# WETLAND SOIL EVALUATION
# 1.99 MW SOLAR ARRAY
# PLATT HILL ROAD
# WINCHESTER – CONNECTICUT
# PREPARED FOR LODESTAR ENERGY
# MARCH 20, 2020


**Trinkaus Engineering, LLC**
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## Property Description

The subject property is located on the east side of Platt Hill Road in Winchester, Connecticut, north of Taylor Brook Road and south of Dayton Road/Reaching Hill Road. The original site contained 104.5 acres and a 24-lot Conservation Subdivision was designed and approved on the 104.5 acre site back in 2005. The current owners are selling all the land except for three approved building lots which front on Platt Hill road. There an Eversource Easement containing utility poles located in the northeast corner of the site.

## Wetland/Watercourses

There are several wetland areas on the subject property. These areas were originally delineated by Marc Beroz, Certified Soil Scientist of MB Soil Mapping, field located by Dubiel Associates and shown on the base mapping for this solar array. Mr. Beroz (retired) reviewed the original subdivision mapping and prepare a letter stating that the wetland boundaries he delineated in the field and shown on the mapping represents his field work. The wetland boundaries in the general vicinity of the portion of the site for the solar array were field verified by James McManus, Soil Scientist of JMM Wetland Consulting. There are two small vernal pools on the subject property, which are located in the northeast corner of the site and on the approximately 400' away from the proposed solar array. They are shown on the mapping by Trinkaus Engineering, LLC in Figure 1.

Mr. McManus also evaluated the quality of the existing wetlands at the two proposed driveway crossing shown on the plans prepared by Trinkaus Engineering, LLC and commented on the potential impacts of these wetland/intermittent stream crossings. The location of the two crossing are in the same location as the road which was evaluated and approved by the Winchester Inland Wetlands and Watercourses Commission.

Lastly, a copy of the approval letter from the Town of Winchester Inland Wetlands and Watercourses Commission for the Trade Winds Farm subdivision is attached.

The following documents are provided in Appendix "A" of this document:

1. Wetland Delineation Report by MB Soil Mapping (June 7, 2003), by Marc Beroz, Certified Soil Scientist.
2. Letter from Marc Beroz (October 23, 2019) confirming that the wetland boundary shown on the Class A-2 Survey represents the work he did in the field in 2003.
3. Letter from JMM Wetland Consulting Services, LLC (January 6, 2020), by James McManus, Certified Professional Soil Scientist confirming the wetland boundaries delineated by Marc Beroz.
4. Report from JMM Wetland Consulting Services, LLC (March 17, 2020) by James McManus, Certified Professional Soil Scientist evaluating the proposed wetland/intermittent stream crossings by the proposed driveway.
5. Town of Winchester – City of Winsted approval letter from the Inland Wetlands and Watercourses Commission for the Trade Winds Farm Subdivision for regulated activities associated with the 26 lot subdivision.

