Haystack Crossina, LLC is proposina to construct a mixed use project with 4.905 LF of public roads and 1,618 LF of private roads and supporting infrastructure on a 83.0 acre parcel. The area of disturbance for Phase I is 35.5 acres and 10.2 acres for Phase II.

The project is located west of Hinesburg Road (VT route 116) and south of the Shelburne Falls Road in Hinesburg.

All of the soil disturbance will occur within actively farmed areas.

Existing Conditions — The 83.0 acre property is comprised of actively farmed lands on the eastern half and undeveloped forest and floodplain in the western half of the parcel. No disturbance is proposed in the western half of the property.

Of the 83.0 acres of the property, approximately 35.5 acres of the property is proposed to be disturbed as part of this project.

The site is comprised of modest to minimal sloping soils. The far southeastern portion of the property is the only area that is not rated a hydrologic Group D soil (Wo — Winooski very fine sandy loam).

The soils table below represents the historically farmed areas and does not include the forested and floodplain in the western half of the property. This soil table includes the area where the Hinesburg athletic fields were constructed (not part of this project).

The NRCS soil mapping of the property is summarized below.

Map Unit			Acres in	Percent of
<u>Symbol</u>	<u>Map Unit Name</u>	Rating	AOI	AOI
Cv	Covington silty clay	0.49	22.5%	41.2%
Le	Limerick silt loam	0.43	10.1%	18.5%
Lh	Livingston Clay	0.49	0.5%	0.9%
PeD	Peru fine sandy loam, 20 to 30 percent slopes	0.37	0.2%	0.3%
VeB	Vergennes clay, 2 to 6 percent slopes	0.49	15.9%	29.1%
Wo	Winooski very fine sandy loam	0.37	5.5%	10.0%

70% of the soils on the property have a K value of 0.49 which means that this high rate of erodibility will need to be managed by reducing the time of exposure and mitigation with proper BMPs. Much of the work is being completed in the mid-range soils with a K value of 0.28. This is primarily in the higher sloping ridge lines, that due to slope will require the same diligence as work on the flatter higher K value soils.

Any dewatering activities will require adequate detention time to settle the fines and clays. It is proposed that polyacrylimides be used to mitigate the size of the structures to provide proper settling of suspended solids.

The topographical mapping for the property was developed from a series of field surveys and LIDAR areal mapping.

Areas of Concern — The primary areas of concern for the management of EPSC include (These are depicted on Sheets C7.0 through C7.6):

- 1. The Riggs Brook Stream Crossing. 2. The Center Road extension towards Patrick Brook
- 3. The gravel wetland construction.

Phasing — The project is proposed to be constructed in Phases during the 2021 and later construction seasons. The goal is to initiate grading and infrastructure installation within a Major work area before proceeding to the next.

The phasing work areas are shown on Sheets C7.0 through C7.6.

The phasing will begin with the access off of Shelburne Falls Road and then progress to each of the proposed roads from there. Simultaneously, the initial phase of construction will include the construction of the primary gravel wetlands along the southern portions of the property to act as temporary sediment basins. Borrow materials from the Gravel Wetland excavations will be used to balance the fill required in each work area.

Best Management Practices— The project will use the following BMPs for the protection of the soils and mitigation of suspended solids in the runoff.

- Construction entrances prior to entering a paved surface
- 2. Washing equipment tire and tracks in upland areas away from wetlands, streams or drainages
- 3. Construction fencing for limits of disturbance (LOD) in areas within 50 feet of a
- wetland or stream. 4. Construction flagging for LOD
- Super silt fence for all work within 50—feet of a wetland or stream. 6. Silt fence at all downgradient locations with area of disturbance limited to 1/3 acre
- for each low point in the fence installation.
- Surface water diversion for areas with large upgradient watersheds Sediment traps at low points of sites.
- Inlet Protection.
- 10. Minimizing the amount of time within each work area.
- 11. Stabilizing the site within 3 days of completion of finish grading.
- 12. Utilize erosion control matting (ecm) or straw mulch in all areas of disturbance beyond the green and tee surfaces.

