

MORIARTY, PAETZOLD & SHERWOOD

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January 6, 2021

Ronald Baia  
Zoning and Wetlands Enforcement Officer  
City of Middletown  
245 DeKoven Drive  
Middletown, CT 06457

Reference: Middletown Inland Wetlands and Watercourses Agency, January 6, 2021  
Agenda, Item E, Agency Review, Discussion on the wetlands violation at  
Founder's Ridge on Ridgewood Road and offsite impacts on 97 Poplar  
Road. Applicant/ agent Ted Bysiewicz / Homes in Westfield, LLC

Dear Mr. Baia:

This office represents David and Phyllis DeMerchant, owners of 97 Poplar Road in Middletown. An inland wetlands and watercourse on Mr. and Mrs. DeMerchants' property has been adversely impacted by construction activity at Founders Ridge.

I am attaching a series of slides and documents that we ask be made part of the record as the Agency considers the referenced agenda item this evening. I will be attending the meeting together with Dan DeMerchant, the owners' son, and Christopher Allan, a wetlands scientist engaged by the DeMerchants to analyze the impact of the Founders Ridge development on the regulated areas on their property. Please consider this a request on our behalf to address the Agency on this agenda item.

Please also consider this letter to be a standing request for copies of any and all documents, submissions and communications, including those transmitted by electronic mail, relating to Founders Ridge.

This request is being made pursuant to the Connecticut Freedom of Information Act, General Statutes Section 1-200 et seq. If you decide not to provide any document falling within the scope of this request, please identify the document by author, recipient(s) and date, and indicate your basis for withholding the document. If there is a

charge for the copies, please contact me and I will send you a check for the required amount prior to picking up the copies.

Please also place my name on the public registry you are required to establish pursuant to General Statutes § 8-7d (g) and provide me with notice of any and all scheduled workshops, discussion groups, staff meetings, commission meetings, and public hearings on any matters relating to Founders Ridge.

Thank you for your consideration of this request.

Very truly yours,

MORIARTY, PAETZOLD & SHERWOOD



David F. Sherwood

/mds

cc: Mr. and Mrs. David C. DeMerchant  
Joseph Samolis, Director

EROSION AND SEDIMENT CONTROL PLAN:

RESPONSIBLE PARTY:

Thaddeus P. Bysiewicz

ACCESS ROADWAY, PARKING & UTILITY CONSTRUCTION SEQUENCE:

1. Field stake proposed clearing limits and the roadway centerlines. Staking shall be done by a licensed surveyor.
2. Contact CALL BEFORE YOU DIG at 1-800-922-4455 prior to the start of any excavation work on the site.
3. Hold a preconstruction meeting prior the start of work. Those present shall include the Town Engineer/Planner, property owner and general contractor/developer.
4. Install a stabilized construction entrance where vehicles will be entering/exiting the site. The construction entrances shall, be maintained throughout site construction to prevent tracking of sediment onto existing parking areas, driveways and public streets.
5. Cut any trees required for construction.
6. Install perimeter erosion and sediment controls (silt fence and/or staked haybales).
7. Excavate the detention basins for use as temporary sediment basins during construction. The underdrain systems shall not be installed at this time. Install additional sediment basins and/or sediment traps as necessary.
8. Grub stumps as necessary for roadway, drainage, utility and building construction. Stumps shall be temporarily stockpiled in an upland area or removed from the site. No burying of stumps shall be permitted.
9. Strip topsoil and stockpile on site for reuse. Stockpiles shall be protected with a perimeter erosion control system. A vegetative cover may be required if stockpiles will remain for extended periods.
10. Cut and fill the site to establish the required subgrade elevations. Large cut and fill slopes should be permanently stabilized with topsoil, seed, mulch and erosion control blankets and/or turf reinforcing mats as soon as practical.
11. Install the proposed drainage system beginning at detention basins and proceeding in an upstream direction. All catch basin inlets shall be protected with Silt—Sack or equivalent measures until the site has been permanently stabilized with vegetation.
12. Concurrently with the drainage system installation, install the sanitary sewer system, water main extension and underground electric, phone and cable utilities. Sanitary lateral stubs and water service curb stops shall be installed for each housing unit.
13. Install geotextile, bank run gravel subbase and processed gravel base for the entry driveway and parking areas.
14. Place topsoil and grade all side slopes and shoulders to within 2' of the proposed pavement edge. Building pad areas which will not be immediately developed should be stabilized with topsoil and a vegetative cover.
15. Install bituminous concrete binder course and curbing.