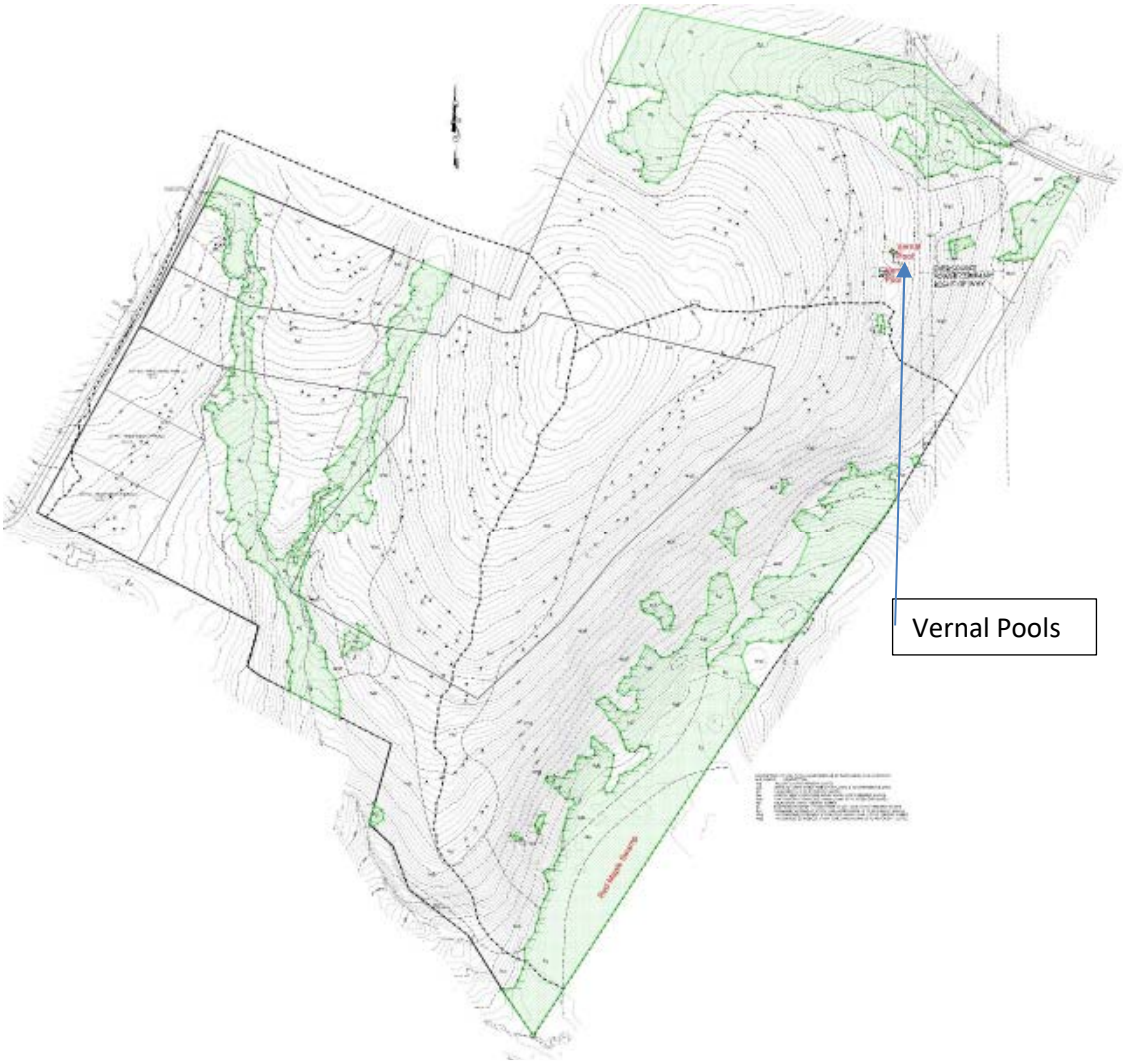


Figure 1 – Wetland/Watercourse/Vernal Pool Mapping

# APPENDIX "A"

1. **Wetland Delineation Report by MB Soil Mapping, June 7, 2003**
2. **Letter from Marc Beroz, Certified Soil Scientist (retired), October 23, 2019**
3. **Letter from JMM Wetland Consulting Services, LLC, January 6, 2020**
4. **Report from JMM Wetland Consulting Services, LLC, March 18, 2020**
5. **Town of Winchester Inland Wetlands and Watercourses Commission Approval letter, November 21, 2005**

# *MB Soil Mapping*

*Soil and Environmental Consulting*

Marc B. Beroz
Phone & Fax (860) 349-3334

102 Creamery Road
Durham, CT 06422

Mr. Steven D. Trinkaus, P.E.
Trinkaus Engineering, LLC
437 Bucks Hill Road
Southbury, CT 06488

June 7, 2003

JOB NO. 03E28M1

Dear Mr. Trinkaus:

RE: SCOVILL PROPERTY, PLATT HILL ROAD & DAYTON ROAD, WINCHESTER, CT

At your request, I made an on-site investigation of the approximately 104 acre Scovill property located east of Platt Hill Road and south of Dayton Road in Winchester, Connecticut. The purpose of my visits was to identify the Connecticut inland wetland and watercourse boundaries. The field work was done on May 29 and 30 and June 2, 3 and 5, 2003.

The wetland boundaries are marked with blue flagging labeled MB 1 through MB 254, MB 260 through 563 and MB 600 through 678. Please refer to the enclosed sketch for the approximate location of the inland wetland boundaries and key wetland flag numbers.

The soil map and narrative are a refinement of data contained in the Soil Survey of Litchfield County, Connecticut. The symbols on the sketch identify map units. Each map unit has a unique combination of soils. Areas with the same symbol have similar composition. The following map unit descriptions are based on the data collected at this particular site. For this reason, there may be some differences between these descriptions and map unit symbols and those provided in the soil survey report.

## WETLAND SOILS

Map Unit AQ

The AQ map unit consists primarily of soils named Aquents on 0 to 5 percent slopes. These soils have been disturbed by man and have the following characteristics: They are in places that have less than 2 feet of fill over naturally occurring poorly or very poorly drained soils; or they are located where the naturally occurring wetland soils have been mixed to the extent that the natural soil layers are no longer identifiable; or the original soil materials have been excavated to the ground water table. These soils have a seasonal high water table within 20 inches of the soil surface, have an aquic moisture regime and can be expected to support

hydrophytic vegetation.

Included in mapping is a man made pond in the northwest corner of the property.

Map Unit Pm
The Pm map unit is composed of Palms soils on 0 to 1 percent slopes. Palms soils are very deep and very poorly drained. Typically they have an organic surface layer 16 to 51 inches thick. The underlying layer is loamy in texture to a depth of 60 inches or more. Palms soils have a water table at or near the soil surface for much of the year.

Map Units Rg and RgE
The Rg and RgE map units are composed primarily of Ridgebury soils. Ridgebury soils are very deep, poorly drained and formed in compact glacial till. Typically they have a fine sandy loam or loam surface layer and subsoil over a firm loam, fine sandy loam or sandy loam substratum that extends to a depth of 60 inches or more.