<u>Project Characteristics</u> — The average slope of the areas of disturbance is 3%.

Except for the import of granular materials required for the construction of the roadways and path systems, the intent of the project is to balance the cuts and the fills so as to minimize the need for importing or exporting material.

<u>Preconstruction measures</u> will include the use of construction fencing to demarcate the limits of disturbance along those areas where sensitive features are present (e.g. wetlands or tree retention areas), construction flagging for the remaining areas. Construction access (entrances road and laydown areas) stabilization, surveyed tree clearing limits and silt fence. These areas are shown on Sheets C7.0 through C7.6.

The on-site temporary measures will include the use of contained sites (e.g. pond excavation, utility trenching), inlet protection, temporary stabilization of disturbed surfaces through the use of straw mulch or erosion control matting.

The temporary off—site measures (outside of specific phase areas) to be employed will include the previously discussed surface water diversions and stormwater management facilities. These are shown on Sheets C7.0 through C7.6.

The permanent on—site measures to be used to stabilize the site will include paved roadways and paths, grassed islands and slopes planted with the appropriate grass types. These are shown on Sheets Sheets C7.0 through C7.6.

The project will require that within 7 days of initial disturbance that soils be permanently or temporarily stabilized through the use of hay mulch, ECM, or a crushed stone surface unless these areas are part of an on-going earth disturbance activity or are located within a contained area. The goal is to immediately grass each of the work areas in support of maximizing grow—in of the site.

Winter Construction — Winter construction is proposed. See Sheet C7.11.

EROSION AND SEDIMENT CONTROL STRATEGY - The following techniques are anticipated to be utilized as part of the erosion and sediment control program. The timing and use of each of the techniques is further defined within the Construction Phasing of the project. But will be the responsibility of the contractor to implement on an as needed basis based upon the changing nature of the site disturbance activities only controlled by the site contractor.

1. Use rapidly germinating cover crops prior to seeding when the around would otherwise be bare.

Include rapidly germinating grasses in the seed mixtures when they will not compromise the integrity of the final product. Utilize hydroseeding with mulch when feasible.

Utilize erosion control netting or blankets, with or without seed contained in them on slopes greater than 3:1. 5. Utilizing stabilization materials or sodding areas where runoff is

rapid or concentrated. 6. Limiting traffic in the vicinity of streams and wetlands and installing as few temporary crossings as possible.

Installing water bars (swale/berms) on slopes to and channels before it gains sufficient volume and momentum to cause scouring.

Using stone check dams and silt fences once the soil has

begun to move. Preserving existing trees and vegetation near and within buffer areas until after the site has been stabilized. 10. Controlling dust by providing parking lots with prepared surfaces, limiting traffic in all possible ways, planting stockpiles with cover crops or protective blankets, using water trucks, refraining from

cultivating and smoothing seedbeds until immediately prior to seeding.

Field Protocol — Areas of special concern will be reviewed with the Contractor prior to initiating site clearing activities. These areas will be continually reviewed by the Contractor and the OSPC and any issues will be identified in the daily or weekly reports. All reports shall be distributed via e-mail to all parties in support of the efforts to address areas of concern in a timely manner.

Best Management Practices — BMP's — Examples include, but are not limited to: sediment fence, erosion control matting, seed, and mulch in accordance with the attached Construction Phasing plan and the Vermont Erosion Prevention and Sediment Control Filed Guide.

## Installation Sequencing

- Construction Staking
- A. The construction limits are to be staked in the field by a aualified Surveyor.

B. The remaining clearing and site disturbance limits shall be reviewed by the Engineer prior to initiating any clearing. The Engineer shall designate specimen trees and critical vegetative cover along buffer areas that are to remain during the initial phases of construction.

