

NOTE: This SWPPP was prepared in accordance with SPDES General Permit #GP-02-01 and/or its replacement, SPDES General Permit #GP-008-01. This SWPPP must be kept on the job site and available for use of contractors & sub-contractors. Certifications by Owner/Developer and by the Contractor are included. Copy of Notice of Intent (NOI) which must be filed at least 5 days prior to the commencement of any work is included. Notice of Termination (NOT) must be filed when all storm water quantity and quality controls are in place and the site has been stabilized with specified vegetation. Sample Inspection Forms are included. Maintenance Plan is attached and includes both temporary and permanent facilities maintenance. This SWPPP, together with all required plans, completed inspection forms and a log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by regulatory authorities.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
&
STORM WATER MANAGEMENT REPORT (SWMR)**

**COLONIE COUNTRY CLUB ESTATES
TOWN OF NEW SCOTLAND
ALBANY COUNTY
NEW YORK**

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INTRODUCTION:

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by Amedore Homes, Inc., applicant for the proposed ***Colonie Country Club Estates***, as consultants on site planning and design. The applicant for approval of this project is Amedore Homes, Inc. having its office at 1900 Western Avenue, Albany, NY 12203 and a local phone number of (518) 456-1010.

This Storm Water Pollution Protection Plan (hereinafter "SWPPP") was prepared in accordance with SPDES General Permit #GP-02-01 and is intended to comply with that General Permit and/or its replacement, SPDES General Permit #GP-008-01. This Storm Water Management Report (hereinafter "SWMR") conforms with the requirements of the Town of New Scotland Code on the Subdivision of Land, §164-41, Stormwater Management Plan. The applicant proposes to convey to the Town of New Scotland the drainage system and pollution prevention system upon completion.

Certifications by Owner/Developer and by the Contractor are included in this document. A copy of Notice of Intent (NOI), which must be filed at least 5 days prior to the commencement of any work, is included. A blank Notice of Termination (NOT) is included. The NOT must be filed when all storm water quantity and quality controls are in place and the site has been stabilized with specified vegetation. Sample Inspection Forms are included. This SWPPP, together with all required plans, completed inspection forms and a log of activities including any mitigation of items noted on inspection forms are designed to be kept on the job site and available for inspection by regulatory authorities. Also included is a Maintenance Manual for the maintenance of the permanently installed system to conform with this SWPPP and SWMR.

STORMWATER MANAGEMENT OBJECTIVES

The objectives of this SWPPP and SWMR are to define the design, construction sequencing, temporary sedimentation/erosion control, permanent pollution prevention facility and permanent storm water detention system. The majority of this area is tributary to groundwater. A portion is tributary to the Vloman Kill either by runoff from slopes near the southern end of the proposed Road "A". Additional portions adjoining the access road to Colonie Country Club from Route 85A are tributary to ponds on Colonie Country Club which form the headwaters of the Vloman Kill. Once implemented this SWPPP and storm detention system will reduce the pollution contained in the storm water runoff from the site and will prevent damage to downstream properties through detention of the 100 year design storm. The discharge peak rate of runoff is reduced for all storms with a frequency of less than 100 years.



DESCRIPTION OF EXISTING SITE:

PARCEL AREA

The site is currently vacant. The site is located on 141 Maple Road (Route 85A) in the Town of New Scotland across from Douglas Lane. A portion was occupied by a former gravel bank which has become forested with secondary growth of trees, saplings and shrubs. The balance of the site is forested with a stand of primarily hardwoods with a few coniferous trees. The site has frontage on Route 85A at two points. The site consists of 48.17 acres (portion of Tax Map No. 73.0-4-27, lands N/F of Colonie Country Club, Inc.) The site is bounded by Colonie Country Club to the east by agricultural use to south and residential use to the west and to the north. This parcel includes the entrance roadway to Colonie Country Club. A Site Location Map superimposed over the Voorheesville, N.Y. Quadrangle Map is included as Appendix 1.

WATERCOURSES AND WETLANDS

There are no protected watercourse areas or wetlands which impact the site.

FLOOD PLAIN

The site to be developed lies entirely within Zone C (Area of Minimal Flooding).