16. Place topsoil in remaining disturbed areas and seed and mulch all disturbed areas. Install temporary erosion control blankets or permanent turf reinforcing mats as called for on site plans.
17. Install the final course of bituminous concrete pavement.
18. Following permanent stabilization of disturbed areas, the detention basins shall be cleaned of all accumulated sediment and brought to proposed design grades. The underdrain systems should be installed at this time and the basin bottom and slopes should be planted with the required seed mix. Temporary erosion control blankets shall be used to protect the basin during vegetation establishment.
19. The drainage system shall be cleaned of excessive sediment. Sediment shall be disposed of in upland areas. Temporary erosion and sediment controls shall be removed and properly disposed of when no longer required.

#### DEVELOPMENT CONTROL PLAN (INDIVIDUAL UNITS):

1. Development of the site will be performed by the project owner, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water and if necessary, the application of calcium chloride.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site, final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

#### SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.

6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
  - the fence has been overtopped, undercut or bypassed by runoff water,
  - the fence has been moved out of position (knocked over), or
  - the geotextile has decomposed or been damaged.

#### TEMPORARY VEGETATIVE COVER:

##### SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in figure TS—2 in the 2002 Guidelines.

##### TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

##### SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

##### SEEDBED PREPARATION

Loosen the soil to a depth of 3—4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or with a section of chain link fence over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical. Fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10—10—10 or equivalent. Additionally, lime may be applied using rates given in figure TS—I in the 2002 Guidelines.

## SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by when hydroseeding.

## MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide coverage.

## MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately vegetative cover).

## PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, retille compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 — October 1.
6. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

