INSPECTION AND MAINTAINANCE MANUAL

Initial Issue Date August 2022
This Revision Date April 12, 2023

MEENA, LLC
NH ROUTE 25
Effingham, New Hampshire

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INSPECTION AND MAINTENANCE MANUAL

FOR

MEENA, LLC
NH ROUTE 25
EFFINGHAM, NH

Initial Issue Date August 2022
This Revision Date April 12, 2023

Project No. 220473

INSPECTION AND MAINTENANCE MANUAL
FOR
MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

Initial Issue Date August 2022
This Revision Date April 24, 2023

Introduction

This document is intended to provide a unified procedure for the party(ies) responsible for inspecting and maintaining the stormwater management device(s) that are located within the proposed development (see attached Location Plan for the device locations). The activities specified in this plan are consistent with the New Hampshire Department of Environmental Services (DES) Alteration of Terrain Program.

Responsible Parties

The ultimate responsibility for complying with this plan rests with the owners of the Property.

Owner's Name: **MEENA, LLC, c/o Pankaj Garg Cell (603) 662-4805**

Prior to transfer of ownership to another entity, the existing owner shall notify Town in writing of such transfer.

DEVICE	TASK	PARTY RESPONSIBLE
Structural Stormwater Devices		
Deep Sump Catch Basins	Inspection	OWNER
	Maintenance	OWNER
	Reporting	OWNER
Oil Water Separator	Inspection	OWNER
	Maintenance	OWNER
	Reporting	OWNER
Infiltration Trench	Inspection	OWNER
	Maintenance	OWNER
	Reporting	OWNER
Bioretention Basin	Inspection	OWNER
	Maintenance	OWNER
	Reporting	OWNER

Frequency of Activities

The best time to perform inspections is during the onset of rain. To the extent practicable inspections should be timed to coincide with moderate storms that do not have the potential for severe (thunderstorms, etc) precipitation. The frequency of inspection and maintenance will vary by intensity of use; however, the following shall serve as the minimum inspection frequency and required maintenance tasks:

- Pretreatment measures should be inspected and cleaned at least twice annually.
- Structural Devices: Spring and fall
- Road side ditch, treatment swales, and surface filter ponds: Twice annually, and following any rainfall event exceeding 2.5 inches in a 24-hour period. At least once annually, the basin upstream of the level spreader should be inspected for a drawdown time of 72 hours.
- Pretreatment measures (Deep Sump Catch Basins) should be inspected and cleaned at least twice annually.
- Periodic mowing of embankments
- Removal of woody vegetation from fill embankments
- Removal of debris from outlet structures (culverts, level spreader)
- Removal of accumulated sediment and street sweeping of paved areas.
- Inspection and repair of embankments, inlet and outlet structures, and appurtenances
- Trash and debris shall be removed at each inspection.
- Do not place basin upstream of the level spreader into service until the level spreader BMP has been installed, backfilled, and fully stabilized.
- To prevent degradation of the bioretention basin:
    1. Do not discharge sediment-laden waters from construction activities (runoff, water from excavations) to the basin upstream of the bioretention basin during any stage of construction.
    2. Do not traffic or compact exposed soil surface within the area of the basin upstream of the bioretention basin with construction equipment. Perform excavation for the construction of this BMP with equipment positioned outside the limits of this system.

Maintenance frequencies shall be adjusted based upon the results of the inspections and if specific maintenance thresholds are observed to have been crossed during inspections.

All inspection activities shall be recorded on the appropriate attached Inspection Form. One form shall be used for each stormwater device.

Records

A record of inspection and maintenance activities shall be recorded on the Inspection and Maintenance Log presented below. Records of Inspection forms and Inspection and Maintenance Logs shall be made available to the Town of Effingham upon request.