- 2. Clearing The clearing limits shall be demarcated in the field with continuous flagging. Construction fencing shall be installed along the edges of any stream or wetland buffer areas adjacent to or on the lot. Prior to any timber being harvested and removed from the site, a construction entrance pad shall be installed at the entrance point to the project site. Chipping of branches and other woody material is allowed but the material must be disposed of in an approved manner.
- 3. Inlet Protection Ensure that BMP's are in place and functioning at catch basins, drainage swales, culvert inlets, and other areas as shown on the EPSC site plan.
- 4. Protection of Adjacent Sites Install BMP's along the common lot line of adjacent sites. This would include construction fencing to help avoid unintentional encroachment onto the adjacent property and silt fence when the adjacent lot is downgradient of the construction
- 5. Protection of Construction Site Prior to initiating earthwork on the lot, surface runoff from areas upgradient portions of the construction site shall be diverted from the proposed areas of disturbance using diversion swales, structures, sand bags, curbing, or other approved method. Protect steep exposed slopes from surface runoff by collecting runoff at the top of the slope and diverting it into a stabilized conveyance, such as a slope drain or stabilized swale.

Grubbing shall occur only after the erosion control measures around the downgradient perimeter of the site has been established. Those locations shall be reviewed with the Environmental Specialist and Independent Engineer. Existing topsoil shall be retained and stockpiled on site for re-use.

B. The Contractor shall remove all remaining woody material and tree stumps and dispose of them utilizing one or more of the following methods:

Burning, provided that permits are acquired from the State of Vermont Solid Waste Management Division and the City of South

ii. Disposal on site within designated slope disposal areas only after an insignificant waste Disposal Permit is acquired. At these sites the following standards shall be met

a. 3' separation to the seasonal high groundwater table. 100' separation to surface waters.

c. Thorough mixing of soil and woody material to minimize future

settlement Covering with a minimum of four (4) feet of cover material. Chipping with on-site disposal in accordance with Item 5 or disposal off—site in accordance with State requirements.

iv. Disposal at a certified landfill facility. All grubbing of woody materials shall be completed to a depth of

at least 12". D. The Contractor shall remove all medium to large stones and boulders present within the limits of disturbance including future drainage and infrastructure improvements.

The larger boulders shall be saved for use in retaining walls. The smaller stones may be buried in predetermined disposal sites.

Soil Stockpiles

The Contractor shall strip and stockpile as much as possible of the native topsoil for re-use during a later stage of the project. B. Each topsoil stockpile shall be placed in locations respective of existing environmental features of the site. Special consideration shall be made to maximize the distance (minimum 100') to the nearest water course.

C. Each topsoil pile shall be surrounded on the downgradient side by a row of silt fence.

D. Any topsoil pile which is to remain in place for greater than 15 days shall be temporarily seeded with winter rye to preserve the integrity and minimize the erosion of the soil constituents and release of soluble nutrients.

E. The Contractor shall locate stockpiles on the uphill side of the disturbed areas, if possible. During windy conditions, stockpiled material shall be covered or watered appropriately to prevent wind erosion.

Earth Excavation/Grading

A. Mass earth placement to create the building plateau shall commence only after all remaining EPSC measures depicted on the plans are installed.

B. Surface water diversion BMP's shall employed at the high point of the site until the new drainage swale/hollow is installed. C. The Contractor shall also limit the soil disturbance and seeding application dates to between April 16th and September 15th.

D. All exposed soils areas (not including structural fill soils or stabilized stone areas) shall be protected prior to any forecasted rain event with mulch or erosion control matting. Pin matting with wire staples in accordance with the manufacturers recommendations to ensure full bonding with soil surface.

E. Install stone check dams in grass-lined swales 50 feet on center to prevent silt from washing into the drainage system during construction. Check dams are to be removed when vegetation is established.

9. Temporary Construction Entrance — Required for entrance and egress points from the site.

10. Planting Preparation, Seed, Mulch, Germination, Maintenance A. The preparation of the topsoil for planting includes final smoothing and removal of small stones. This work shall occur immediately prior to seedingor placement of EC matting so as to avoid exposure to erosion damage and to reduce the amount of dust generated as part of this process.