EXISTING USAGE AND VEGETATION

The site is unimproved and consists mainly of secondary deciduous forest and brush lands. The overstory includes oaks, maples, birch and poplar with sizes from 8" to 18". The understory includes saplings of the same species. A number of areas contain smaller diameter trees and ground cover vegetation.

EXISTING SOILS

The existing soils are deep glacial clays over glacial till. The Albany County Soil Survey indicates the following soils within the limits of the project:

Chenango gravelly silt loam (Hydrologic Class A)

Riverbed fine sandy loam (Hydrologic Class B)

Gravel quarry



EXISTING DRAINAGE

Existing drainage from the bulk of the site to be developed is tributary to the abandoned gravel mine or other local catchment areas where the stormwater discharges to the ground water. A portion of the existing site discharges to a ravine on the southerly end of the Colonie Country Club site. This drainage runs in an unnamed tributary of the Vloman Kill which runs parallel to Youmans Road to a point where it joins the Vloman Kill just north of New Scotland Road. An additional portion including the existing access driveway to Colonie Country Club, a portion of the Colonie Country Club lands and lands of GOMAC, LLC which adjoins the Colonie Country Club is tributary to an unnamed drainage course which is in turn tributary to the pond system on the Lands of Colonie Country Club which forms the headwaters of the Vloman Kill.

Existing Tributary Area A1 – The area of this existing tributary area is 30.51 acres. It is a wooded area with an abandoned gravel mine. The soils are a mixture of *Chenango gravelly silt loam and Gravel quarry*. The Hydrologic Soil Group for these soils is A.¹

Existing Tributary Area B1 – The area of this existing tributary area is 11.04 acres. It is partially paved with an access driveway to Colonie Country Club. The soils are primarily *Riverbed fine sandy loam*. The Hydrologic Soil Group for these soils is B.²

Existing Tributary Area B2 – The area of this existing tributary area is 1.90 acres. It is partially paved. The soils are primarily *Riverbed fine sandy loam*. The Hydrologic Soil Group for these soils is B.³

DESCRIPTION OF PROPOSED DEVELOPMENT:

The Applicant proposes the following:

- Install a new town road (Road A) from New Salem to a cul-de-sac at the end of this road. Road approximately 2,800 feet long.

¹ **Urban Hydrology for Small Watersheds – Technical Release 55**, United States Department of Agriculture, Soil Conservation Service, June, 1986 Page A-19

² **Ibid.**, Page A-19

³ **Ibid.**, Page A-19



- Install a new town road (Road B) from Route 85A Across from Douglas Lane to an intersection with Road A. Road approximately 2,531 feet long.
- Develop the land into +/-35 lots plus two areas to be dedicated as a Storm Water Management Area.
- Install a new public water main to serve these dwellings requiring approximately 5,460 lineal feet of new 8-inch water main and dedicate this to the Town of New Scotland once completed, inspected and accepted.
- Install a new public storm sewer system to serve these dwellings. This will consist of new collection storm sewer with catch basins and structures and Stormwater pollution Prevention (SWPP). This will be dedicated to the Town of New Scotland once completed, inspected and accepted.

Two areas have been set aside for Storm Water Pollution Prevention and Storm Water Management Systems. The Applicant will construct two storm water management systems in compliance with SPDES #GP-02-01 and/or its replacement, SPDES General Permit #GP-008-01 and in compliance with requirements of Town of New Scotland.

STORM WATER METHODOLOGY

Storm water runoff volumes (pre & post), peak rate of discharge (pre & post) and storage volumes required were computed and are contained in Appendix #3. In order to model the proposed developed areas, HydroCAD model was constructed indicating that the entire Developed Tributary Area 1 is collected into a drainage system which is tributary to a recharge area. No discharge occurs up to an including a 100 year frequency storm Storm drainage from the Developed Tributary Area 2A is collected into a drainage system and conveyed to a treatment area which includes a sedimentation basin, a surface sand filter and an overflow basin. Developed Tributary Area 2B is entirely lawn area and is tributary to the fairway the same discharge course that Developed Tributary Area 2A discharges to.

Developed Tributary Area 1 – The area of the developed tributary area 1 is 30.51 acres. It is a mixture of paved areas, roofs, lawns and unpaved natural areas. This area is treated and contained in a stilling basin and a recharge basin. There is no outfall from this site.