_____
Year

Stormwater BMP
Inspection and Maintenance Log
FOR
MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

DEVICE/ LOCATION	INSPECTION		FOLLOW UP ACTIVITY	
	Date	Insp. Name	Date	Action Taken

Infiltration Trench
Inspection Form
FOR
MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

_____
BMP Name

Date of today's inspection__/__/__ Inspector Name_____
Date of last inspection (of this BMP) __/__/__

Recent Weather history

Storm date(s)	Storm duration	Rainfall amount	Did runoff occur?

Today's Weather_____

OUTLET(S) FROM BMP				
	Turbid Discharge?	Y	N	Follow turbidity upgradient to source and stabilize
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size
	Clogged weir	Y	N	Remove clog and debris in vicinity of outlet
	Woody growth on dam faces?	Y	N	Remove, seed and apply erosion control matting
Floor				
	Trash or debris accumulations?	Y	N	Remove all trash at every inspection
	Does system fail to drain in 72 hours?	Y	N	Seek a qualified professional to assess the condition to determine measures required to restore filtration function, including but not limited to removal of accumulated sediments.
	Is grass covering the 1" gravel debris screen?	Y	N	Remove grass and restore 1" of crushed gravel.
Inlet(s) to BMP				
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size and/ or add check dam
	Sediment accumulation?	Y	N	Look at the canopy surface to determine if the source of sediment comes from here. If not, check the ground surface immediately upslope of the trench to determine if that area needs additional periodic sweeping to prevent sediment from reaching the trench

BMP Name

Deep Sump Catch Basin

Inspection Form

FOR

MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

Date of today's inspection__/__/__ Inspector Name_____
Date of last inspection (of this BMP) __/__/__

Recent Weather history

Storm date(s)	Storm duration	Rainfall amount	Did runoff occur?

Today's Weather_____

INSPECTION AREAS	LOOK FOR	CIRCLE ONE		IF YES
Outlet(s) from BMP				
	Turbid Discharge?	Y	N	Follow turbidity upgradient to source and stabilize
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size
	Clogged pipe/weir	Y	N	Remove clog and debris in vicinity of outlet
	Seepage	Y	N	If Dam, consult O&M plan otherwise attempt to find source with dye and plug with bentonite
Sumps				
	Sediment accumulations?	Y	N	Vacuum-Truck when sediment occupies 50% of sump depth
Inlet(s) to BMP				
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size and/ or add check dam
	Sediment accumulation?	Y	N	Look at pretreatment device and clean once sediment occupies 50% of sump depth, then clean out inlet pipe to main device

Oil/Water Separator

Inspection Form

FOR

MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

_____ BMP Name

Date of today's inspection___/___/___ Inspector Name_____
Date of last inspection (of this BMP) ___/___/___

Recent Weather history

Storm date(s)	Storm duration	Rainfall amount	Did runoff occur?

Today's Weather_____

INSPECTION AREAS	LOOK FOR	CIRCLE ONE		IF YES
Outlet(s) from BMP				
	Turbid Discharge?	Y	N	Follow turbidity upgradient to source and stabilize
	Rills present or crest not level?	Y	N	Patch/grade to ensure discharge is not concentrated and re-vegetate.
Tank (bays/compartments)				
	hydrocarbons?	Y	N	Remove floating hydrocarbons immediately whenever detected; see SPCC
Device Floor				
	Sediment accumulations?	Y	N	Inspect upstream devices and landscape to determine source and stabilize. Vacuum-Truck when sediment reaches six inches in depth
Inlet (s) from BMP				
	Sediment accumulation?	Y	N	Look at pretreatment device and clean once sediment occupies 50% of the sump depth, then clean the inlet pipe to main device

Bioretention basin Inspection Form

FOR

MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

_____
BMP Name

Date of today's inspection__/__/__ Inspector Name_____
Date of last inspection (of this BMP) __/__/__

Recent Weather history

Storm date(s)	Storm duration	Rainfall amount	Did runoff occur?