B. Planting is to occur immediately after the topsoil preparation with special caution being given to upcoming storm events that may displace the seed/soil.

C. The planted areas shall be water regularly to protect the new plants but not over watered so as to cause excess runoff and

D. All ditches that are not stone-lined shall be topsoiled, and stabilized with erosion control matting. Any area which shows signs of erosion shall be restabilized immediately and maintained until permanent vegetation is established. of E. Maintenance:

1. All erosion control measures shall be inspected weekly and repaired and/or replaced as needed.

2. All erosion control measures shall be inspected after periods of heavy rain. 3. The stabilized road entrance shall be top dressed with additional stone should the existing stone become clogged with sediment. 4. Hay or straw mulch is subject to wind action. Mulch, where

11. Surface Stabilization — The following stabilization methods are

permitted) may require anchoring as the weather conditions warrant.

Temporary stabilization — Straw mulch (during the earliest phases of the project) or erosion control matting placement is required on all non-contained disturbed areas prior to forcasted rain

Install stone check dams in drainage swales 50 feet on a center to prevent silt from washing into the drainage system during construction. Check dams shall be removed when vegetation is established.

C. Control dust through the application of water. The exact number of applications and amount shall be based upon field and weather conditions. It shall be spread in such manner and by such devices that uniform distribution is attained over the entire area on which it is ordered placed. D. Install crushed stone apron of at least 15' width around the

perimeter of the building following backfill of the foundation walls. Install temporary (sacrificial) crushed stone on all access ways and laydown areas. These areas will be covered later with the roadway/perking lot base materials or with topsoil. Permanent Stabilization — Required of all surfaces at the completion of construction. The Contractor will install 4" topsoil, sod, seed (where permitted), fertilize, lime, and mulch (seeded greas) the disturbed areas as soon as possible following completion of

Use rapidly germinating cover crops prior to seeding when the ground would otherwise be bare.

Include rapidly germinating grasses in the seed mixtures when they will not compromise the integrity of the final product. Utilize hydroseeding with mulch when feasible.

Owner/Contractor Responsibilities:

1. The Owner/Contractor (O/C) is responsible for the on-going maintenance of all lot specific erosion prevention and sediment control devices and practices. Any subcontractor conducting earth disturbance activities on the project site shall review the EPSC plan and General Permit and shall complete an application and file with the State a request for Co-Permittee status.

- 2. Periodic inspections shall be performed in accordance with the above schedule to ensure that the erosion and sediment control measures are functioning as required. In addition to the standard periodic inspections, inspections of all of the on-site systems shall be conducted after a rain event causing stormwater to leave the site. Any problems noted during these inspections shall be corrected immediately.
- 3. Once construction has commenced, the O/C is responsible for the maintenance of erosion and sediment control measures protecting nearby stormwater collection systems and water courses. It is critical that sediment not be allowed to invade the receiving waters.
- 4. The temporary construction entrance provides a place for parking vehicles off-street and a spot where material can be off-loaded. The intent of the requirement is to provide a stable surface for parking vehicles where mud and debris is not likely to be tracked onto the street. Proper maintenance of the area is required until such time as a permanent driveway can be put into place.
- 5. During the entire construction process, the O/C is responsible for ensuring that mud, dirt, rocks, and other debris are not allowed to erode or be tracked onto the street system by construction vehicles. Should any mud or other debris find its way to the road system, the O/C shall take immediate steps to have it removed.

6. Maintenance - Silt Fence

A. Inspect sediment fences daily to ensure that construction activities have not impacted their operability and after each rainfall event causing runoff from the site

B. Should the fabric of the sediment fence collapse, tear, decompose, or become ineffective, replace promptly.

C. Remove the sediment deposits as necessary to provide adequate storage volume for the next rain event and to reduce pressure on the fence. Take care to avoid damaging or undermining the fence during clean-out.

D. If the utilities are installed after BMP's have been put into place, the permit holder is responsible for control of erosion and sediment during the construction process and for ensuring that all BMP devices are re-installed per the original design.