Developed Tributary Area 2A – The area of the developed tributary area 1 is 9.99 acres. It is a mixture of paved areas, roofs, lawns and



unpaved natural areas. This area is treated utilizing a surface sand filter and a overflow basin to detain flows to pre-development level.

Developed Tributary Area 2B – The area of the developed tributary area 1 is 3.11 acres. It is all unpaved areas which are sideslopes which is tributary to the fairway drainage course on which these lots front.

The Storm Water Management calculations of Pre & Post Developments for a 1, 2, 5, 10, 25, 50 and 100 year storm events are shown in Appendix #4. The pre-existing discharges for Existing Tributary Area B1 and B2 are compared to the compared to the post developed discharge at time of peak flow from Developed Tributary Area 1 and 2A and the flow from for lawn areas of Developed Tributary Area 2B. The outflow from Tributary are No. 1 is 0.00 CFS at all storms because ground water recharge is the treatment method. See Table No. 1 for this information.

Storm Frequency	Pre – Developed Flow from Tributary Area A1	Post Developed Flow Generated from Tributary Area 1	Post Developed Outflow From Tributary Area 1
1	0.00	0.27	0.00
2	0.00	1.16	0.00
5	0.00	7.75	0.00
10	0.00	15.41	0.00
25	0.00	23.26	0.00
50	0.00	36.75	0.00
100	0.00	39.97	0.00

Table No. 1

Post Development Flow Generated from Tributary Area 1 compared to Post Developed Outfall from Tributary Area 1

Table No. 2 compares the pre-existing flows to the drainage course which traverses the fairway east of lots 32-35 to outflow from Treatment System No. 2 combined with the flow coming from the rear upaved sideslopes. This is to demonstrate that the disturbed areas flows are subjected to extended detention by limiting the outflow to less than unit peak discharge (q_u) for the 1 year/24 hour storm. The flow from the area which is not disturbed (Tributary Area 2B) is allowed to discharge directly to the existing culvert and the figures are shown below. Also these two tributary areas are combined to display that adequate detention is provided by the system. This is appropriate since the discharge from the developed areas is directed through the same drainage course as was the existing tributary areas.



Storm Frequency	Pre – Developed Flow from Tributary Area B1	Pre- Developed Flow from Tributary Area B2	Pre- Developed Flow from Tributary Areas B1 & B2**	Post Developed Outflow From Tributary Area 2A	Post Developed Outflow from Tributary Area 2B	Post Developed Outflow from Tributary Areas 2A & 2B **
1	0.10	0.42	0.15	0.06	0.09	0.15
2	0.49	0.92	0.57	0.12	0.41	0.45
5	3.81	2.51	3.59	2.29	1.94	2.65
10	7.43	3.83	7.15	5.80	3.39	6.43
25	11.13	5.06	11.02	8.25	4.79	9.36
50	17.43	7.02	17.66	11.12	7.09	12.74
100	18.92	7.47	19.25	11.68	7.63	13.40

Table No. 2

Flow from Existing Tributary Areas B1 & B2 compared to Developed Tributary Areas 2A & 2B

** Totals in these columns (totals from Trib. Areas B1 & B2 and Trib. Areas 2A & 2B) differ from the arithmetic sum due to a difference in time of concentration

STORM WATER TREATMENT & DETENTION DESIGN

All drainage from Tributary Area 1 will be collected by catch basins and directed to a Stilling Basin. The stilling basin is sized to accommodate 100% of WQV since the soil infiltration rate is less than 5 minutes per inch.

All drainage from Tributary Area 2A is directed to a diversion structure. This structure will permit a volume equal to 0.76 acre-feet or 507% of the WQv to enter the treatment system. The entry is to the sedimentation basin. The sedimentation basin (pretreatment) which has sufficient capacity to contain approximately 297% of the Water Quality Volume (WQ_v) will connect to another basin (water quality treatment) which will include a surface sand filter and sufficient capacity to contain approximately 215% of the Water Quality Volume (WQ_v). When the flow in the pipe exceeds the rate required to fill the sedimentation basin and surface sand filter basin, additional flow will be directed to the overflow basin which will have sufficient capacity to detain the difference between the quantity stored in the sedimentation basin and treatment basin and the storage required for a minimum of the 100 year storm. The overflow basin outflow will be restricted by a structure which contains openings and weirs sized to control the peak flow to discharge downstream. The discharge from the surface sand filter will bypass the overflow basin and will discharge to the drainage course which traverses the fairway. The sediment basin and filter basin are modeled together as a SWPPP BASIN and the flows from these two basins is limited to 0.06 CFS at the commencement of any storm and increases to 0.13



CFS when the filter basin is full. The balance overflows to the OVERFLOW BASIN.