97 Poplar Road

Pond prior to Founders Ridge Development





2016 Aerial

10m  
40ft

POWERED BY  
esri

4.11.2020



10.13.2020



12.5.2020





12.8.2020



12.8.2020





12.24.2020



12.25.2020





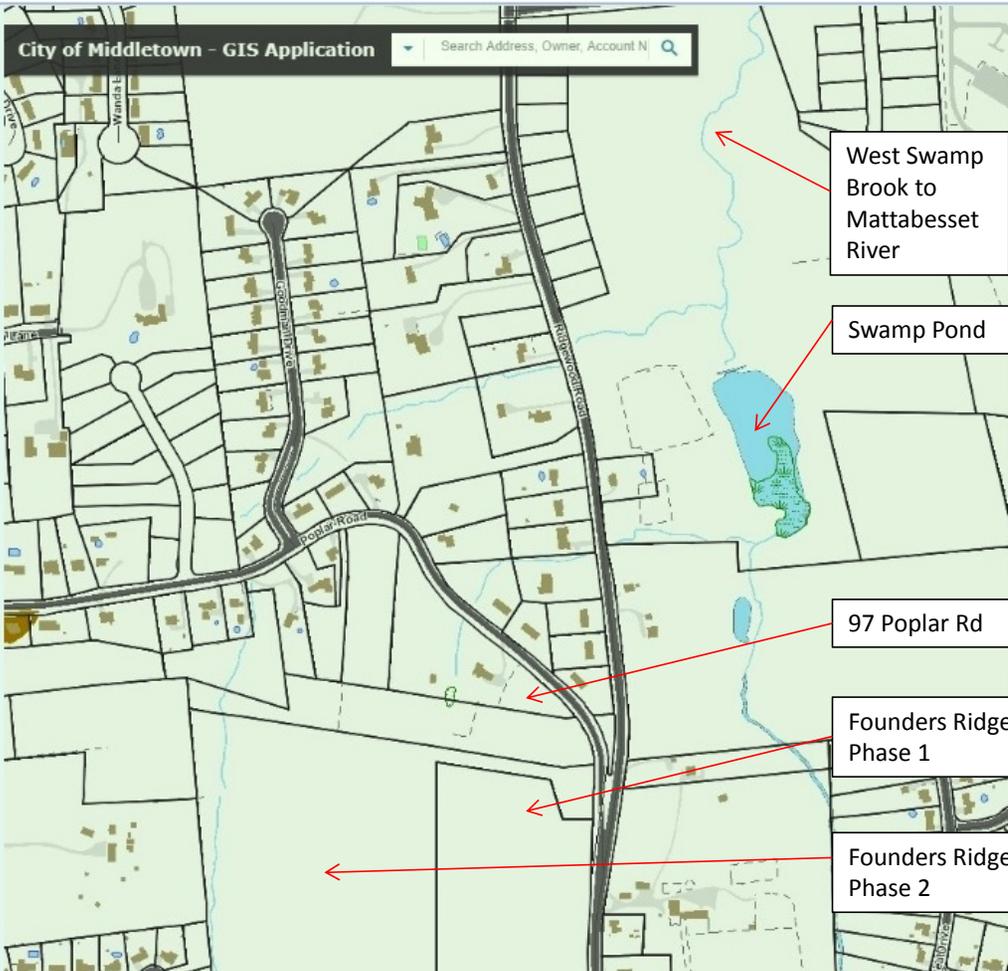
12.24.2020



12.26.2020



12.26.2020



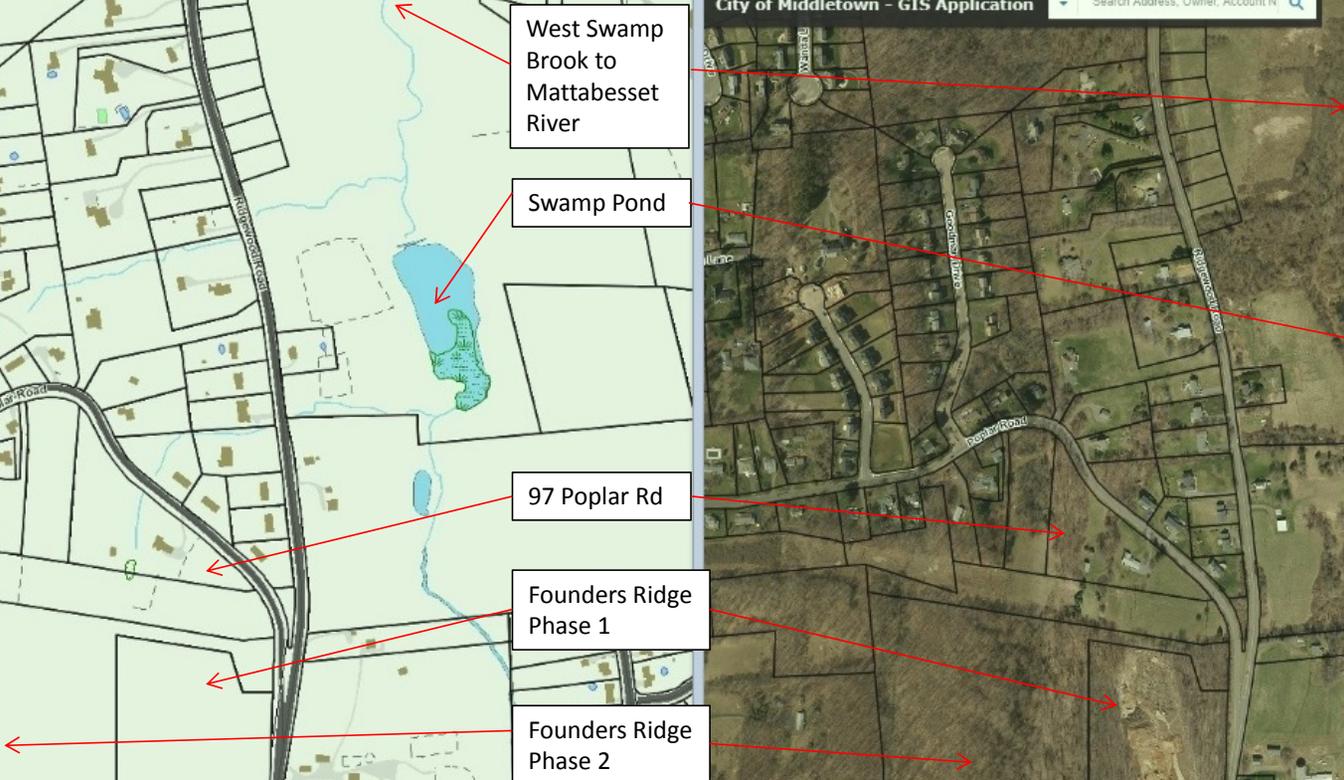
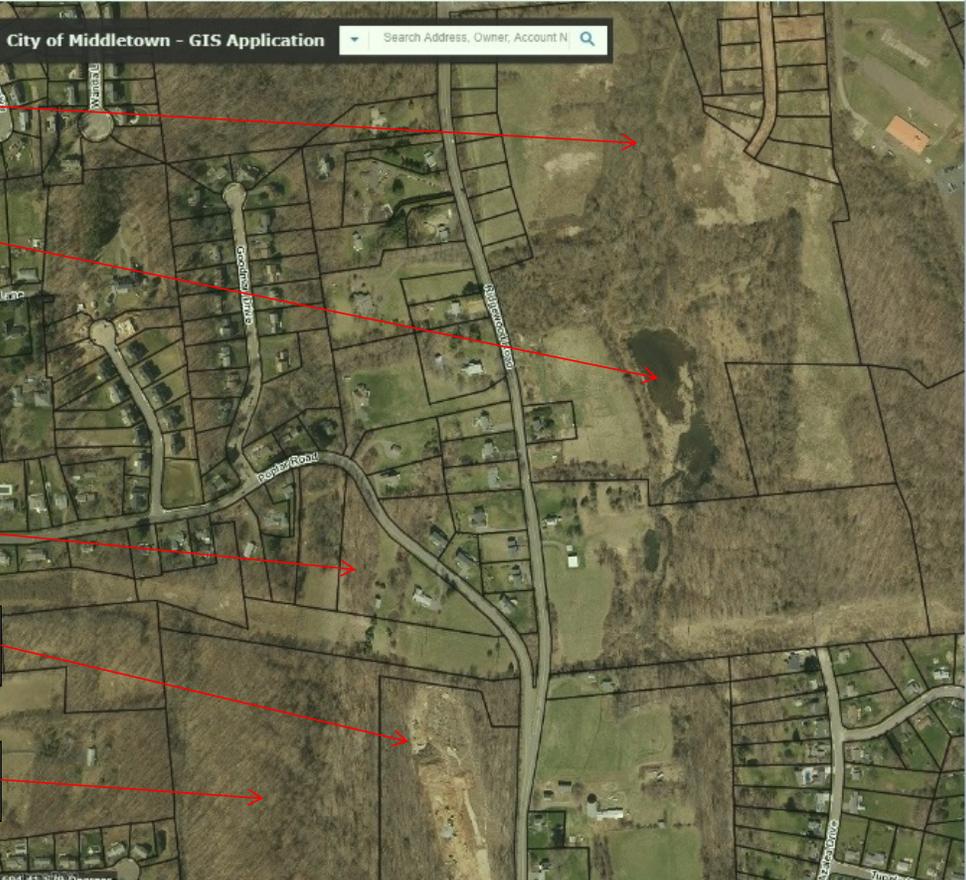
West Swamp Brook to Mattabeset River