Ridgebury soils have a densely compacted layer commonly called hardpan with its upper boundary between the depths of 14 to 30 inches. The hardpan is very slowly permeable. Water that enters the soil moves downward to the hardpan layer and then tends to move laterally over the hardpan surface. Depth to the seasonal high water table is less than 20 inches during the fall through early spring months.

Included in mapping are very poorly drained soils; moderately well drained Woodbridge soils; soils that formed in alluvial sediments; and soils that have been disturbed by prior land use activities.

Slopes are dominantly 0 to 15 percent in map unit Rg and 15 to 45 percent in map unit RgE.

## NON-WETLAND SOILS

The non-wetland soils were not studied in detail. Observations were made of these soils only in the process of identifying the wetland sites. The following descriptions do not constitute a detailed soil survey, but may be used as an aid in site planning.

Map Unit CrC
The CrC map unit consists primarily of Charlton soils on 3 to 15 percent slopes. Charlton soils are very deep, well drained and formed in loose glacial till. Typically they have a fine sandy loam surface layer and subsoil over a friable fine sandy loam or sandy loam substratum that extends to a depth of 60 inches or more.

Included in mapping are soils formed in dense till; areas of steeper slopes; and soils that have been disturbed by prior land use activities.

Map Unit Ma

The Ma map unit consists primarily of man-made, well drained and moderately well drained soils in cut and/or fill areas. The soils are named Udorthents. Slopes are dominantly 0 to 15 percent. The fill is mostly earthy materials but may also contain minor amounts of non-earthy materials such as pieces of concrete, brick, wood, metal and glass. In cut areas the natural topsoil and subsoil layers have been removed and the substratum materials are now at the soil surface.

Map Units PeC and PeD

The PeC and PeD map units are composed primarily of Paxton soils. Paxton soils are very deep, well drained and formed in dense basal till. Typically they have sandy loam, fine sandy loam or loam textures that extend to a depth of 60 inches or more.

Paxton soils have a hardpan layer with its upper boundary between the depths of 18 to 38 inches resulting in a perched water table. The seasonal high water table is perched on the hardpan layer primarily during the late winter and early spring months.

Included in mapping are soils formed in loose till; moderately well drained Woodbridge soils; and soils that have been disturbed by prior land use activities.

Slopes are dominantly 3 to 15 percent in map unit PeC and 15 to 35 percent in map unit PeD. The topographic data on the base map is not site specific. As a result, there are locations with slopes that are flatter or steeper than specified by the individual map unit delineations.

Map Units WzC and WzE

The WzC and WzE map units consist primarily of Woodbridge soils. Woodbridge soils are very deep, moderately well drained and formed in dense basal till. Typically they have fine sandy loam or loam textures to a depth of 60 inches or more.

Woodbridge soils have a hardpan layer with its upper boundary between the depths of 18 to 30 inches resulting in a perched water table. The seasonal high water table is perched on the hardpan layer primarily during the late fall through early spring months.

Included in mapping are soils that have been disturbed by prior land use activities.

Slopes are dominantly 3 to 15 percent in map unit WzC and 15 to 45 percent in map unit WzE. The topographic data on the base map is

not site specific. As a result, there are locations with slopes that are flatter or steeper than specified by the individual map unit delineations.

The identification of the soils on this site was based on field observations and the guidelines of the National Cooperative Soil Survey Program.

Please contact me if you have any questions.

Sincerely,

Marc B. Beroz
Soil Scientist

Marc B Beroz
MB Soil Mapping
14 Waquoit Farms Drive
East Falmouth, MA 02536

Mr. Steven D. Trinkaus, P.E.
Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, CT 06488

October 23, 2019

JOB NO. 03E28M1

Dear Mr. Trinkaus:

RE: TRADE WINDS FARM SUBDIVISION, PLATT HILL ROAD & DAYTON ROAD, WINCHESTER, CT

I field delineated the wetland boundaries on this parcel on May 29 and 30 and June 2, 3 and 5, 2003. On August 7, 2003 I reviewed a subdivision plan for this parcel that included a survey of my wetland delineations. At that time, I had written a letter stating that the surveyed wetland boundaries appeared to accurately represent the work I had done in the field.

Today I reviewed another subdivision map dated April 3, 2006 showing the surveyed wetland boundaries. The wetland boundaries shown on this 2006 map agree with my field sketches, notes and the prior 2003 site plan. Both the 2003 and 2006 subdivision maps show the same wetland delineations and appear to accurately represent my field work.

Please contact me if you have any questions.

Sincerely,

Marc B. Beroz
Soil Scientist

# JMM WETLAND CONSULTING SERVICES, LLC

**23 Horseshoe Ridge Road**
**Newtown, CT 06482**

Phone: 203-364-0345
Mobile: 203-994-3428
james@jmmwetland.com
jmmwetland.com

January 6, 2020

Mr. Steven Trinkaus, P.E.
Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, CT 06488

**RE:** ***Site Investigation***
Platt Hill Road, Winchester, Connecticut

*JMM Job # 19-2523-WIN-1*

Dear Mr. Trinkaus:

Per your request, JMM Wetland Consulting Services, LLC (JMM) conducted a site visit at the above-referenced site on November 14th, 2019. The purpose of the investigation was to verify the previously delineated regulated wetland areas, conducted by MB Soil Mapping. Specifically, JMM reviewed four (4) separate areas (i.e., Areas A, B, C, D) as shown on the Wetland Verification Plan given to JMM by your office (i.e., JMM Study Area).