All drainage from Tributary Area 2B will continue to sheet drain to the drainage course which traverses the fairway. The total drainage from Tributary Area 2A and 2B will be less than currently discharges for all storms up to an including a 100 year frequency storm.

WATER QUALITY VOLUME

Water Quality Volume (WQ_v) is computed based upon the following formula:⁴

$$WQ_v = \frac{(P)(R_v)(A)}{12}$$

- Where WQ_v = water quality volume (acre-feet)
- P = 90% rainfall event⁵
- R_v = 0.05 + 0.009 I, where I is percent impervious cover
- A = site area in acres

The Water Quality Volume (WQ_v) is computed in Appendix #4. Table 3 shows the WQ_v for Developed Tributary Areas 1 & 2B. WQ_v is not computed for Developed Tributary Area No. 2A because that area is not being disturbed.

<u>Tributary Area</u>	<u>Water Quality Volume (WQ_v) in acre-feet</u>	<u>Water Quality Volume (WQ_v) in cubic feet</u>
1	0.50	21,742
2B	0.15	6,424

Table 3
Water Quality Volumes (WQv)

SEDIMENTATION BASIN

The pre-treatment basin also known as a sedimentation basin or stilling basin for Tributary Area 1 is designed to hold 38,306 CF which is 176.2% of WQ_v prior to overflow to the recharge basin. The sedimentation basin for Tributary Area 2B has sufficient capacity to contain approximately 297% of the Water Quality Volume (WQ_v). The required sedimentation basin area is computed using the following equation:

$$As = -(Qo/W).Ln (1-E)$$

⁴ *New York State Stormwater Management Design Manual*, New York State Department of Environmental Conservation, Albany, New York, October, 2001, amended August, 2003, Page 4-2

⁵ *Ibid.*, Page 4-2, Figure 4.1



where:

- As = Sedimentation basin surface area (ft²)
- E = sediment trap efficiency (use 90%)
- W = particle settling velocity (ft/sec)
use 0.0004 ft/sec for imperviousness (I) 75%
- Qo = Discharge rate from basin = (WQv/24 hr)

This equation reduces to:

- As = (0.066) (WQv) ft² for I < 75% 5435.5
- As = (0.0081) (WQv) ft² for I > 75%

The minimum volume required in the sedimentation basin for Tributary Area 2B is 25% of the WQv. For Developed Tributary Areas Nos. 1 & 2B this amount is shown below in Table 4 (see computation in Appendix #4).

<u>Devel- oped Tributary Area</u>	<u>Sedimentation Area Required (Square Feet)</u>	<u>Sedimentation Area Provided (Square Feet)</u>	<u>Sedimentation Volume Required</u>	<u>Sedimentation Volume Provided (Cubic Feet)</u>
1	1434	3950	21742	38306
2B	424	3248	1606	19071

**Table 4
Sedimentation Basin Area & Volumes**

SURFACE SAND FILTER

A recharge area was selected for Tributary Area 1. A surface sand filter was selected for Tributary Area 2B because filtering systems are a good option for improving water quality⁶. Use of a pond or wetland was not deemed advisable given its location in a residential and recreational area.

The required filter bed area is computed using the following equation

$$A_f = (WQv) (df) / [(k) (hf + df) (tf)]$$

Where:

- Af = Surface area of filter bed (ft²)
- df = Filter bed depth (ft)
- k = Coefficient of permeability of filter media(ft/day) (3.5 feet per day for sand)
- hf = Average height of water above filter bed (ft)

⁶New York State Stormwater Management Design Manual, New York State Department of Environmental Conservation, Albany, New York, October, 2001, amended August 2003 Page 7-4, Table 7.1, Land Use Selection Manual



tf = Design filter bed drain time (days) (1.67 days or 40 hours is recommended maximum tf for sand filters)

The area of the Surface Sand Filter for Tributary Area 2B is computed in Appendix #4. The water quality basin containing the Surface Sand Filter will hold a volume which exceeds the required surface area for Tributary Area No. 2B system. This will make the basin easier to maintain in that build up of silt or other filtered material on the sand bed will be slower and will extend the lifetime for these filters. An overflow channel is set to discharge the overflow through the overflow basin if the elevation exceeds the top of the overflow basin (see computation in Appendix #4).