Swamp Pond

97 Poplar Rd

Founders Ridge Phase 1

Founders Ridge Phase 2



# CURRICULUM VITAE

Christopher P. Allan  
Senior Associate

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## EXPERTISE

Environmental Site Assessments  
Upland and Wetland Habitat Evaluations  
Environmental Impact Assessments  
Pond, Stream and Wetland Evaluations  
Wetland Creation and Restoration Projects  
Wetland Delineation  
Wetland Functional Assessment  
Stormwater Quality Evaluation/Treatment Design  
Sedimentation and Erosion Control Planning  
Land-Use Evaluations and Design  
Site Plan and Sewage Disposal System Design.

## EDUCATION

Yale School of Forestry and Environmental Studies,  
New Haven, CT  
Major: Environmental Studies (Program: Land Use)  
Degree: M.E.S. (1982)

University of Bridgeport, Bridgeport, CT  
Major: Biology (Program: Environmental Studies)  
Degree: B.A. (1979)

## LICENSES/PROFESSIONAL CERTIFICATIONS

Certified Soil Scientist  
Professional Wetland Scientist #266  
Certified Professional in Soil Erosion and Sediment  
Control #355  
Registered Sanitarian, Connecticut #317  
U.S. Fish and Wildlife Service, Habitat Evaluation  
Procedures

## PROFESSIONAL AFFILIATIONS

The Society of Soil Scientists of Southern New  
England  
Soil Science Society of America  
Society of Wetland Scientists  
Connecticut Association of Wetland Scientists  
(Membership Committee Chairman)  
Soil Conservation Society of America  
International Erosion Control Association  
New England Soil and Water Conservation Society

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## RELATED EXPERIENCE

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- ❖ Principal investigator for numerous **wetland delineations, natural resource inventories and environmental impact assessments for development projects** throughout Connecticut.
- ❖ Principal investigator for the **preparation of erosion and sediment control plans** for numerous site developments throughout Connecticut.
- ❖ Principal investigator for numerous **reviews of proposed site development plans** for various town and city land use agencies throughout Connecticut. Site development plans are reviewed for compliance with regulations, environmental impacts, and erosion and sediment control practices.
- ❖ Project manager and principal investigator for **seasonal monitoring of Lake Terramuggus**, an 85 acre impoundment located in Marlborough, Connecticut. The lake is evaluated annually from May to September. Monitoring parameters include water chemistry, temperature, dissolved oxygen, clarity, bacteria levels, phytoplankton communities, and chlorophyll-a concentrations.
- ❖ Principal investigator for the preparation of **natural resource inventories and environmental impact statements for cellular tower sites** throughout Litchfield County. These services were provided for AT&T Wireless and Litchfield County Cellular.
- ❖ Project manager and principal investigator for the preparation of a **natural resource inventory and environmental impact assessment of a proposed water diversion** at the Bradley Hubbard Reservoir in Meriden, Connecticut. The project involved an evaluation of existing shoreline vegetation and downstream fisheries resources associated with a public water supply reservoir and an evaluation of potential impacts on these resources.
- ❖ Project manager and principal investigator for **annual assessments of benthic**

