 - REVISE PER AOT COMMENTS

WINTER STABILIZATION & CONSTRUCTION PRACTICES:**MAINTENANCE REQUIREMENTS:**

1. MAINTENANCE MEASURES SHALL BE PERFORMED THROUGHOUT CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL CONDUCT INSPECTION OF ALL INSTALLED EROSION CONTROL PRACTICES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUED FUNCTION.
2. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHALL CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF THE VEGETATION AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH.)

SPECIFICATIONS:

1. THE FOLLOWING STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 15.
 1. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO 1-ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DISCUSSED IN NWSM, VOL. 3 AND ELSEWHERE IN THIS PLAN SET, PRIOR TO ANY TURN OR SPRING MELT EVENT.
2. STABILIZATION AS FOLLOWS SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 15 DAYS.
 - A. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDING AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (PREFER TO HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS).
 - B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15 SHALL BE SEEDING AND COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET OR WITH A MINIMUM OF 4 INCHES OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHALL NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.
3. ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
5. ALL MULCH APPLIED DURING WINTER SHALL BE ANCHORED (I.E. BY NETTING, TRADING, WOOD CELLULOSE FIBER).
6. WITHIN 24 HOURS OF STOCKPILING SOIL MATERIALS SHALL 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. MULCH SHALL BE REESTABLISHED PRIOR TO ANY RAIN OR SNOWFALL. NO SOIL STOCKPILE SHALL BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100-FT OF ANY WETLAND OR OTHER WATER RESOURCE AREA.
7. FROZEN MATERIAL (I.E. FROST LAYER REMOVED DURING WINTER CONSTRUCTION) SHALL BE STOCKPILED SEPARATELY AND IN A LOCATION AWAY FROM ANY AREA NEEDING PROTECTION. FROZEN MATERIAL STOCKPILES CAN MELT IN SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO HIGH SOIL MOISTURE CONTENT.
8. INSTALLATION OF EROSION CONTROL BLANKETS SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND.
9. ALL GRASS-LINED DITCHES AND CHANNELS SHALL BE CONSTRUCTED BY SEPTEMBER 1. ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS AS DETERMINED BY A PROFESSIONAL ENGINEER. IF STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
10. ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
11. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF SAND AND GRAVEL WITH A GRADATION THAT IS LESS THAN 12% OF THE SAND PORTION, OR MATERIAL PASSING THE NUMBER 4 SIEVE, BY WEIGHT, PASSES THE NUMBER 200 SIEVE.
12. SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHALL CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SILT FENCES AND HAY BALES SHALL NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDEMMENT OF THESE BARRIERS.

PERMANENT VEGETATION SEEDING RECOMMENDATIONS

USE	MIXTURE	SPECIES	LBS./ACRE	LBS./1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY RECREATION SITES	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL ESSENTIAL FOR GOOD TURF)	F	CREeping RED FESCUE	50	1.15
		KENTUCKY BLUEGRASS	50	1.15
		TOTAL	100	2.30

SOURCES:

1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLES 4-2 AND 4-3
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

FILE NO. 104
PLAN NO. C-3235
DWG. NO. 21033 SP-1

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NORWAY PLAINS ASSOCIATES, INC.

PERMANENT EROSION AND SEDIMENTATION CONTROL**TAX MAP 240, LOT 49****SHAW DRIVE****ROCHESTER NH****PREPARED FOR:****GNM SOLAR 17, LLC****SEPTEMBER 2022**

C-7

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