Attachment 1: Narrative, Location Map, and Soils Map
Rock River Subdivision – Anytown, VT

1. **Introduction**
   Robert Roberts Engineering is writing on behalf of Rock River Partners, LLC to apply for a State Stormwater Discharge Permit pursuant to General Permit 3-9015 for the above referenced project.

2. **Project Description**
   Rock River Partners, LLC is planning the construction of a 20-lot residential subdivision located on North Street in Anytown, Vermont. The project will involve the construction of a private roadway and associated infrastructure to serve the development. Site work is estimated to commence late summer 2018.

   The proposed project will create more than one (1) acre of new impervious surface following construction. A Stormwater Discharge Permit for this project is required by the Environmental Protection Rules, Chapter 18, Subchapter 3, §18-302(a)(1).

3. **Existing Condition**
   Refer to enclosed existing conditions/demolition site plan for the current site conditions. The site is primarily wooded and contains a class II wetland that runs along the south west of the main parcel. The site is predominantly undeveloped with only a small amount of existing impervious surfaces associated with existing offsite development (to remain) in catchment areas 3 and 4, and a small amount of existing onsite impervious in catchment area 3 to be removed.

   The underlying soils are classified as Hydrologic Soils Group 'B' and 'C' soils. Refer to the enclosed soils and stormwater management plans which shows the extent of the mapped soils for the site.

4. **Existing Stormwater System**
   Stormwater runoff from the existing site flows overland through naturally wooded area before reaching the class II wetland. From the wetland, the water flows west ultimately reaching the discharge point an unnamed tributary to the Rock River. There is no existing stormwater collection or treatment system serving the property.

5. **Proposed Stormwater System:**
   The proposed project involves the construction of single family residences, roadways and infrastructure to serve the development. The proposed stormwater system is separated into five distinct catchments each having an associated discharge point.

   i) **Description of Impervious Area**: The amount of impervious surface for catchment area 1 is 0.28 acres; for catchment 2 is 0.08 acres; for catchment 3 is 0.36 acres, for

catchment 4 is 0.86 acres, and for catchment 5 is 0.89 acres, totaling 2.47 acres. For purposes of the standards, catchments 1A and 1B as noted on plan were combined.

ii) **Receiving Water:** All catchment areas drain to a single Class II Wetland tributary to the Rock River.

iii) **Fish Habitat Designation for Receiving Water:** The Class II Wetland and Rock River are classified as warm water fish habitat according to the Vermont Water Quality Standards.

iv) Description of compliance the VSMM:

(1) Post-Construction Soil Depth and Quality Standard: The project Soils Management Plan provides the developer with different options for meeting the applicable standard, as allowable in the VSMM. The plan also depicts the areas of the site subject to the standard and inspection/verification instructions for the contractor.

(2) Water Quality Treatment Standard (WQ_V):

(a) S/N 001: WQv is met in its entirety for catchment area 1 by use of Simple Disconnection.

(b) S/N 002: WQv is met in catchment area 2 by use of Simple Disconnection and by use of an infiltrating Dry Swale for remaining WQv.

(c) S/N 003: WQv is met in catchment area 3 by use of Simple Disconnection and by use of an infiltration basin for remaining WQv.

(d) S/N 004: WQv is met in catchment area 4 by use of Simple Disconnection and an infiltrating surface sand filter for the remaining WQv.

(e) S/N 005: WQv is met in catchment area 5 by use of Simple Disconnection and by use of an infiltration basin for remaining WQv.

(3) Groundwater Recharge Standard: The standard is met site-wide, as allowable in the VSMM, through use of Simple Disconnects throughout the catchments for most rooftops and driveways, along with infiltrating Dry Swale (catchment 2), infiltration basins (2) located each located in catchments 3 and 5, and an infiltrating surface sand filter located in catchment 4.

(4) Channel Protection Standard (CP_V):

(a) S/N 001: CPv provided site-wide under the Hydrologic Condition Method of the Channel Protection Standard. The total Tv provided exceeds the required Tv, in consideration of the same receiving water for which CPv is applicable.

(b) S/N 002: CPv met utilizing the Hydrologic Condition Method, in consideration of runoff reduction practices, including disconnects and through use of a dry swale designed for infiltration of the 1-year 24-hour storm event.

(c) S/N 003: CPv met utilizing the Hydrologic Condition Method, in consideration of runoff reduction practices, including disconnects and through use of an infiltration basin designed for infiltration of the 1-year 24-hour storm event.

(d) S/N 004: CPv met utilizing the Hydrologic Condition Method, in consideration of runoff reduction practices, including disconnects, and through a surface sand filter designed for infiltration of the 1-year 24-hour storm event.

(e) S/N 005: CPv met utilizing the Hydrologic Condition Method through use of an infiltration basin designed for infiltration of the 1-year 24-hour storm event.

(5) Overbank Flood Protection Standard (Q_{P10}): This standard was met site-wide for S/N 001 through S/N 005 in consideration of the single receiving water for all discharge points. Q_{P10} was evaluated under the Hydrologic Condition Method in consideration of runoff reduction practices used and CN_{ADJ} applied to post-development modeling to demonstrate post-development peak discharge rate was less than pre-development peak discharge rate. The Standards Compliance Workbook also confirmed that the standard was met in consideration of the runoff reduction practices employed site-wide.

(6) Extreme Flood Protection Standard (Q_{P100}):

1. S/N 001: Total project imperious is less than 10 acres; standard is waived for the 100-year 24-hour storm.
2. S/N 002: Total project imperious is less than 10 acres; standard is waived for the 100-year 24-hour storm.
3. S/N 003: Total project imperious is less than 10 acres; standard is waived for the 100-year 24-hour storm.
4. S/N 004: Total project imperious is less than 10 acres; standard is waived for the 100-year 24-hour storm.
5. S/N 005: Total project imperious is less than 10 acres; standard is waived for the 100-year 24-hour storm.

The following items are attached for review:

- **Complete NOI form**
- **Attachment 1: Narrative:** Narrative, Location Map, and Soils Map.
- **Attachment 2: Workbooks:** STP Selection Tool and Standards Compliance Workbook
- **Attachment 3: Worksheets:** STP and waiver worksheets, grouped by discharge point
- **Attachment 4: Modeling:** Runoff modeling and calculations demonstrating compliance with the applicable treatment standards.
- **Attachment 5: Plans:** Pertinent plan sheets with all required information outlined in Part 7 of the Application Requirements for Operational Permit Document.
- **A check** in the amount of $2,364.20 Payable to “State of Vermont”.

Location Map

[Insert project specific location map here. You may download topographic map from the Natural Resource Atlas. Please show the site outline, the location of the discharge point(s) and receiving waters. The scale of the location map should be between 1:20,000 and 1:40,000.]

For purposes of this Design Example, an actual location map has not been included here. Designers shall include a location map here, per the instructions above, or alternatively may provide a location map [inset]as part of the submitted plans.

Soils Map

[Insert project specific soils map here. Soils information can be found at the Web Soil Survey website. Hydrologic Soil Groups— "HSGs" shall be overlaid with site outline. Soils information can also be provided as data layer on an existing or proposed condition plan sheet (if included as a data layer on one of the plan sheets please indicate that here]

Project soils map/soils information has been included by the designer as a map layer on the Soils Management Plan (Sheet C-5).