- macroinvertebrate communities** in Sodom Brook located in Meriden Connecticut. The project involves annual sampling of benthic macroinvertebrates, an on-site evaluation of stream characteristics, and assessment of stream quality using the U.S. E.P.A. Rapid Bioassessment Protocol II. The bioassessment data is used to evaluate potential drawdown effects from two public water supply wells located near Sodom Brook.
- ❖ Principal investigator for preparation of an **Environmental Impact Statement and Connecticut Environmental Policy Act (CEPA) Finding of No Significant Impact (FONSI)** associated with the proposed expansion of Northwestern Connecticut Community College in Winsted, Connecticut.
  - ❖ Principal investigator for a **natural resource evaluation and impact assessment of a proposed golf course** on 138 acres in Bethany, Connecticut.
  - ❖ Project manager and principal investigator for **evaluating stream and riparian habitat and an assessment of impacts** associated with flood control modifications on Harbor Brook in Meriden, Connecticut. The project involved an evaluation of stream characteristics and overall habitat suitability for macro-invertebrates, fish, and other wildlife. Impacts associated with channel deepening and straightening, and the creation of floodway channels were assessed.
  - ❖ Principal investigator for the **evaluation of benthic macroinvertebrate communities and overall stream quality** for a portion of the Oxoboxo River in Montville, Connecticut. The assessment was conducted to supplement a water diversion permit application for the Rand-Whitney Container Board Company. U.S. E.P.A. Rapid Bioassessment Protocol II was used to evaluate benthic communities and stream health. Annual sampling is currently being conducted to assess potential impacts from the permitted diversion.
  - ❖ Project manager and principal investigator for the **design of a 1.4 acre wetland** to compensate for impacts on an existing wetlands from building expansion at the international headquarters of Lego Systems, Inc. in Enfield, Connecticut. The project involved an evaluation of existing wetlands, selection of a suitable compensation site, design of the compensation wetland, construction monitoring, and annual post-construction inspections.
  - ❖ Project manager and principal investigator for the **design of a stormwater filtration wetland** for the international corporate campus of Lego Systems, Inc. in Enfield, Connecticut. The design incorporated a three stage wetland filtration system (wet meadow, shallow marsh, and shallow open water) for enhanced filtration of stormwater.
  - ❖ Principal investigator for a **stream and riparian habitat restoration** at Rocky Hill Veterans Cemetery in Connecticut. The restoration design included the use of geotechnical fabrics and vegetation for soil stabilization and the creation of a vegetated buffer strip to treat runoff from upslope managed turf grass.
  - ❖ Project manager and principal investigator for the design of a **stream and wetland habitat restoration** in Canaan, Connecticut. The project involved the recreation of watercourse and wetland habitat over mine spoils that were placed in wetlands. The design involved regrading of mine spoils and the creation and stabilization of over 600 feet of streambed and the creation of over 1 acre of compensation wetlands.
  - ❖ Project manager and principal investigator for the **delineation of federal jurisdictional wetlands and wetland soil characterization** at Silver Sands State Park in Milford, Connecticut. The delineation was part of an overall master plan for the development of the State Park.
  - ❖ Principal investigator for the **delineation and evaluation of inland, coastal, and federal jurisdictional wetlands, an assessment of impacts from roadway construction, design of stormwater filtration wetlands, and phragmites management**. These services were performed as part of the proposed extension of Monroe Street through Silver Sands State Park in Milford, Connecticut.
  - ❖ Principal investigator for a **tidal saltwater marsh restoration** at Indian Harbor in Greenwich, Connecticut. Restoration activities included the removal of construction debris and selective grading within the marsh to permit natural colonization of indigenous floral species.
  - ❖ Principal investigator for a **floral and faunal habitat evaluation and impact assessment of a proposed bulky waste landfill on a freshwater tidal marsh** associated with the Mattabasett River in Middletown, Connecticut.