For the sand filter, a permeable filter fabric shall be placed between the gravel layer and the filter media. A minimum of 2 feet of separation exists between the filter bottom and groundwater. The filter media shall consist of medium sand (meeting ASTM C-33 concrete sand). The system uses 8" diameter underdrains in a 1' gravel bed. Utilizing the 8" diameter underdrain makes freezing less likely, and provides a greater capacity to drain standing water from the filter. The porous gravel bed prevents standing water in the system by promoting drainage. Gravel is also less susceptible to frost heaving than finer grained media.

The normal design size for a water quality basin (filter basin) is the balance between the sedimentation basin and the 100% of WQv. The size of the surface filter bed and water quality basin for Developed Tributary Area 2B is shown in Table 5.

<u>Developed Tributary Area</u>	<u>Surface Filter Area Required (Square Feet)</u>	<u>Surface Filter Area Provided (Square Feet)</u>	<u>Minimum Design Size of Water Quality Basin (25% of WQv Cubic Feet)</u>	<u>Volume in Water Quality Basin Provided (Cubic Feet)</u>
2B	366	375	1606	13828

**Table 5
Surface Filter Area and Water Quality Basin Required and Provided**

STREAM CHANNEL PROTECTION VOLUME

The stream channel protection volume (C_{p_v}) is provided by retaining the one year, 24 hour storm event considering all pre & post tributary areas which have been disturbed to a level equivalent to or less than the unit peak discharge (q_u). The flow is limited to stormwater through the surface sand filter and strip filter (Dry swale) for the one year, 24 hour event. The table below shows each tributary area separately and together with the total site.



Pre-Developed Areas (Developed Tributary Areas)	1 year 24 hour storm (inches)	Existing Discharge (CFS)	Proposed Discharge (CFS)	Storage Required (acre-ft)	Storage Provided (acre ft)
A1 (1)	2.20	0.27	.00	0.28	0.95
2A & 2B (B1 & B2)	2.20	0.15	.07	0.01	0.72

**Table 6
Stream Channel Protection Volume**

OVERBANK FLOOD CONTROL CRITERIA

The overbank flood control criteria (Q_p) is met through controlling discharge from the ten year, 24 hour storm event to no greater than the predevelopment level considering all pre & post tributary areas which have been disturbed. (see Appendix #4).

Pre-Developed Areas (Developed Tributary Areas)	10 year 24 hour storm (inches)	Existing Discharge (CFS) (A + B)	Proposed Discharge (CFS)
A1 (1)	4.30	15.41	0.00
2A & 2B (B1 & B2)	4.30	7.15	6.43

**Table 7
Overbank Flood Control Criteria**



EXTREME FLOOD CONTROL CRITERIA

The extreme flood control criteria (Q_f) is met through controlling discharge from the hundred year, 24 hour storm event to no greater than the predevelopment level considering all pre & post tributary areas which have been disturbed. (see Appendix #4).

Pre-Developed Areas (Developed Tributary Areas)	100 year 24 hour storm (inches)	Existing Discharge (CFS)	Proposed Discharge (CFS)
A1 (1)	6.00	39.97	0.00
2A & 2B (B1 & B2)	6.00	19.25	13.40

Table 8
Extreme Flood Control Criteria

DESIGN CONSIDERATIONS

The design of a storm water conveyance system, storm water quantity storage system and the storm water quality system for the subject site considered the following critical factors:

1. The rate of runoff during a design storm (taken as 1, 2, 5, 10, 25, 50 & 100 year frequencies) from the site in the developed condition will be less than the rate of runoff from the site in the undeveloped state.
2. The sedimentation basin volume on Tributary Area No. 2B is set significantly larger than required to allow for the pavement area which may have a sediment load due to the unloading of construction vehicles.
3. A surface sand filter was selected for Developed Tributary Area 2b because filtering systems are a good option for improving water quality on urban sites.
4. The recharge and stilling basin are sized to accommodate the 100 year storm without any discharge from the system.
5. The conveyance system is designed to accommodate the 25 year storm.