On-Site Plan Coordinator Inspections

1. The OSPC will normally inspect erosion prevention and sediment control measures in conjunction with routine inspections. Inspections will ensure that proper placement and installation of the erosion prevention and sediment control measures are in place.

2. The first inspection will occur prior to clearing of the site to ensure that proper BMP's are in place, including proper demarcation of the clearing limits, installation of construction fencing along the stream/wetland buffer limits, and any other devices required to protect the receiving waters from sediment deposition during the clearing phase.

3. Prior to initiating grubbing and mass earth excavation, the OSPC shall inspect the site to ensure that the construction fencing, silt fence. construction entrance, and other required BMP's are in place.

4. The OSPC will conduct weekly inspections and will prepare weekly reports which are to remain on-site until final stabilization is acheived.

1. All sediment removed from sediment control practices as part of

maintenance shall be disposed of in an area that is:

a. Less than 5% slope. b. At least 100ft from any downslope water body or conveyance to a waterbody (including storm drain inlet or ditch)

## 2. Stabilize Exposed Soil

c. Area shall be vegetated

Additional Requirements:

Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

All areas of disturbance must have temporary or permanent stabilization within 7 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in the area must be stabilized at the end of each work day.

The following exceptions apply:

• Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.

• Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade.

<u>How to comply:</u> Prepare bare soil for seeding by grading the top 3 to 6 inches of soil and removing any large rocks or debris.

April 15 - Sept. 15 --- Ryegrass (annual or perennial: 20 lbs/acre) Sept. 15 - April 15 --- Winter rve: 120 lbs/gcre

Seeding Rates for Final Stabilization: Choose — See Sheet C6.6

April 15 - Sept.15 -- Hay or Straw: 1 inch deep (1-2 bales/1000 s.f.)Sept.15 - April 15 -- Hay or Straw: 2 in. deep (2-4 bales/1000 s.f.)

Erosion Control Matting As per manufacturer's instructions

Seeding Rates for Temporary Stabilization

As per manufacturer's instructions

3. Stabilize Soil at Final Grade

Stabilizing the site with seed and mulch or erosion control matting when it reaches final grade is the best way to prevent erosion while construction continues.

Requirements:

Within 48 hours of final grading, the exposed soil must be seeded and mulched or covered with erosion control matting. How to comply:

sediment and erosion control measures and will reduce the total disturbed For seeding and mulching rates, follow the specifications under Rule 8. Stabilizing Exposed Soil.

Bring the site or sections of the site to final grade as soon as possible

after construction is completed. This will reduce the need for additional

4. Dewatering Activities

Treat water pumped from dewatering activities so that it is clear when leaving the construction site.

Requirements: Water from dewatering activities that flows off of the construction site must be clear. Water must not be pumped into storm sewers, lakes, or wetlands unless the water is clear.

<u>How to comply:</u>

Using sock filters or sediment filter bags on dewatering discharge hoses or pipes, discharge water into silt fence enclosures installed in vegetated areas away from waterways. Remove accumulated sediment after the water has dispersed and stabilize the area with seed and mulch.

END OF SECTION ESPC NARRATIVE

CONTINUED ON NEXT SHEET

SITE ENGINEER:



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OWNER:

HAYSTACK CROSSING, LLC c/o JOSEPH BISSONETTE

68 RANDALL STREET SOUTH BURLINGTON, VT 05403

APPLICANT:

BLACKROCK CONSTRUCTION, LLC

68 RANDALL STREET

SOUTH BURLINGTON, VT 05403

PROJECT:

HAYSTACK CROSSING

SHELBURNE FALLS ROAD **VERMONT ROUTE 116** HINESBURG. VERMONT 05461

DATE CHECKEI 11/22/19 DSM TOWN RESUBMITTAL DSM UPDATE PER TOWN COMMENTS 1/10/20 DSM REV. PER CONDITIONS OF APPROVAL

EPSC NARRATIVE

DRAWING NUMBER

OCT. 4, 2019 SCALE AS SHOWN

PROJ. NO. 13127

DATE