- ❖ Project manager and principal investigator involving the use of the **U.S. Fish and Wildlife Service Habitat Evaluation Procedures (HEP)** to assess impacts from the diversion of Limekiln Brook into a surface mine in Brookfield, Connecticut.
- ❖ Principal investigator for the **evaluation of potential impacts on timber rattlesnakes (*Crotalis horridus*)** from a residential subdivision in Glastonbury, Connecticut. Recommendations were made to reduce human interactions with the State threatened species.
- ❖ Principal investigator for a **benthic macroinvertebrate and fisheries survey** of a portion of the Pomperaug River in Southbury, Connecticut. The project included sampling of benthic macroinvertebrates and use of the U.S. EPA Rapid Bioassessment Protocol II to evaluate stream quality. An electrofishing survey was also conducted to evaluate fish populations. Potential impacts associated with potential drawdown effects caused by withdrawal of water from the Pomperaug aquifer were evaluated.
- ❖ Project manager and principal investigator for the **design of a 16 acre wildlife pond and wetland** adjacent to Macedonia Brook State Park in Kent, Connecticut. The project included delineation of federal jurisdictional wetlands, preparation of the habitat design, and preparation of permit applications for local, state and federal approval.
- ❖ Project manager and principal investigator for the **evaluation of potential impacts on water quality, trout fisheries, and wetland habitats** associated with the Moosup River in Sterling, Connecticut from proposed drawdown effects caused withdrawal of water by the Exeter Energy Project from the associated aquifer.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and an evaluation of wetland habitats** for a proposed shopping center expansion in Glastonbury and East Hartford, Connecticut.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and preparation of an Army Corps of Engineers wetlands permit application** for the construction of a proposed automobile repair maintenance facility and car wash in Southbury, Connecticut.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and an evaluation of wetland habitats and potential impacts** from a proposed funeral home in Monroe, Connecticut.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and an evaluation of wetland habitats and potential impacts** from a proposed assisted living care facility in Monroe, Connecticut.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and an evaluation of wetland habitats and potential impacts** from a proposed cemetery expansion in Roxbury, Connecticut.
- ❖ Principal investigator for the **delineation of federal jurisdictional wetlands and an evaluation of wetland habitats and potential impacts** from a proposed residential development in Milford, Connecticut.
- ❖ Assisted in design and monitoring of **wetland creation projects** associated with replacing wetlands lost as a result of Bradley International Airport expansion for Connecticut Department of Transportation

#### PUBLICATIONS

*The Use of Vegetation for Non-Structural Sediment Control.* Co-Author, Public Works magazine, March 1984, Vol. 115, No. 3.

*The Application of Natural Systems to Protect the Aquatic Environment.* Co-Author, Presented at The Aquatic Environment: Problems and Perspectives, Western Connecticut State University, October 1984.

*Test Salt to Control Phragmites in Salt Marsh Restoration (Connecticut).* Co-Author, Restoration & Management Notes, Vol. II, No. 1, Summer 1984.

*Carrying Capacity of Public Water Supply Watersheds: A Literature Review of Impacts on Water Quality from Residential Development.* Co-Author. Prepared for the Litchfield Hills Council of Elected Officials; published in March, 1990 as DEP Bulletin 11 (ISBN 0-942085-00-0).

*Protecting Connecticut's Water-supply Watersheds: A Guide for Local Officials.* Co-Author. Prepared for the Connecticut Department of Environmental Protection; published by the Connecticut DEP January, 1993.

**EROSION AND SEDIMENT CONTROL PLAN:**

**RESPONSIBLE PARTY:**

Thaddeus P. Bysewicz

**ACCESS, ROADWAY, PARKING & UTILITY CONSTRUCTION SEQUENCE:**

- Field stake proposed clearing limits and the roadway centerlines. Staking shall be done by a licensed surveyor.
- Contact CALL BEFORE YOU DIG at 1-800-922-4455 prior to the start of any excavation work on the site.
- Hold a preconstruction meeting prior to the start of work. Those present shall include the Town Engineer/Planner, property owner and general contractor/developer.
- Install a stabilized construction entrance where vehicles will be entering/exiting the site. The construction entrances shall be maintained throughout site construction to prevent tracking of sediment onto existing parking areas, driveways and public streets.
- Cut any trees required for construction.
- Install perimeter erosion and sediment controls (silt fence and/or stacked haybales).
- Excavate the detention basins for use as temporary sediment basins during construction. The underdrain systems shall not be installed at this time. Install additional sediment basins and/or sediment traps as necessary.
- Grub stumps as necessary for roadway, drainage, utility and building construction. Stumps shall be temporarily stockpiled in an upland area or removed from the site. No burying of stumps shall be permitted.
- Strip topsoil and stockpile on site for reuse. Stockpiles shall be protected with a perimeter erosion control system. A vegetative cover may be required if stockpiles will remain for extended periods.
- Cut and fill the site to establish the required subgrade elevations. Large cut and fill slopes should be permanently stabilized with topsoil, seed, mulch and erosion control blankets and/or turf reinforcing mats as soon as practical.
- Install the proposed drainage system beginning at detention basins and proceeding in an upstream direction. All catch basin inlets shall be protected with Silt-Sock or equivalent measures until the site has been permanently stabilized with vegetation.
- Concurrently with the drainage system installation, install the sanitary sewer system, water main extension and underground electric, phone and cable utilities. Sanitary lateral stubs and water service curb stops shall be installed for each housing unit.
- Install geotextile, bank run gravel subbase and processed gravel base for the entry driveway and parking areas.
- Place topsoil and grade all side slopes and shoulders to within 2' of the proposed pavement edge. Building pad areas which will not be immediately developed should be stabilized with topsoil and a vegetative cover.
- Install bituminous concrete binder course and curbing.
- Place topsoil in remaining disturbed areas and seed and mulch all disturbed areas. Install temporary erosion control blankets or permanent turf reinforcing mats as called for on site plans.
- Install the final course of bituminous concrete pavement.
- Following permanent stabilization of disturbed areas, the detention basins shall be cleaned of all accumulated sediment and brought to proposed design grades. The underdrain systems should be installed at this time and the basin bottom and slopes should be planted with the required mix. Temporary erosion control blankets shall be used to protect the basin during vegetation establishment.
- The drainage system shall be cleaned of excessive sediment. Sediment shall be disposed of in upland areas. Temporary erosion and sediment controls shall be removed and properly disposed of when no longer required.