5. Both systems were reviewed for compliance with Section 7.2 Physical Feasibility Factors of the *New York State Stormwater Management Design Manual*. The Matrix in Table 7.2⁷ indicates that for a Surface Sand Filter all soil types are acceptable (indicated as "OK"). Separation from Ground Water Table of 2 feet is also met.

CONSTRUCTION SEQUENCING & SEDIMENTATION AND EROSION CONTROL DURING CONSTRUCTION

- ✓ Assure that copy of SWPPP with signed certifications and copy of NOI are on the site.
- ✓ Establish schedule for site inspection at intervals not to exceed 7 calendar days or whenever a rainfall equaling or exceeding 0.5 inches occurs.
- ✓ Establish qualified individuals(s) who will be performing site inspection.
- ✓ Establish contact person for Contractor/Subcontractor.
- ✓ Install sedimentation fence as indicated on the plan. A plan showing sedimentation and erosion protection is contained in this report. The location of silt fence to be maintained throughout construction is shown on Sheet C-10 in Map Pocket #4 Details of construction sedimentation fence are shown on Sheet C-11 in Map Pocket #5
- ✓ Contractors must familiarize themselves with the Construction Sequencing Plan. See Sheet C-9 in Map Pocket #3.

Because a total of 37.28 acres will be disturbed constructing this subdivision the Construction Sequencing Plan must be followed to prevent a disturbance of more than 5 acres at any time. The following table shows how the construction sequence maintains the disturbance to less than 5 acres:

⁷ *New York State Stormwater Management Design Manual*, New York State Department of Environmental Conservation, Albany, New York, October, 2001, amended August 2003 Page 7-6, Table 7.2, Physical Feasibility matrix.



Construction Sequence No	Area disturbed in this sequence (Acres)	Areas from previous sequences still not stabilized (Acres)	Maximum Total disturbed area during this sequence (Acres)
1	5.00	0	5.00
2	2.76	0.50	3.26
3	4.86	0.00	4.86
4	4.98	0.00	4.98
5	2.51	0.35	2.86
6	3.80	1.00	4.80
7	3.26	1.30	4.56
8	4.91	0.00	4.91
9	3.50	0.00	3.50
10	1.70	1.90	3.60

**Table 9
Summary of Construction Sequence Disturbed Areas**

- ✓ Grade and prepare stabilized construction entrance and a stabilized construction road at the location of Road "B" from Route 85A to the parking lot at Colonie Country Club.
- ✓ Maintain Route 85A clean of any silt or tracking. Provide street cleaning as required.
- ✓ Clear sufficient portion of Construction Sequence Area 1 to grade the Road "B" and the temporary sediment trap in the vicinity of the overflow basin.
- ✓ Establish sub-grade in Road "B" in Construction Sequence Area 1 and install a minimum of 6" of NYSDOT approved sub-base material bringing this to permanently stable condition.
- ✓ Develop ditch lines and temporary sedimentation in Treatment System 2 first to control sedimentation from Construction Sequence Areas 1 and 2. Install sedimentation fence as required.
- ✓ Clear Construction Sequence Area #1.
- ✓ Commence grading by removing topsoil to stockpile area.
- ✓ Provide additional sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Install storm water conveyance system including catch basins, directing water to temporary sedimentation basin in Treatment Area 2.
- ✓ Protect catch basins with catch basin protection.
- ✓ Install pavement foundation course in Construction Sequence Area 1.
- ✓ Install pavement binder course in Construction Sequence Area 1.
- ✓ Spread topsoil to cover area of the portions of the future building sites in Construction Sequence Area 1.



