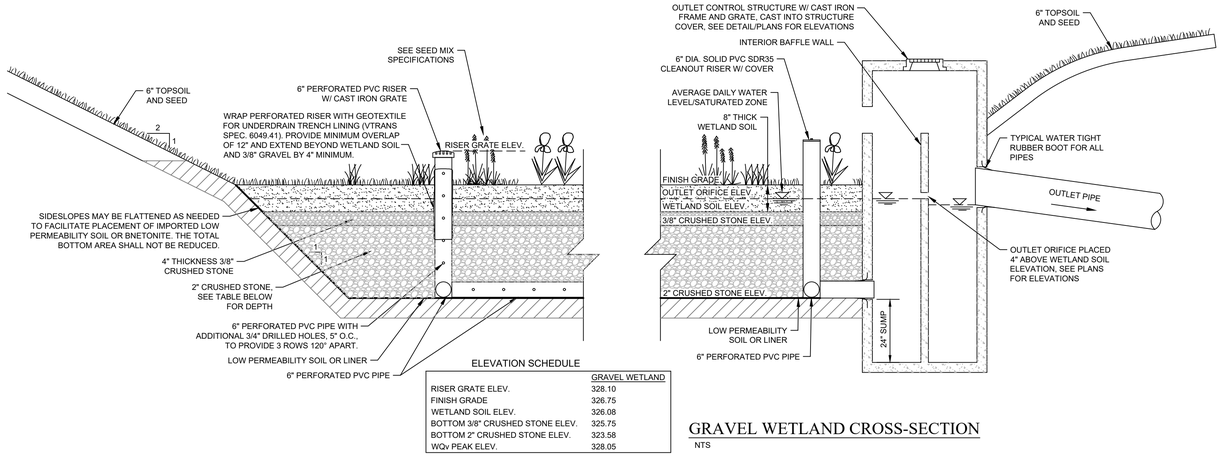
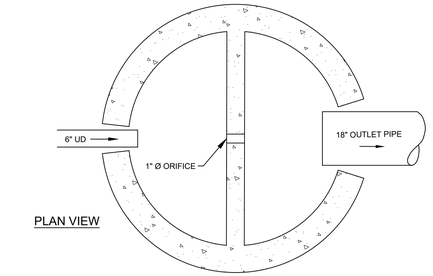


ELEVATION SCHEDULE

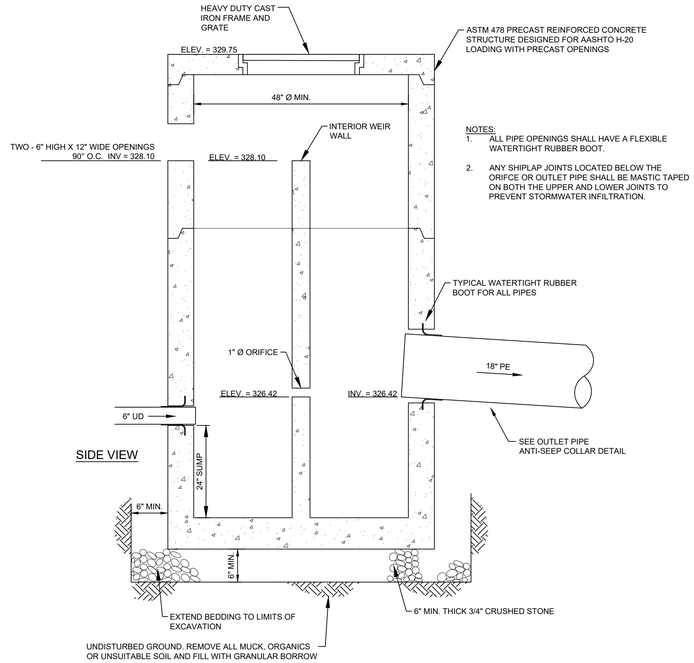
	GRAVEL WETLAND
RISER GRATE ELEV.	328.10
FINISH GRADE	326.75
WETLAND SOIL ELEV.	326.08
BOTTOM 3/8" CRUSHED STONE ELEV.	325.75
BOTTOM 2" CRUSHED STONE ELEV.	323.58
WQv PEAK ELEV.	328.05

GRAVEL WETLAND CROSS-SECTION

NTS



PLAN VIEW



SIDE VIEW

NOTES:
1. ALL PIPE OPENINGS SHALL HAVE A FLEXIBLE WATERTIGHT RUBBER BOOT.
2. ANY SHIPLAP JOINTS LOCATED BELOW THE ORIFCE OR OUTLET PIPE SHALL BE MASTIC TAPED ON BOTH THE UPPER AND LOWER JOINTS TO PREVENT STORMWATER INFILTRATION.