**DEVELOPMENT CONTROL PLAN (INDIVIDUAL UNITS):**

- Development of the site will be performed by the project owner, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
- The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
- All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2:1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
- Dust control will be accomplished by spraying with water and if necessary, the application of calcium chloride.
- The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
- Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

**SILT FENCE INSTALLATION AND MAINTENANCE:**

- Dig a 6" deep trench on the uphill side of the barrier location.
- Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
- Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
- Inspect and repair barrier after heavy rainfall.
- Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
- Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
- Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
  - the fence has been overtopped, undercut or bypassed by runoff water,
  - the fence has been moved out of position (knocked over), or
  - the geotextile has decomposed or been damaged.

**HAY BALE INSTALLATION AND MAINTENANCE:**

- Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
- Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
- Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
- Remove sediment behind the bales when it reaches half the height of the bales and deposit in an area which is not regulated by the inland wetlands commission.
- Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
  - the barrier has been overtopped, undercut or bypassed by runoff water,
  - the barrier has been moved out of position, or
  - the hay bales have deteriorated or been damaged.

**TEMPORARY VEGETATIVE COVER:**

**SEED SELECTION**

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

**TIMING CONSIDERATIONS**

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

**SITE PREPARATION**

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

**SEEDBED PREPARATION**

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the track marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure IS-1 in the 2002 Guidelines.

**SEEDING**

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

**MULCHING**

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

**MAINTENANCE**

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and fill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

**PERMANENT VEGETATIVE COVER:**

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

- Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
- Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
- Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
- Inspect seedbed before seeding. If traffic has compacted the soil, retil compacted areas.
- Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
- Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

**EROSION AND SEDIMENT CONTROL NARRATIVE:**

**PRINCIPLES OF EROSION AND SEDIMENT CONTROL**

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

**KEEP LAND DISTURBANCE TO A MINIMUM**

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing storm water runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree walls.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

**SLOW THE FLOW**

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences, hay bale check dams and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

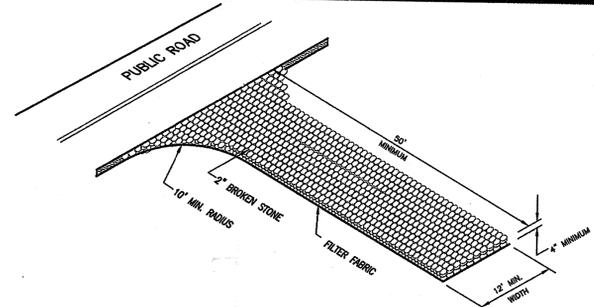
**KEEP CLEAN RUNOFF SEPARATED**

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until adequate filtration of on-site waters has occurred.

**REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS**

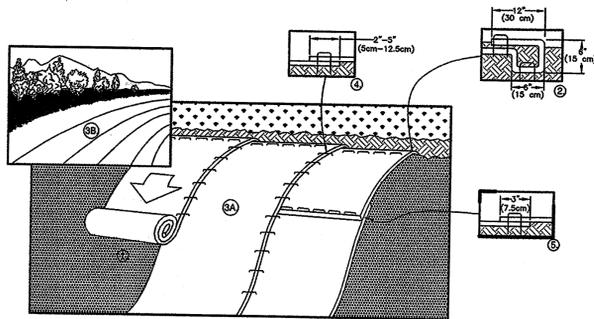
While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.
- Grade and landscape around buildings to divert water away from them.



**CONSTRUCTION ENTRANCE**

NOT TO SCALE



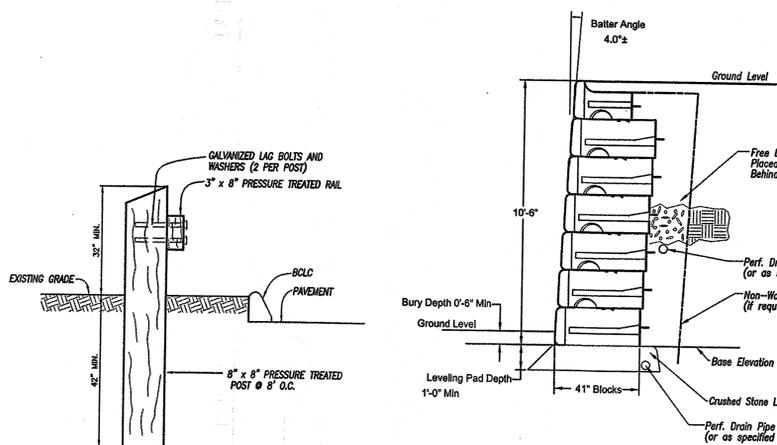
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- BEOW AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2'-6" (6cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET BEING INSTALLED ON TOP EVEN WITH THE COLORED SEAM SWITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

**NOTES:**

- IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
- SEE SITE PLANS AND CONSTRUCTION NOTES FOR EROSION CONTROL BLANKET SPECIFICATIONS.