- ✓ Seed and mulch in Construction Sequence Area 1 bringing this to permanently stable condition.
- ✓ Establish temporary stabilization in area surrounding Treatment Area 1. **DO NOT BUILD SURFACE SAND FILTER UNTIL ENTIRE TRIBUTARY AREA IS STABILIZED.**
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area #2. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 1.
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Install storm water conveyance system including catch basins, directing water to temporary sedimentation basin in Treatment Area 1.
- ✓ Protect catch basins with catch basin protection.
- ✓ Spread topsoil to cover area of the site of the future building sites in Construction Sequence Area 2.
- ✓ Seed and mulch in Construction Sequence Area 2 to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Grade and prepare stabilized construction entrance and a stabilized construction road at the location of Road "A" from Route 85A to the stilling basin area of Treatment Area No. 1.
- ✓ Maintain Route 85A clean of any silt or tracking. Provide street cleaning as required.
- ✓ Install a minimum of 6" of NYSDOT approved sub-base material bringing this to permanently stable condition.
- ✓ Clear sufficient portion of Construction Sequence Area 4 to grade the Road "A" and the temporary sediment trap in the vicinity of the overflow basin.
- ✓ Establish sub-grade in Road "A" in Construction Sequence Area 4 bringing this to permanently stable condition.
- ✓ Clear sufficient portion of Construction Sequence Area 3 to develop stilling basin to act as a temporary sedimentation trap.
- ✓ Provide temporary ditch lines and temporary sedimentation in Treatment System 2 first to control sedimentation from Construction Sequence Areas 3, 4, 6, 7, 8, 9 & 10.
- ✓ Install sedimentation fence as required.
- ✓ Clear Construction Sequence Area #3. Install additional sedimentation fence as required.
- ✓ Establish sub-grade in Road "A" and Road "B" in Construction Sequence Areas 3 & 4. Install a minimum of 6" of NYSDOT approved sub-base material bringing this to permanently stable condition.



- ✓ Install flare ends, drainage piping culvert and catch basins within Construction Sequence Areas 3 & 4. Install rip rap protection at flare ends where the outfall or intake to the culvert exist.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 3 (borders on Construction sequence 10 area).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Install storm water conveyance system including catch basins, directing water to temporary sedimentation basin in Treatment Area 2.
- ✓ Protect catch basins with catch basin protection.
- ✓ Install pavement foundation course in Construction Sequence Area 3.
- ✓ Spread topsoil to cover area of the site of the future building sites in Construction Sequence Area 3
- ✓ Seed and mulch disturbed areas in Construction Sequence Area 3 bringing this area to permanently stable condition.
- ✓ **NOTE: THE RECHARGE BASIN DOES NOT NEED TO BE GRADED OR TREATED AT THIS TIME. AVOID GRADING OR RUNNING EQUIPMENT IN THIS AREA TO REDUCE THE DENSIFICATION OF NATURAL SOILS.**
- ✓ Seed and mulch in Construction Sequence Area 3.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area #4. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 4.
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Install storm water conveyance system including catch basins, directing water to temporary sedimentation basin in Treatment Area 2.
- ✓ Protect catch basins with catch basin protection.
- ✓ Install pavement foundation course in Construction Sequence Area 4.
- ✓ Spread topsoil to cover area of the site of the future building sites in Construction Sequence Area 4.
- ✓ Seed and mulch in Construction Sequence Area 4 bringing this area to permanently stable condition.
- ✓ Clear Construction Sequence Area #5. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 4.
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 5.
- ✓ Seed and mulch in Construction Sequence Area 5 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.



- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area #6. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 8 (bordering Construction Sequence 6).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Install storm water conveyance system including catch basins, directing water to temporary sedimentation basin in Treatment Area 2.
- ✓ Protect catch basins with catch basin protection.
- ✓ Establish sub-grade in roadways in Construction Sequence Area 6.
- ✓ Install a minimum of 6" of NYSDOT approved sub-base material bringing this to permanently stable condition.
- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 6.
- ✓ Seed and mulch in Construction Sequence Area 6 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area 7. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 8 (bordering Construction Sequence 6).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 7.
- ✓ Seed and mulch in Construction Sequence Area 7 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area 8. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 8 (bordering Construction Sequence 6).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 8.
- ✓ Seed and mulch in Construction Sequence Area 8 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area 9. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 3 (bordering Construction Sequence 10).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.



- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 9.
- ✓ Seed and mulch in Construction Sequence Area 9 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ Clear Construction Sequence Area 10. Install additional sedimentation fence as required.
- ✓ Commence grading by removing topsoil to stockpile area in Construction Sequence Area 3 (bordering Construction Sequence 10).
- ✓ Maintain sedimentation control around topsoil stockpile as required.
- ✓ Complete grading to finish grades.
- ✓ Spread topsoil to cover area of the site in Construction Sequence Area 10.
- ✓ Seed and mulch in Construction Sequence Area 10 bringing this to permanently stable condition.
- ✓ Maintain this area clean of debris.
- ✓ Oil and grease spills from equipment shall be treated immediately.
- ✓ After construction progresses so that no disturbances are necessary, complete pavement with the exception of the top course.
- ✓ Plant all landscaping material.
- ✓ When site is completely stabilized, fine grade all areas within Treatment Area 1.
- ✓ Remove all accumulated silt within the stilling basin and dispose of properly.
- ✓ Remove temporary standpipe.
- ✓ Prepare final grade in stilling basin.
- ✓ Verify that area of recharge basin has not been densified so that recharge capability is impacted. If necessary utilize mechanical means to reduce soil density.
- ✓ Seed and mulch bringing this to permanently stable condition.
- ✓ When site is completely stabilized, fine grade all areas within Treatment Area 2.
- ✓ Remove all accumulated silt within the temporary sediment trap area and dispose of properly.
- ✓ Remove temporary standpipe.
- ✓ Prepare final grade in the surface sand filter area of Treatment Area 2.
- ✓ Seed and mulch bringing this to permanently stable condition.
- ✓ Check all catch basins and pipes for accumulation of silt or other materials. Clean as required.
- ✓ Check all outfalls/intakes and repair any rip-rap which has been disturbed.
- ✓ Schedule inspection with local officials. Make any repairs required.
- ✓ File Notice of Termination.
- ✓ Transfer title to SWPPP areas the Town of New Scotland.



CERTIFICATIONS

By filing this report the preparer certifies that he is a Professional Engineer licensed in the state of New York and is a qualified individual as defined in SPDES General Permit #GP-02-01 and in GP#008-01 and in accordance with the Town of New Scotland Local Law No. 8 of 2007.. The Engineer is Daniel R. Hershberg, P.E. & L.S., of the firm of Hershberg & Hershberg with offices located at 18 Locust Street, Albany, New York, 12206. The phone number is 518-459-3096 and the fax number is 518-459-5683. The Engineer certifies that this design conforms with standards set forth in the *New York State Stormwater Management Design Manual* published by the New York State Department of Environmental Conservation, Albany, New York and dated October, 2001 amended August 2003.

Through completion of the Certification by the Contractor/Subcontractor (see Attachment No. 3), the Contractor/Subcontractor is certifying that the entity executing this certification is responsible for activities involving clearing, grading, installation of storm water quantity controls and storm water quality controls. If multiple Contractors/Subcontractors have responsibility for grading or construction of stormwater quality or quantity control facilities, every Contractor/Subcontractor must complete a certifications. Certifications must be with the SWPPP and maintained on the construction site.

Through completion of the Certification by the Owner/Developer (see Attachment No. 4), the Owner/Developer is certifying that the entity executing this certification is responsible for retaining the Contractor, retaining the Engineer to perform inspections required and for the installation of storm water quantity controls and storm water quality controls. This certification must be with the SWPPP and maintained on the construction site. The Owner/Developer is Amedore Homes, Inc. having its office at 1900 Western Avenue, Albany, NY 12203 and a local phone number of (518) 456-1010.

A qualified professional is to certify the site has undergone 'final stabilization' prior to filing of the NOT. Final Stabilization defined as 80% establishment rate of perennial vegetation or use of structural measures. The Town of New Sotland will be provided with an O&M manual of all permanent stormwater management facilities. Certification that permanent stormwater management structures were constructed as described in SWPPP is required by a qualified professional.



CONCLUSIONS

It is the conclusion of the Engineer that the drainage system, as designed, will function adequately and will not adversely affect adjacent or downstream properties. It is also the conclusion of the Engineer that the sedimentation system and treatment system will function adequately to meet the goals of SPDES General Permit #GP-02-01 or GP#008-01 and in accordance with the regulations of the Town of New Scotland . This design conforms to standards set forth in the *New York State Stormwater Management Design Manual* published by the New York State Department of Environmental Conservation, Albany, New York and dated October, 2001 as amended August, 2003. The Maintenance Manual defines tasks to be accomplished by the Town of New Scotland in achieving the proper operation of the system.



Prepared by:

A handwritten signature in black ink, appearing to read "D. Hershberg", written over a horizontal line.

Daniel R. Hershberg, P.E. & L.S.
Lic. No. 44226

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