NOTES:
1. The parcel is generally forested with oak, pine & some maple trees. scattered through out. The existing gravel cover contains small bushes and leaf cover.
2. Private wells and septic systems (ISDS) are proposed on each Lot.
3. The parcel as delineated on National Flood Insurance Program Flood Insurance Rate Map, Town of Richmond, R.I., Washington County, Panel 2 of 20, Community Panel No. 440031-002B, effective date Nov. 5, 1980, is located in a Zone C area of minimal flooding.
4. Overhead utilities will be placed within the proposed right-of-way of Wisteria Lane as shown on these plans. National Grid will confirm location of utility poles prior to construction.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

PRESENT DIMENSIONAL REQUIREMENTS FOR CONSERVATION DEVELOPMENT (SECTION 18.41.060)

LOT SIZE:	10, 000 S.F.
FRONTAGE:	80'
FRONT YARD:	25'
REAR YARD:	30'
SIDE YARD:	10'

LOT AREAS

LOT 1	23,421.11 S.F. Or 0.54 Acres
LOT2	19, 152.89 S.F. Or 0.44 Acres
LOT 3	22, 774.60 S.F. Or 0.52 Acres
LOT 4	27,262.40 S.F. Or 0.63 Acres
LOT 5	18, 810.00 S.F. Or 0.43 Acres
LOT 6	24, 054.16 S.F. Or 0.55 Acres
LOT 7	22, 371.23 S.F. Or 0.51 Acres
LOT 8	26, 850.58 S.F. Or 0.62 Acres
LOT 9	28, 133.68 S.F. Or 0.65 Acres
LOT 10	25, 670.00 S.F. Or 0.59 Acres

LEGEND

- 373.62' = DISTANCE IN FEET
- N/F = NOW OR FORMERLY
- = STONEWALL
- = FLAGGED WETLAND EDGE
- = EXISTING TRAIL
- = EXISTING CONTOUR
- H = PROPOSED 3- BEDROOM DWELLING
- G = PROPOSED GARAGE
- D = PROPOSED DRIVEWAY
- P = PRIMARY SEPTIC SYSTEM
- A = ALTERNATE SEPTIC SYSTEM
- ⊙ = PROPOSED WELL
- ○ = EXISTING TEST HOLE
- ○ = UTILITY POLE
- ● = EXISTING WELL
- ± = MORE OR LESS

PRESENT ZONING CLASSIFICATION
R - 2

LOT SIZE	2 Ac.
LOT WIDTH	200'
FRONT YARD	50'
REAR YARD	100'
SIDE YARD	35'

TOWN OF RICHMOND, RHODE ISLAND
RECEIVED FOR RECORD

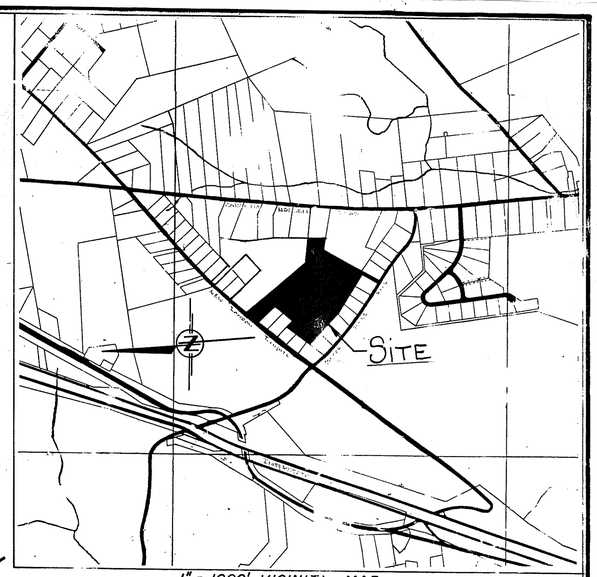
AT M.

MAP # SLIDE #

Mary E. Morgan
Acting Town Clerk

I hereby certify that this map meets class 1 Survey Standards and conforms to Procedural and Technical Standards for the practice of Land Surveying in the State of Rhode Island and Providence Plantations as prepared by the Rhode Island Society of Professional Land Surveyor's, Inc. May 1992 as amended. Richard A. Greene

100 0 100 200 300
1" = 100'
GRAPHIC SCALE



1" = 1000' VICINIT MAP

DEVELOPMENT DATA

GA – GROSS AREA = 23.24 ACRES or 1, 012, 180.00 S.F.