Today's Weather_____

OUTLET(S) FROM BMP				
	Turbid Discharge?	Y	N	Follow turbidity upgradient to source and stabilize
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size
	Clogged weir	Y	N	Remove clog and debris in vicinity of outlet
	Woody growth on dam faces?	Y	N	Remove, seed and apply erosion control matting
Floor				
	Trash or debris accumulations?	Y	N	Remove all trash at every inspection
	Does system fail to drain in 72 hours?	Y	N	Seek a qualified professional to assess the condition to determine measures required to restore filtration function, including but not limited to removal of accumulated sediments.
	Is sediment covering the bottom?	Y	N	Remove sediment and restore basin bottom.
Inlet(s) to BMP				
	Scour?	Y	N	Replace scour apron to original plan dimensions, may need to increase D_{50} stone size and/ or add check dam
	Sediment accumulation?	Y	N	Look at the canopy surface to determine if the source of sediment comes from here. If not, check the ground surface immediately upslope of the trench to determine if that area needs additional periodic sweeping to prevent sediment from reaching the trench

_____
Year

Deicing Log

FOR

MEENA, LLC
NH ROUTE 25, EFFINGHAM, NH

DATE	CHEMICAL APPLIED	CHEMICAL AMOUNT / APPLICATION RATE

CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

Background:

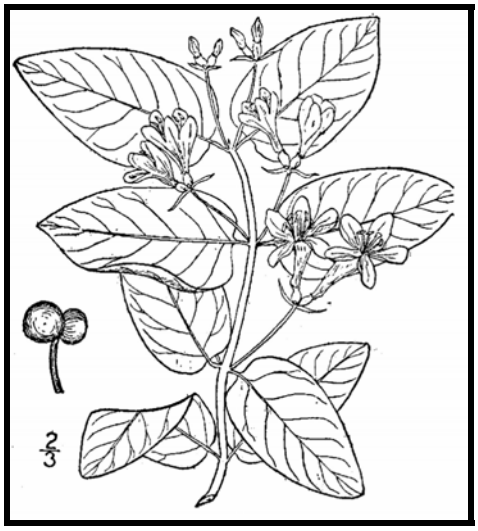
Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

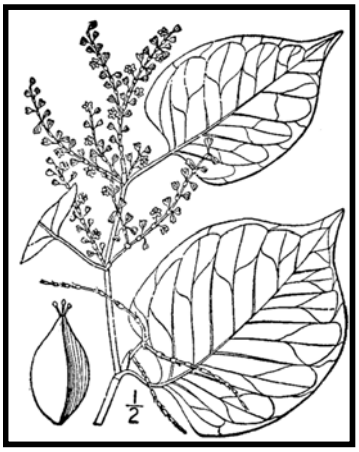
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

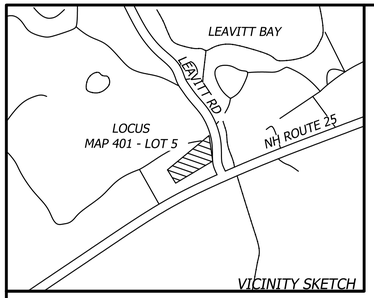
Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010



LEGEND

- APPROXIMATE ABUTTER LOT BOUNDARY
- SUBJECT LOT BOUNDARY
- EDGE OF GRAVEL
- TREELINE
- OHE — OVERHEAD UTILITY WIRE
- EDGE OF JURISDICTIONAL WETLANDS
- ELECTRICAL EASEMENT
- NRCS SOIL BOUNDARY
- 852 — EXISTING 2 FOOT CONTOURS
- 850 — EXISTING 10 FOOT CONTOURS
- EXISTING PAVEMENT
- LIMITS OF PAVEMENT RECONSTRUCTION
- SF — SF — PROPOSED SEDIMENT FENCE
- RECONSTRUCTED PAVEMENT
- 420 — PROPOSED CONTOUR
- LIMITS OF PAVEMENT MILLING
- LIMITS OF FULL DEPTH PAVEMENT SAW CUT
- UST — UNDERGROUND STORAGE TANK
- UTILITY POLE
- IRON PIPE OR REBAR FOUND
- STONE BOUND FOUND
- TP — TEST PIT LOCATION
- EXISTING SITE LIGHT
- DSCB — DEEP SUMP CATCH BASINS
- RECONSTRUCTED PAVEMENT