OUTLET STRUCTURE #1 DETAIL

NTS

GRAVEL WETLAND - MATERIAL SPECIFICATIONS

WETLAND SOIL MIX
THE WETLAND SOIL SHALL CONSIST OF THE AMENDMENT OF NATURAL TOPSOIL WITH PEAT MOSS OR LEAF MOLD, AT A RATIO OF 75% TOPSOIL TO 25% *ORGANIC MATERIAL BY VOLUME. LOW HYDRAULIC CONDUCTIVE SOIL (0.1 - 0.01 FT/DAY), AS FOLLOWS:

SAND	55-65%
SILT	8-12%
CLAY	12-15%
*ORGANICS	15-25%

*ORGANICS SHOULD CONSIST OF PEAT MOSS OR LEAF MOLD

THE WETLAND SOIL MIX SHALL BE FREE OF STICKS, SHRUBS, STONES, STUMPS, OR ROOTS LARGER THAN TWO (2) INCHES IN ANY DIMENSION. THE SOIL MIX SHALL BE FREE OF NOXIOUS WEEDS.

3/8" CRUSHED STONE:
STONE SHALL CONSIST OF CRUSHED ANGULAR ROCK FRAGMENTS. THE CRUSHED STONE SHALL BE FREE FROM CLAY, LOAM AND ORGANICS AND SHALL CONFORM TO THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY WEIGHT
1/2"	100
3/8"	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

LIMESTONE SHALL NOT BE USED

2" CRUSHED STONE:
STONE SHALL CONSIST OF CRUSHED ANGULAR ROCK FRAGMENTS. THE CRUSHED STONE SHALL BE CLEAN AND FREE FROM CLAY, LOAM AND ORGANICS AND SHALL CONFORM TO THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY WEIGHT
2-1/2"	100
2"	90-100
1-1/2"	35-70
1"	0-15
1/2"	0-5

LIMESTONE SHALL NOT BE USED

LOW PERMEABILITY SOIL OR LINER:
THE LOW PERMEABILITY SOIL OR LINER SHALL EXTEND ACROSS THE ENTIRE BOTTOM OF THE GRAVEL WETLAND AND SHALL EXTEND A MINIMUM OF 1 FOOT VERTICALLY ABOVE FINISH GRADE. THE FOLLOWING MAY BE USED AS A LINER FOR THE GRAVEL WETLAND:

LOW PERMEABILITY SOIL:
THE SOIL SHALL CONSIST OF A MINIMUM OF 15% PASSING THE NO. 200 SIEVE, PLACED AND COMPACTED TO PROVIDE A MAXIMUM PERMEABILITY RATE OF 1 X 10^-5 CM/SEC (0.025 FT/DAY).

GEOMEMBRANE: 30 MIL LINEAR, LOW DENSITY POLYETHYLENE GEOMEMBRANE (NO FIELD SEAMS)
1. OVER EXCAVATE THE BOTTOM OF THE WETLAND 2" CRUSHED STONE LAYER BY 4".
2. PLACE 4" OF SAND BARROW (VTRANS SPEC. 703.03).
3. PLACE POLYETHYLENE GEOMEMBRANE AND WELD FIELD SEAMS PER MANUFACTURER SPECIFICATIONS.

BENTONITE:
1. OVER EXCAVATE THE BOTTOM OF THE WETLAND 2" CRUSHED STONE LAYER BY 6".
2. APPLY BENTONITE AT A MINIMUM RATE OF 2 LBS/SF (MINIMUM OF THICKNESS OF 1/4"), RAKE AS NEEDED TO PROVIDE A CONSISTENT LAYER.
3. REPLACE THE OVER EXCAVATED SOIL AND COMPACT.

PVC PIPE:
ALL PIPE SHALL BE SDR35 PVC. PERFORATIONS SHALL BE 1/2" Ø DRILLED HOLES, 5" O.C., TO PROVIDE 3 ROWS 120° APART. PIPE SHALL COMPLY WITH AASHTO M278 OR ASTM D3034.

GRAVEL WETLAND - EROSION PREVENTION AND SEDIMENT CONTROL SEQUENCING

1. INSTALL SILT FENCE AND/OR OTHER APPROPRIATE TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES TO PREVENT SEDIMENT FROM ENTERING THE GRAVEL WETLAND DURING CONSTRUCTION.

2. RUNOFF SHALL NOT BE DIRECTED INTO THE GRAVEL WETLAND FACILITY UNTIL:
   A. ALL UPGRADIENT CONTRIBUTING AREAS HAVE BEEN PERMANENTLY STABILIZED.
   B. ANY FOREBAYS OR REQUIRED PRETREATMENT DEVICES ARE INSTALLED.
   C. THE GRAVEL WETLAND FACILITY IS COMPLETE AND ALL AREAS SUBJECT TO RUNOFF HAVE BEEN PERMANENTLY STABILIZED.

3. REMOVE TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DEVICES AFTER THE GRAVEL WETLAND IS PLACED ONLINE AND IS RECEIVING RUNOFF.