The soils within the JMM study area were observed to be undisturbed within the upland and wetland areas. These undisturbed soils are derived from glacial till deposits (i.e., unstratified sand, silt, and rock). The "upland type" soils are identified as the well-drained Paxton (84) soils series and the moderately well drained Woodbridge (45) soil series.

**Paxton fine sandy loam (84).** This series consists of deep, well drained soils formed in a coarse-loamy mantle underlain by firm, compact glacial till on uplands. They are nearly level to very steep soils on till plains, low ridges and drumloidal landforms. The soils formed in acid glacial till derived mainly from schist, gneiss or granite. In tilled areas, these soils have a dark brown fine sandy loam surface layer 8 inches thick. The subsoil from 8 to 26 inches is dark yellowish brown and olive brown fine sandy loam. The substratum from 26 to 60 inches is olive, very firm and brittle gravelly fine sandy loam.

**Woodbridge fine sandy loam (45).** This series consists of deep, moderately well drained soils formed in a coarse-loamy mantle underlain by firm, compact glacial till on uplands. They are nearly level to moderately steep soils on till plains, low ridges and drumloidal landforms. The soils formed in acid glacial till derived mainly from schist, gneiss or granite. In tilled areas, these soils typically have a very dark grayish brown fine sandy loam surface layer 7 inches thick. The subsoil from 7 to 30 inches is dark yellowish brown and light olive brown fine sandy loam, mottled below 18 inches. The substratum from 30 to 60 inches is light olive brown, very firm and brittle gravelly fine sandy loam.

The undisturbed "wetland type" were identified as the Ridgebury (2) soil series.

**Ridgebury fine sandy loam (2).** This soil series consists of deep, poorly and somewhat poorly drained soils formed in a coarse-loamy mantle underlain by firm, compact glacial till on uplands. They are nearly level to moderately steep soils on till plains, low ridges and drumloidal landforms. The soils formed in acid glacial till derived mainly from schist, gneiss or granite. Typically these soils have a black sandy loam surface layer 6 inches thick. The mottled subsoil from 6 to 16 inches is olive gray sandy loam. The mottled substratum from 16 to 60 inches is a light olive brown and olive, very firm and brittle gravelly sandy loam.

At each location within the study area the previous delineated boundary was carefully reviewed within approximately 150-feet in all directions, for its accuracy. JMM reviewed the soils with the use a hand-held soil auger and spade, to a minimum depth of 24-inches and it was determined that the previously delineated wetland boundaries are substantially correct, and no adjustments are necessary. Moreover, no additional regulated wetland or watercourse resources were identified within the overall study area.

Please call us if you have any questions on the above or need further assistance.

Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC

James M. McManus, MS, CPSS
Certified Professional Soil Scientist (No. 15226)

# JMM WETLAND CONSULTING SERVICES, LLC

**23 Horseshoe Ridge Road**
**Newtown, CT 06482**

Phone: 203-364-0345
Mobile: 203-994-3428
james@jmmwetland.com
jmmwetland.com

March 18, 2020

Mr. Steven Trinkaus, P.E.
Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, CT 06488

**RE:** ***Site Investigation***
Platt Hill Road, Winchester, Connecticut

*JMM Job # 19-2523-WIN-1*

Dear Mr. Trinkaus:

Per your request, JMM Wetland Consulting Services, LLC (JMM) is writing this letter to comment on the proposed two (2) wetland crossings to provide access to the proposed ground-mounted solar array project at the above-referenced site. The proposed 24.8-acre solar array project will be accessed off of Platt Hill Road via a 12-foot wide gravel driveway. Two (2) unavoidable wetland/watercourse crossings are proposed to allow access to the area for the solar arrays. The access driveway will be gravel-surfaced, and be crossed-sloped to sheet flow stormwater runoff to an adjacent meadow and/or forested area.

As you may recall, on November 14th, 2019, JMM visited the site for the purpose of verifying previously delineated regulated wetland areas, conducted by MB Soil Mapping. Specifically, JMM reviewed four (4) separate areas (i.e., Areas A, B, C, D) as shown on the Wetland Verification Plan given to JMM by your office (i.e., JMM Study Area). Two of the four (4) areas (i.e., areas A & B), which were reviewed by JMM, are the two areas proposed to be crossed with the gravel access driveway.

The two wetland crossing areas are comprised of an intermittent watercourse and its associated wooded swamp. The first crossing (Crossing #1) is located in the western part of the site and east of Platt Hill Road. The proposed direct impact at Crossing #1 is 775-square feet with a maximum depth of fill of 4-feet and the total volume of fill of 270-cubic yards. Crossing #2 is located approximately 440 feet to the east of Crossing #1. The direct wetland impact at this

location is 842-square feet with a maximum depth of fill of 3.6-feet. The cubic yards of material would be 106-cubic yards.