SITE NOTES

1. OWNER OF RECORD

   MEENA, LLC
   41 NH ROUTE 25
   EFFINGHAM, NH 03882
   BOOK 3570 PAGE 955

2. SEE EXISTING CONDITIONS PLAN FOR PLAN REFERENCES AND DEED REFERENCES.

3. ALL NON PAVED DISTURBED AREAS TO RECEIVE A MINIMUM 4" OF LOAM AND SEED. EXISTING VEGETATION / NATURAL SCREENING IS SHOWN AND LABELED ON THE PLAT. AREAS OUTSIDE THE TREE LINE AND WITHIN THE BOUNDS OF THE PROPERTY THAT ARE NOT PRESENTLY FORESTED OR CONTAIN SCRUBBY GROWTH AND OR GRASS, WILL BE LOAMED WITH A MIN. OF 4" OF TOP SOIL AND SEEDED OR A THICK LAYER EROSION MULCH WILL BE APPLIED.

4. THIS PARCEL IS SERVED BY NHDOT DRIVEWAY PERMIT #14116A.

5. THE NHDOT APPROVED PERMIT HAS GREATER THAN 400 FEET OF SITE DISTANCE IN THE WESTERLY AND EASTERLY DIRECTION, AS MEASURED FROM A POINT 10 FEET OFF THE EDGE OF THE TRAVELED WAY AT A HEIGHT OF 3.75 FEET.

6. ALL LIGHTING ON THE BUILDINGS EXIST. ANY PROPOSED LIGHTING SHALL BE DOWN LIT CONFORM WITH TOWN REGULATIONS. NO CHANGES ARE BEING PROPOSED TO THE EXISTING SITE LIGHTING. ANY FUTURE SITE LIGHTING MODIFICATIONS SHALL BE IDA COMPLIANT.

7. PARKING SPACE REQUIREMENTS
   EFFINGHAM ZONING ORDINANCE, SECTION 1013C. MINIMUM 2 SPACES PER RESIDENTIAL UNIT.
   EFFINGHAM ZONING ORDINANCE, SECTION 1030B, 1 SPACE PER THREE CUSTOMERS AT ANY ONE TIME PLUS 1 SPACE FOR TWO EMPLOYEES.
   - 2 RESIDENTIAL UNITS = 4 PARKING SPACES
   - 15 EXPECTED CUSTOMERS AT ANY ONE TIME = 5 SPACES
   - 4 EMPLOYEES = 2 SPACES
   REQUIRED SPACES = 11
   PROVIDED SPACES = 13

8. PROPOSED DUMPSTER TO BE INSTALLED OVER EXISTING IMPERVIOUS GRAVEL AREA WITH NEW CONCRETE PAD.

0 10 20 40 80
SCALE IN FEET

DATE OF PRINT
APRIL 13 2023
HORIZONS ENGINEERING

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Civil and Structural Engineering
Land Surveying and Environmental Consulting
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www.horizonsengineering.com

MEENA LLC

41 NH ROUTE 25

EFFINGHAM, NEW HAMPSHIRE

SITE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG
1	9/08/22	REVISED PER PEER REVIEW	JH	WWS
2	4/12/23	REVISED PER PEER REVIEW	ML	JFH

EFFINGHAM PLANNING BOARD
APPROVAL SIGNATURE BLOCK

APPROVAL PENDING

STATE OF NEW HAMPSHIRE
MARK LUCY
NO. 7260
LICENSED PROFESSIONAL ENGINEER

DATE:	PROJECT #:
JUNE 2022	220473
ENGIN'D BY: JFH	DRAWN BY: JFH/WWS
CHECK'D BY: DEB/ML	ARCHIVE #: H-___

C 1.01