4. IN THE EVENT THAT SEDIMENT IS INTRODUCED INTO THE GRAVEL WETLAND, THE SEDIMENT AND ALL CONTAMINATED MATERIAL (SUCH AS STONE OR SOIL MIX) SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

GRAVEL WETLAND - GENERAL CONSTRUCTION SPECIFICATIONS

1. THE GRAVEL WETLAND SHALL BE EXCAVATED TO THE DIMENSIONS, SIDE SLOPES, AND ELEVATIONS SHOWN ON THE DRAWINGS.

2. THE WETLAND SOIL MIXTURE SHALL BE PLACED AND GRADED USING LOW GROUND CONTACT PRESSURE EQUIPMENT. TO THE EXTENT POSSIBLE, WORK SHALL BE PERFORMED BY EQUIPMENT OPERATING ON THE ADJACENT SLOPES.

3. ALL WORK RELATED TO PLACEMENT OF PLANT INSTALLATION SHALL BE ACCOMPLISHED WITH METHODS AND EQUIPMENT THAT DO NOT RESULT IN FURTHER COMPACTION OF THE WETLAND SOIL MIX.

GRAVEL WETLAND - SEEDING SPECIFICATIONS

1. THE GRAVEL WETLAND BOTTOM SHALL BE SEEDED WITH NEW ENGLAND WETMIX (WETLAND SEED MIX) AT A RATE OF 18 POUNDS PER ACRE.

2. THE SEED MIX MAY BE SOWN WITH A HAND HELD SPREADER, OR HYDRO-SEEDED. IF MANUAL SEEDING IS USED, THE SOIL SHALL BE LIGHTLY RAKED TO INSURE GOOD SEED TO SOIL CONTACT.

3. AFTER SEEDING, A LIGHT MULCH OF CLEAN, WEED FREE STRAW IS SHALL BE APPLIED.

4. THE WETLAND SOIL SHALL BE MAINTAINED IN A MOIST OR WET CONDITION. IF RAINFALL AND SUBSURFACE WATER LEVEL ARE NOT ADEQUATE TO ACHIEVE THIS, IRRIGATION SHALL BE USED AS NEEDED

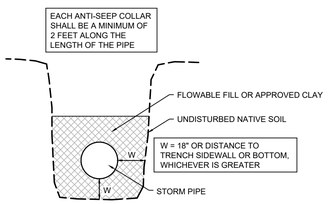
NEW ENGLAND WETMIX (WETLAND SEED MIX)

APPLICATION RATE: 1 LB PER 2500 SF OR 18 LBS PER ACRE

AVAILABLE FROM: NEW ENGLAND WETLAND PLANTS, INC.
820 WEST STREET
AMHERST, MA 01002
416-548-9000
WWW.NEWP.COM

GRAVEL WETLAND - RECOMMENDED MAINTENANCE SCHEDULE

ACTIVITY	SCHEDULE
• REMOVE TRASH AND DEBRIS	AS NEEDED
• INSPECT INFLOW POINTS FOR CLOGGING, REMOVE ANY SEDIMENT	SEMI-ANNUALLY
• INSPECT VEGETATED SWALE FOR EROSION	SEMI-ANNUALLY
• INSPECT SHRUBS AND PERENNIALS, REMOVE DEAD OR DISEASED PLANTS	SEMI-ANNUALLY
• INSPECT CLEANOUT AND RISER ASSEMBLIES	ANNUALLY
• INSPECT FOREBAY SUMP FOR SEDIMENTACCUMULATION REMOVE SEDIMENT WHEN DEPTH REACHES 50% OF SUMP DEPTH	ANNUALLY
• INSPECT INFLOW POINTS AND WETLAND SURFACES FOR BUILD-UP OF SEDIMENT. REMOVE AND REPAIR AS NECESSARY.	ANNUALLY
• INSPECT OUTLET STRUCTURE FOR CLOGGING, DEBRIS, OR SEDIMENT BUILD-UP	ANNUALLY
• REPAIR ANY DAMAGES TO CLEANOUTS, RISERS OR OUTLET STRUCTURES	ANNUALLY



1. A MINIMUM OF TWO ANTI-SEEP COLLARS SHALL BE INSTALLED ON THE OUTLET PIPE .
2. THE COLLAR SHALL BE CONSTRUCTED WITH FLOWABLE FILL (250 PSI CONCRETE) OR APPROVED CLAY.
3. PAYMENT FOR THE ANTI-SEEP COLLARS SHALL BE CONSIDERED SUBSIDIARY TO THE STORMWATER PIPE INSTALLATION.

ANTI-SEEP COLLAR

NTS

STATE OF VERMONT
ROGER J. DICKINSON
No. 3945
Civil
LICENSED
PROFESSIONAL ENGINEER

Date	Revision	By
01/11/23	MOVED KAILEY'S WAY DETAILS TO SHEET 11A	RD
08/19/22	EDITS TO ADDRESS STATE SW COMMENTS	MMI

These plans shall only be used for the purpose shown below:

- [ ] Sketch/Concept
- [ ] Preliminary
- [x] Final
- [ ] Act 250 Review
- [ ] Construction
- [ ] Record Drawing

LANDS OF
HINESBURG CENTER, LLC
VT Route 116 Hinesburg, VT

STORMWATER DETAILS & SPECIFICATIONS

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

Project No.	19054
Survey	N/A
Design	NDS/RD
Drawn	DLH
Checked	RJD
Date	12/14/20
Scale	AS NOTED
Sheet number	10