It is worth noting that a residential subdivision plan with the same two wetland crossings was approved by the Winchester Inland Wetlands and Watercourses commission. This subdivision was never developed; however, the proposed direct wetland impact at that time at Crossing #1 was proposed to be 2,284-square feet with a maximum depth of fill of 4-feet and the total volume of fill of 270-cubic yards. At Crossing Area #2 the amount of direct wetland impact proposed was equal to 2,620-square feet with a maximum depth of fill of 4-feet, and the total volume of fill was 330-cubic yards. Compared to a residential subdivision roadway, the gravel access drive to the solar arrays will only be used periodically during the year, while the subdivision roadway would have been used every day throughout the year.

Therefore, it is JMM's professional opinion that as proposed, and with diligent monitoring of erosion and sediment controls, the proposed gravel access driveway will not have significant adverse short-term (construction) or long-term (water quality/habitat) impacts upon the regulated resources.

Please call us if you have any questions on the above or need further assistance.

Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC

James M. McManus, MS, CPSS
Certified Professional Soil Scientist (No. 15226)

# TOWN OF WINCHESTER – CITY OF WINSTED

November 21, 2005

## Certified mail # 7003 1680 0001 4301 9412

To Whom It May Concern:

At their Regular Meeting of November 16, 2005 of the Inland Wetlands and Watercourses Commission voted to ***Approve*** **Application #IW 05-07, Platt Hill Road,** request for residential subdivision of 26 lots in an open space subdivision with 2 wetland crossings and discharge of storm water within 50 feet of wetlands, application of Steven Trinkaus, property of Barbara Scovil Laganga, Ann Scovil Cook, Susan Scovil MacDougal, Samuel B. Scovil, Jr. & Samuel B. Scovil, Sr., Map 43, Blk 154, Lot 22-1, Zone RU-3 as shown on plans entitled "Trade Winds Farm, An Open Space Subdivision, 104.5+ Acres-Platt Hill Road-Winchester-Connecticut" prepared by Trinkaus Engineering, LLC, dated July 26, 2005 and based on testimony.

This authorization refers to your application to conduct regulated activities in the Town of Winchester. The Inland Wetlands Commission has considered your application with due regard for the matters enumerated in the Inland Wetlands Regulations and has found that the proposed work, as specified and conditioned below, conforms to the purposes and provisions of said regulations.

**Activity**: 26 Lot open space subdivision **IW # 05-07**

The authorized activity is based on plans and application submitted by the applicant and on testimony, and is subject to the following conditions:

1. The permittee shall notify the Inland Wetlands Enforcement Officer immediately upon the commencement of work and upon its completion.
2. If the authorized activity is not completed within five years from the **issuance date of 11/16/05** said activity shall cease and, if not previously revoked or specifically renewed or extended, this permit shall be null and void. Any request to renew or extend the expiration date of a permit should be filed in accordance with the Inland Wetlands Regulations of the Town of Winchester. Expired permits may not be renewed and the Inland Wetlands Commission may require a new application for regulated activities.
3. All work and all regulated activities conducted pursuant to this authorization shall be consistent with the terms and conditions of this permit. A copy of the permit and plans shall be on site at all times. Any structures, excavation, fill, obstructions, encroachments, or regulated activities not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension or revocation.
4. This authorization is not transferable without the written consent of the Inland Wetlands Commission.
5. In evaluating this application, the Inland Wetlands Commission has relied on information provided by the applicant. If

**Office of Inland Wetlands & Watercourses**

Town Hall
338 Main St.
Winsted CT 06098

**Scott Eisenlohr**
**Inland Wetland Agent**

Phone: 860-738-6980
Fax: 860-738-7053

suspended, or revoked and the permittee may be subject to any other remedies or penalties provided by law.

6. The permittee shall employ the best management practices, consistent with the terms and conditions of this permit, to control storm water discharges and to prevent erosion and sedimentation and to otherwise prevent pollution of wetlands or watercourses. Permittee will provide a copy of approved plans to contractor which shall stay on site and be available for review or inspection during the duration of work. For information and technical assistance, contact the Wetlands Enforcement Officer. The permittee shall immediately inform the Commission of any problems involving the wetlands or watercourses that have developed in the course of, or that are caused by, the authorized work.
7. No equipment or material including without limitation, fill construction materials, or debris, shall be deposited, placed or stored in any wetland or watercourse on or off site unless specifically authorized by this permit.
8. This permit is subject to and does not derogate any rights or powers of the Town of Winchester, conveys no property rights or exclusive privileges, and is subject to all public and private rights to all applicable federal, state and local laws. In conducting and maintaining any activities authorized herein, the permittee may not cause pollution, impairment, or destruction of the inland wetlands and watercourses of Winchester.
9. If the activity authorized by the inland wetlands permit also involves activity or a project that requires zoning of subdivision approval, special permit, variance, or special exception, no work pursuant to the wetlands permit may begin until such approval is obtained.
10. The permittee shall maintain sediment and erosion controls at the site in such an operable conditions as to prevent the pollution of wetlands and watercourses. Said controls are to be inspected by the permittee for deficiencies at least once per week and immediately after rains. The permittee shall correct any such deficiencies within 24 hours of said deficiency being found. The permittee shall maintain such control measures until all areas of disturbed soils at the site are stabilized.
11. The permittee, contractor and/or owner shall conduct all operations at the site in full compliance with this permit, to the extent provided by law, may be held liable for any violations of the terms and conditions of this permit and are responsible for any violation they may have created.
12. Wetland flagging to stay in place during the construction process. Missing flags to be replaced upon the Wetland Agent's request if required for inspection or enforcement.