NA – WETLAND AREA = 71, 874.0 S.F. ± or 1.65 ACRES ±

NA – ROADWAY AREA = 61, 419.60 S.F. or 1.41 ACRES

GD – GROSS DEVELOPMENT DENSITY = 20.18 ACRES

V – PERMISSABLE NO. OF RESIDENTIAL DWELLING UNITS = 10

LOTS = 10

TOTAL AREA OF LOTS = 238,500.66 or 5.48 ACRES

TOTAL LINEAR FT. OF ROADWAY = 1195 ±

TOTAL AREA OF COMMON OPEN SPACE = 607, 424.68 S.F. ± or 13.94 ACRES ±

PERCENTAGE OF TOTAL AREA FOR ROADWAY = 6.07 %

PERCENTAGE OF TOTAL AREA OF COMMON OPEN SPACE = 60.01 % (EXCLUDES WETLAND AREA/EASEMENT AREAS)

PERCENTAGE OF TOTAL AREA FOR LOTS = 24.44 % (INCLUDES BUILDING AREA)

PERCENTAGE OF TOTAL AREA WETLANDS = 7.10 %

PERCENTAGE OF EASEMENT AREAS = 2.38 %

PERCENTAGE OF BUILDING AREA = 1.00 %

TOTAL = 100 %

Approx. Population of Subdivision = 33 Persons

RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING
No. 3166
REGISTERED PROFESSIONAL ENGINEER

Owner/Applicant: Coachland, Inc.
C/o Norbert M. Ansay, Sr.
6 Buttonwood Road
Wyoming, RI 02898

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 5 2008 FILE # 07-0085
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