**EROSION CONTROL BLANKET INSTALLATION**

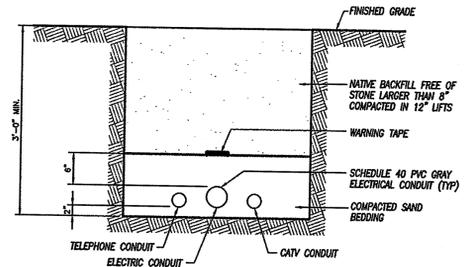
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**SEGMENTAL RETAINING WALL**

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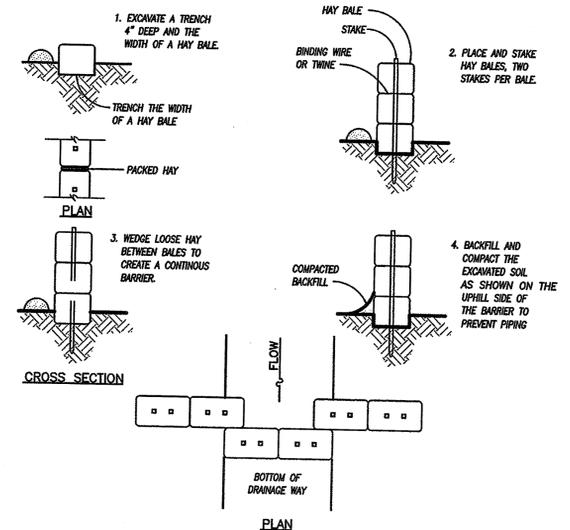
- THE RETAINING WALL SHALL BE CONSTRUCTED OF 41" MODULAR BLOCKS AS MANUFACTURED BY REDI-ROCK OR APPROVED EQUIVALENT.
- THIS PLAN SHOWS DESIGN INTENT ONLY. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS CERTIFIED BY A PROFESSIONAL ENGINEER FOR THE ACTUAL RETAINING WALL SYSTEM USED.



NOTE: CONTRACTOR SHALL PROVIDE SILT/CLAY DAMS AT 100' INTERVALS ALONG PROPOSED UTILITY TRENCH TO AVOID TRANSPORTING INTERCEPTED WATER.

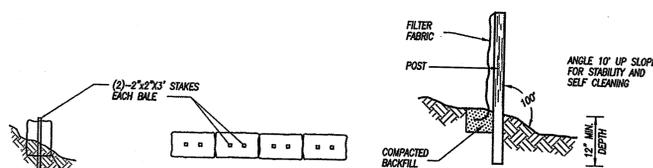
**UNDERGROUND UTILITY TRENCH**

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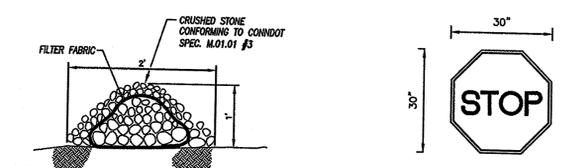
**HAYBALE CHECK DAM**

NOT TO SCALE



**HAYBALE BARRIER**

NOT TO SCALE

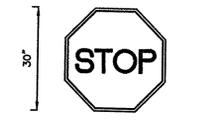


**STONE CHECK DAM**

NOT TO SCALE

**SILT FENCE**

NOT TO SCALE



**STOP SIGN DETAIL**

NOT TO SCALE

REVISIONS		DATE:
DATE	DESCRIPTION	
8/16/2017	CITY COMMENTS	7/6/2017
		SCALE:
		AS SHOWN
		DWG. NO.:
		14 OF 19

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 info@provostanddovico.com  
 www.provostanddovico.com

**SEAL**  
 THE ORIGINAL SEAL OF THE REGISTERED PROFESSIONAL ENGINEER HERE FOR THIS MAP TO BE VALID  
 DAVID S. HEDL, P.E. No. 24867

**DETAIL SHEET No. 1**  
**FOUNDER'S RIDGE - PHASE 2**  
 PREPARED FOR  
**THADDEUS P. BYSEWICZ**  
 RIDGEWOOD ROAD, MIDDLETOWN, CONNECTICUT

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