13. through 33. As listed on Attachment A (attached hereto).

If you have any questions regarding this matter, please call me.

Sincerely,

Scott Eisenlohr

Scott Eisenlohr
Inland Wetlands Enforcement Officer

C: file

**Office of Inland Wetlands & Watercourses**

Town Hall
338 Main St.
Winsted CT 06098

**Scott Eisenlohr**
**Inland Wetland Agent**

Phone: 860-738-6980
Fax: 860-738-7053

## ***ATTACHMENT A***

**Motion to approve Application #IW05-07, Platt Hill Road request for residential subdivision of 26 lots in an open space subdivision with 2 wetland crossings and discharge of storm water within 50 feet of wetlands, application of Steven Trinkaus, property of Barbara Scovil Laganga, Ann Scovil Cook, Susan Scovil MacDougal, Samuel B. Scovil, Jr. & Samuel B. Scovil, Sr., Map 43, Blk 154, Lot 22-1, Zone Ru-3 as shown on plans entitled "Trade Winds Farm, An Open Space Subdivision, 104.5+ Acres-Platt Hill Road-Winchester-Connecticut" prepared; by Trinkaus Engineering, LLC, dated July 26, 2005, based on testimony and subject to the following conditions:**

## CONDITIONS OF APPROVAL

1. The permittee shall notify the Inland Wetlands Officer immediately upon the commencement of work and upon its completion.

2. If the authorized activity is not completed within five years from the issuance date of the permit, said activity shall cease, and if not previously revoked or specifically renewed or extended, this permit shall be null and void. Any request to renew or extend the expiration date of a permit should be filed in accordance with the Inland Wetland Regulations of the Town of Winchester. Expired permits may not be renewed and the Inland Wetlands Commission may require a new application for regulated activities.

3. All work and all regulated activities conducted pursuant to this authorization shall be consistent with the terms and conditions of this permit. Any structures, excavation, fill, obstructions, encroachments, or regulated activities not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension or revocation.

4. This authorization is not transferable without the written consent of the Inland Wetlands Commission.

5. In evaluating this application, the Inland Wetlands Commission has relied upon information provided by the applicant. If such information is subsequently proved to be false, incomplete, or misleading, this permit may be modified, suspended, or revoked and the permittee may be subject to any other remedies or penalties provided by law.

6. The permittee shall employ the best management practices, consistent with the terms and conditions of this permit, to control storm water discharges and to prevent erosion and sedimentation and to otherwise prevent pollution of wetlands or watercourses. For information and technical assistance, contact the Wetlands Enforcement Officer. The permittee shall immediately inform the Commission of any problems involving the wetlands or watercourses that have developed in the course of, or that are caused by the authorized work.

7. No equipment or material including without limitation, fill construction materials, or debris, shall be deposited, placed or stored in any

wetland or watercourse on or off site unless specifically authorized by this permit.

8. This permit is subject to and does not derogate any rights or powers of the Town of Winchester, conveys no property rights or exclusive privileges, and is subject to all public and private rights to all applicable federal, state and local laws. In conducting and maintaining any activities authorized herein, the permittee may not cause pollution, impairment, or destruction of the inland wetlands and watercourses of Winchester

9. If the activity authorized by the inland wetlands permit also involves activity or a project that requires zoning or subdivision approval, special permit, variance or special exception, no work pursuant to the wetlands permit may begin until such approval is obtained.

10. The permittee shall maintain sediment and erosion control measures at the site in such an operable conditions as to prevent the pollution of wetlands and watercourses. Said controls are to be inspected by the permittee for deficiencies at least once per week and immediately after rains. The permittee shall correct any such deficiencies within 24 hours of said deficiency being found. The permittee shall maintain such control measures until all areas of disturbed soils at the site are stabilized.

11. The permittee, contractor and/or owner shall conduct all operations at the site in full compliance with this permit, to the extent provided by law, may be held liable for any violations of the terms and conditions of this permit and are responsible for any violation they may have created.

12. Copy of the DEP and Army Corp. of Engineers permit must be submitted to the Inland Wetlands Agent within 10 days of its submission for review by the Inland Wetlands Agent.

13. All work shall be in accordance with project plan set, sheets 1 to 27 of 27 as prepared by Trinkaus Engineering, LLC, dated: July 26, 2005 with sheet numbers 3, 4, and 12 revised to 10/21/05.

14. Conservation Area Markers approved by Inland Wetlands Agent are to be set above the meadow grassed filter strips installed on all lots after lot stabilization (seeding and mulch of lawns and meadow filter strip) is complete and prior to issuance of Certificate of Occupancy. Conservation markers shall be placed 1 every 100 feet or a minimum of 3 per lot. The locations shall be approved by the wetlands agent prior to installation. The vernal pools must be permanently marked with signage approved by the Inland Wetlands Commission. One Thousand ($1,000) bond should be posted prior to construction to ensure this action.