PRELIMINARY

CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

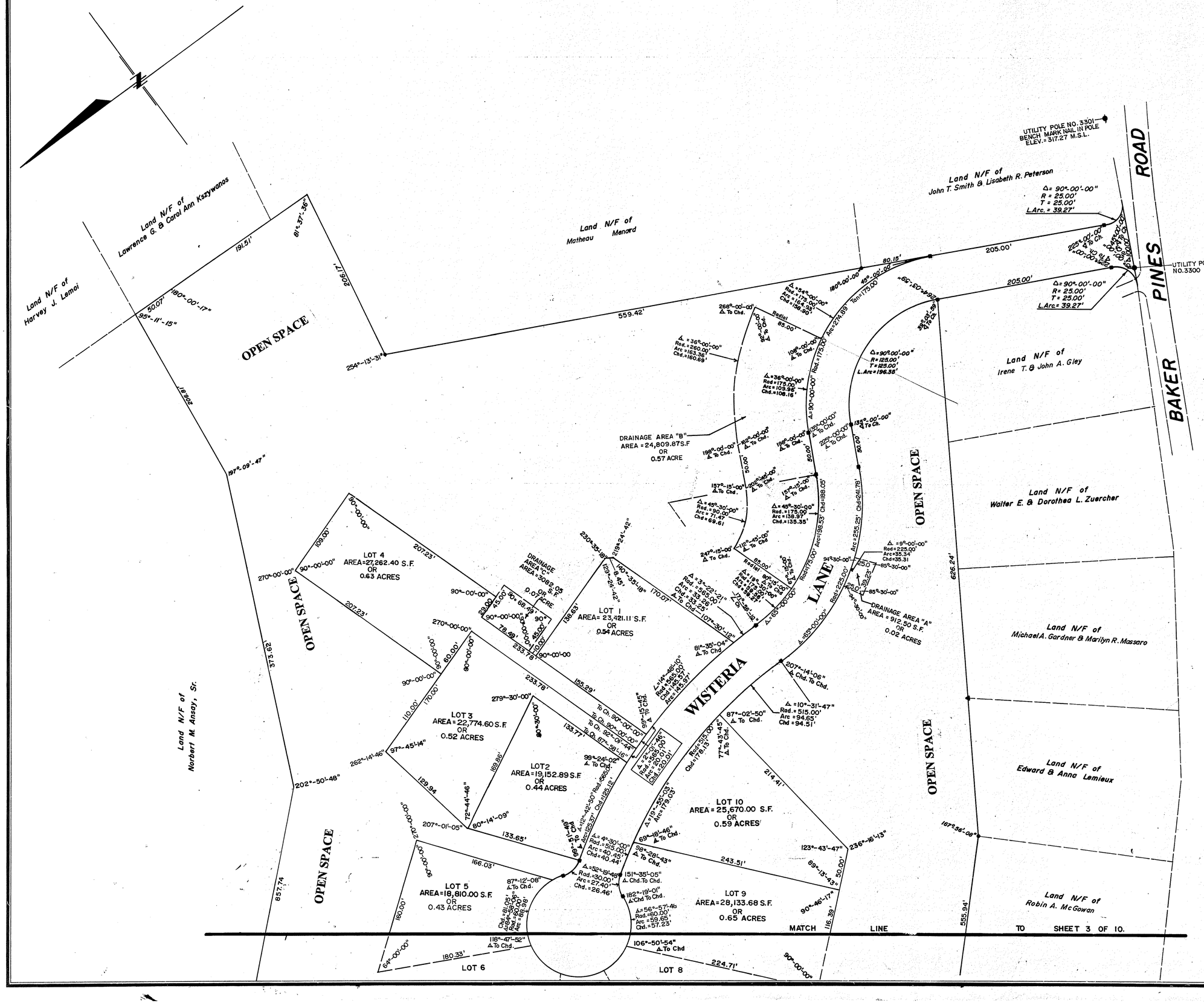
JUN 24 2008

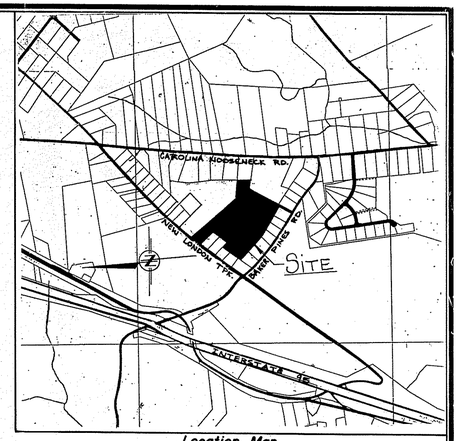
ASSESSOR'S PLAT 3C, LOT 2
NEW LONDON TURNPIKE, BAKER PINES ROAD, & CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1"=100' DATE: December 23, 2003
REVISED: FEB.11, 2004, APRIL, 2005 AUGUST, 2005. MARCH 25, 2006 JAN., 2007. FEB., 2007 JUNE, 2008.

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RI 02812
TEL: 401-364-9405
FAX: 401-364-9403

SHEET 1 OF 10





Location Map

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 2 5 2008 FILE # 09-0015
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
Cynthia D. Wenecek

EUGENE F. SPRING
No. 3166
REGISTERED PROFESSIONAL ENGINEER

RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

PRELIMINARY

CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

ASSESSOR'S PLAT 3C, LOT #'S 2 4 2008
NEW LONDON TURNPIKE, BAKER PINES ROAD
& CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1" = 50' DATE: NOVEMBER 21, 1994
REVISED: DEC. 4, 2000., MAR. 30, 2001. MAR. 25, 2003.
AUGUST, 2005.
MARCH 25, 2006
JAN., 2007.
FEB., 2007.
JULY, 2007.
JUNE, 2008.

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RHODE ISLAND
TEL. 364-9405

SHEET 2 OF 10

F3 D1 #14

LOT 5

Δ=84°-58'-06"
Rad=60.00'
Arc=88.98'
Chd.=81.05'

WISTERIA LANE

182°-19'-01" Δ Chd. To Chd.
Δ=56°-57'-48"
Rad=60.00'
Arc=59.65'
Chd.=57.23'

LOT 9
AREA=28,133.68 S.F.
OR
0.65 ACRES

243.51'

90°-46'-17"

160.00'

MATCH LINE TO SHEET 2 OF 10.

Land N/F of
Robin A. McGowan

118°-47'-52" Δ To Chd.

106°-50'-54" Δ To Chd.

180.33'

63°-59'-53"

55°-09'-08"

127°-05'-24" Δ To Chd.

Δ=46°-48'-25"
Rad=60.00'
Arc=49.02'
Chd=47.66'

119°-56'-30" Δ To Chd.

Δ=36°-07'-00"
Rad=50.00'
Arc=31.52'

109°-18'-30" Δ To Chd.

224.71'

90°-00'-00"

116.39'

65°-48'-56"

204°-11'-04"

240°-50'-59"

LOT 6
AREA=24,054.16 S.F.
OR
0.55 ACRES

127°-58'-33" Δ To Chd.

Δ=48°-45'-00"
Rad=60.00'
Arc=51.05'
Chd=49.52'

99°-48'-09" Δ To Chd.

145°-22'-30" Δ To Chd.

LOT 8
AREA=26,850.58 S.F.
OR
0.62 ACRES

OPEN SPACE

OPEN SPACE

277.39'

196.25'

159.82'

222.80'

LOT 7
AREA=22,371.23 S.F.
OR
0.51 ACRES

49°-46'-38"

84°-59'-38"

177.92'

60°-49'-42"

65°-56'-04"

225°-13'-27"

233°-14'-14"

857.74'

555.94'

Land N/F of
Detrick & Katie Marie Scurry

Land N/F of
Patricia Gervais

OPEN SPACE

261°-37'-30"

300.00'

278°-22'-30"

68.97'

81°-37'-30"

387.76'

97°-46'-22"

Land N/F of Norbert M. Ansay, Sr.