15. Orange construction fencing shall be placed along outside boundary of allowable construction activity area on each lot and in any area in which infrastructure construction activity is proposed, as directed by the town wetland agent and prior to initiation of construction in any particular area. All inland wetland flags will remain in place.

16. An on-site soil and erosion control specialist from the Northwest Conservation District shall be retained by the IWC at the permittee's cost to inspect the onsite erosion and sedimentation controls weekly and after

significant storm events and file reports immediately thereafter with the Wetlands Office, copies to the IWC chair and permittee's project manager. These reports must include identification of the area inspected, degree of compliance and corrective action taken. If unavailable, a specialist shall be chosen by the IWC. Escrow account will be established by the Town and paid by the applicant for inspections and reports. The escrow amount will be the estimated monthly invoice. Failure to maintain funds shall be grounds for Wetland Agent to issue Cease & Desist.

17. Parties, commission members, and outside consultants need to be independent to preclude perceived or real ethics or conflict of interest violations.

18. The Certified Letter of Approval shall be placed on the final plans and recorded in the Winchester Land Records.

19. The amount of bond for the E&S controls required is to be determined by the IWC agent in conjunction with the town engineer based upon an engineering cost estimate by the project engineer per phase as part of overall bond for subdivision infrastructure improvements.

20. Designated open space shall be set aside in perpetuity. Documents must ensure that a homeowners association cannot change the open space designation with such restrictions being in the form of deed restrictions.

21. Town's legal counsel must review and approve legal sufficiency of Home Owners Association Declaration on obligations with regard to

maintenance of rain gardens and filter strips. Rain gardens for roof drains and grass filter strip consisting of wild, native grasses shall be installed in development envelope on all lots as shown on plan dated July 26, 2005. Requirement to maintain said strips shall be incorporated in rain garden deed restrictions. If gutters are not installed on the house, an alternative stone filter system shall be provided to dissipate run off from the roof.

22. Straw bales not hay bales shall be used for erosion controls.

23. Clearing limits of each lot will not exceed the percentage of clearing limits designated on the maps dated July 26, 2005 and sheets number 3, 4 and 12 revised to 10/21/05.

24. Temporary sediment basins for road construction are not to be placed in an area which will have a negative impact on proposed leach fields.

25. The final road construction plans must be provided to Wetlands Agent and Commission. Permittee shall comply with items 'a' to 'f' below:

a. The permittee shall submit and obtain certification from the State of Connecticut Department of Environmental Protection for the "discharge of storm water from construction activities" prior to the commencement of any construction activity.

b. Maintenance of the grass filter strips and rain gardens shall be an obligation of the lot owners pursuant to the obligations set forth in the Declaration of Home Owners Association to be reviewed and approved by the Town of Winchester. Said document to be filed in

Town of Winchester Land Records concurrently with the filing of the subdivision map of Trade Winds Farm.

c. A bond, in a form acceptable to the Wetlands Agent for the Town of Winchester for the plantings in the emergent marsh and grassed swales shall be posted in the amount of $5,000 for two full growing seasons to ensure that the plants have become established. This bond shall be provided at the same time as the bond for the construction of the road is posted with the Town of Winchester.

d. Siltation fence barrier shall be properly installed and inspected by a representative of the Town of Winchester prior to the initiation of any construction activity. A bond for erosion/sedimentation controls for each lot shall be posted at the time a building permit is requested for a lot. The bond, in a form acceptable to the Town Counsel for the Town of Winchester shall be in the amount of $1,000. It shall be released when all disturbed areas are graded and stabilized with vegetation.

e. Site specific plans for each lot at the time of permitting shall be provided to the wetland staff for administrative approval. These plans shall show the location of the dwelling, driveway, well, on-site sewage disposal system, rain gardens, grass filter strip and clearing limits and any other site plan items requested by the Inland Wetlands Agent.

f. A homeowners association for the twenty-six lots shall be established in a form noted in the draft provided to the IWC, which shall allow for independent enforcement by the Town of Winchester, satisfactory to the Town Counsel for the Town of Winchester as derived from the draft declaration Document provided to the IWC during the permitting process. The Declaration of Homeowner Association shall be filed on the Town of Winchester Land Records concurrently with the subdivision map for Trade Winds Farm. The homeowners association shall be amended to include a recommendation that septic tanks are pumped out every two years.

27. Permittee shall perform water testing at its expense as specified in the Water Sampling Protocol shown below:

**Water Testing Protocol**: Chain of custody sheets shall be completed for each water sample taken. Copies of the custody sheets and all water test results shall be provided to the Office of the Inland Wetlands Agent for the Town of Winchester, the Chairperson of the Inland Wetlands Commission, and the Homeowner's Association for Trade Winds Farm. A bond, in a form acceptable to the Town Counsel for the Town of Winchester shall be provided by the permittee to ensure that the water testing is completed.

Sean Hayden of the Northwest Conservation District, or his successor, shall obtain all water samples, deliver samples to appropriate, independent testing lab and

report results to parties noted above. If testing results exceed acceptable threshold levels then that shall be cause for Inland Wetland Watercourses Commission intervention for corrective action to be taken.

**Water tests to be performed on each sample**:

1. Nitrate as N, A-C
2. Nitrite as N, A-C
3. Total Kjeldahl Nitrogen as N, A-C
4. Phosphorous-O as P, A-C
5. Phosphorous-T as P, A
6. Ph, A
7. Total Suspended Solids,
8. Metals (Zinc and Nickel),
9. Ammonium,
10. Iron

**Water Sample locations**:

All sample locations will be marked in the field with ½" R-bar, painted orange to ensure that all samples are taken at same location in the field.

a) At end of culvert under Platt Hill Road in northwest corner of site,

b) At a point in the eastern intermittent stream below the discharge point of the emergent marsh and above the confluence of the two streams,

c) At a point in the single western stream, just above the southern property line,

d) At a point in the stream, located in the northeast portion of the site at or near the C.L.P. power intersection, outside of the cleared C L & P right of way and before the stream goes under Dayton Road,

e) At a point in the stream along the eastern property line above the north limit of the Red Maple Swamp,

f) At a point on the west slope just outside the limits of the Red Maple Swamp at a groundwater sample location to be installed by the design engineer. (This sample location may not always have water in it). If no water is present in this location, it shall be noted on the custody sheet that no sample was taken on that date.

g) Hillside seep to the east of Lot 11. (This sample location may not always have water in it). If no water is present in this location, it shall be noted on the custody sheet that no sample was taken on that date.

The test for metals will only be performed on samples taken at locations "a", "b", "c", and "d" as stated above.

**Timing of Samples**:

Sampling shall occur in on or about April 15th, July 15th, and September 15th each year for a period of seven (7) years. The initial round of testing shall be done immediately prior to the commencement of road construction activity. Testing shall be done annually for a period of seven (7) years from the month of the initial round of testing. Once the emergent marsh, grassed basins/swales and Vortechnic Unit/grassed level spreader are receiving runoff from the road,

sampling should be done within 6 – 12 hours after a storm event producing 0.5" of rain or more, if possible.

28. Permittee will file a Declaration for Trade Winds Farm Homeowners Association on the land records in conformance with the Declaration Document provided to the IWC on July 27, 2005, as that document may be amended to be in accord with the decision of the P&Z, any requirements of the Town's legal counsel as to legal sufficiency and including the following provisions:

a. The Home Owners Association will hire a qualified entity to maintain the common elements and will retain the services of a Connecticut Licensed Applicator to be responsible for the application of any lawn fertilizers or pesticides within the subdivision.

b. The lawn maintenance entity shall report to and register with, the Wetlands Office on July 1 of each year.

c. Buffers comprising the grassed meadow strips and swales to be mowed at points in time that DEP designates as optimal to protect birds and animals.

29. The board of the homeowners association will include an ex-officio member from either the Board of Directors of the Northwest Conservation District or a member of the Heritage Land Preservation Trust of Torrington, at the invitation of the permittee or HOA, to advise on best protection of open space. This person will receive copies of any water tests and any annual reports. The

name of the individual and board affiliation shall be provided to the Chairperson of the IWC annually on July 1st.

30. Permittee shall comply with the following comments of Ronald Wolff, P.E. in his letter of September 14, 2005:

a. A detail of the "meadow filter strip" with hay roll will be added to the construction plans,

b. A detail of the 'smart manhole' will be added to the construction plans along with an appropriate maintenance schedule,

c. A detail for the vernal pool signage will be added to the construction plans,

d. A detail for the 'hoods' in the catch basins with 4' deep sumps will be added to the construction plans,

e. Those catch basins with 4' deep sumps will be called out on the construction plans,

f. The location for all Gravel filter berms will be called out on the construction plans,

g. The detail for the Gravel Filter Berm will be revised to show the depth to be embedded into the existing ground,

h. Construction start dates in the Erosion Narrative will be adjusted as necessary after all Town of Winchester Land Use Approvals have been obtained,

i. The timing for the installation of catch basin inserts will be added to the Erosion Control Narrative,

j. The Construction plan will be revised to reflect the appropriate method for the protection of catch basin inlets during the construction period,

k. The detail for the Type "D-G" Endwall will be added to the plans,

l. The timing for the installation of 'rain gardens' and 'meadow filter strip' will be added to the "Construction Sequence for Individual Lots".

31. Final Construction plans shall be submitted at least 30 days in advance of the expected start of construction.

32. Construction shall be done in phases shown. Construction on the next phase of the project shall not begin without prior approval of the Inland Wetland Agent and a Commissioner following a report from the Wetlands Agent that the earlier phase is completed and stabilized to their satisfaction. The extent of each phase shall not be modified or exceeded without prior permission of the Inland Wetland Watercourses Commission.

Once construction begins, Contractor, Inland Wetlands Agent, Site Monitor and the owners shall meet weekly to review development.

33. All outside consultant fees be paid in full within 45 days of approval.