AREA

WETLAND

OPEN SPACE

300.00'

Land N/F of
Anne L Kitowicz

Land N/F of
Bradley & Linda M. Palmer

Land N/F of
Roger J. & Anne D. Fleet

Land N/F of
Gerald R. & Elizabeth A. Bowser

Land N/F of
Bruno Soffientino & Elin Torell

576.70'

382.65'

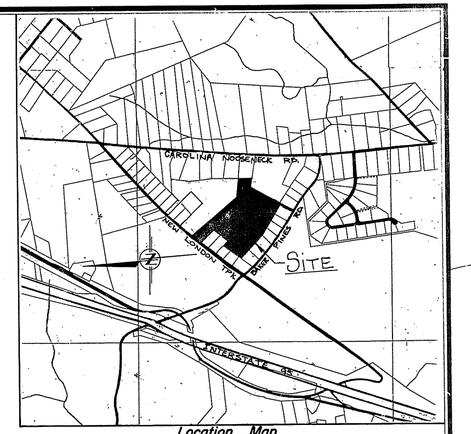
17.35'

79°-10'-16"

160.85'

98°-22'-30"

NEW LONDON TURNPIKE



Location Map

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS DESCRIBED IN THE LETTER OF APPROVAL
DATED AUG 25 2008 FILE # 08-0055
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING
No. 3166
REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY

CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES
SECTION III

JUN 24 2008

ASSESSOR'S PLAT 3C, LOT # 2
NEW LONDON TURNPIKE, BAKER PINES ROAD
& CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1" = 50'

DATE: NOVEMBER 21, 1994
REVISED: DEC. 4, 2000., MAR. 30, 2001.
MAR. 25, 2003
AUGUST, 2005.
MARCH 25, 2006
JAN., 2007.
FEB., 2007.
JULY, 2007.
JUNE, 2008.

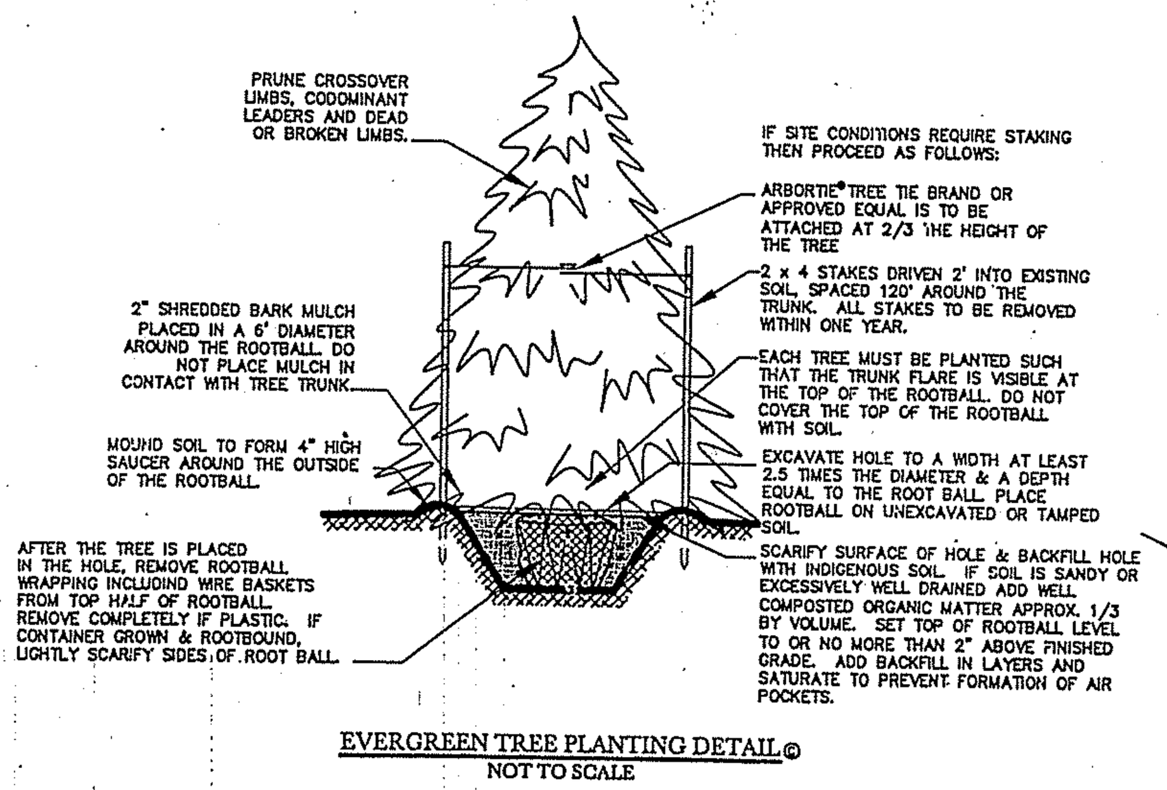
RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RHODE ISLAND
TEL. 364-9405

SHEET 3 OF 10

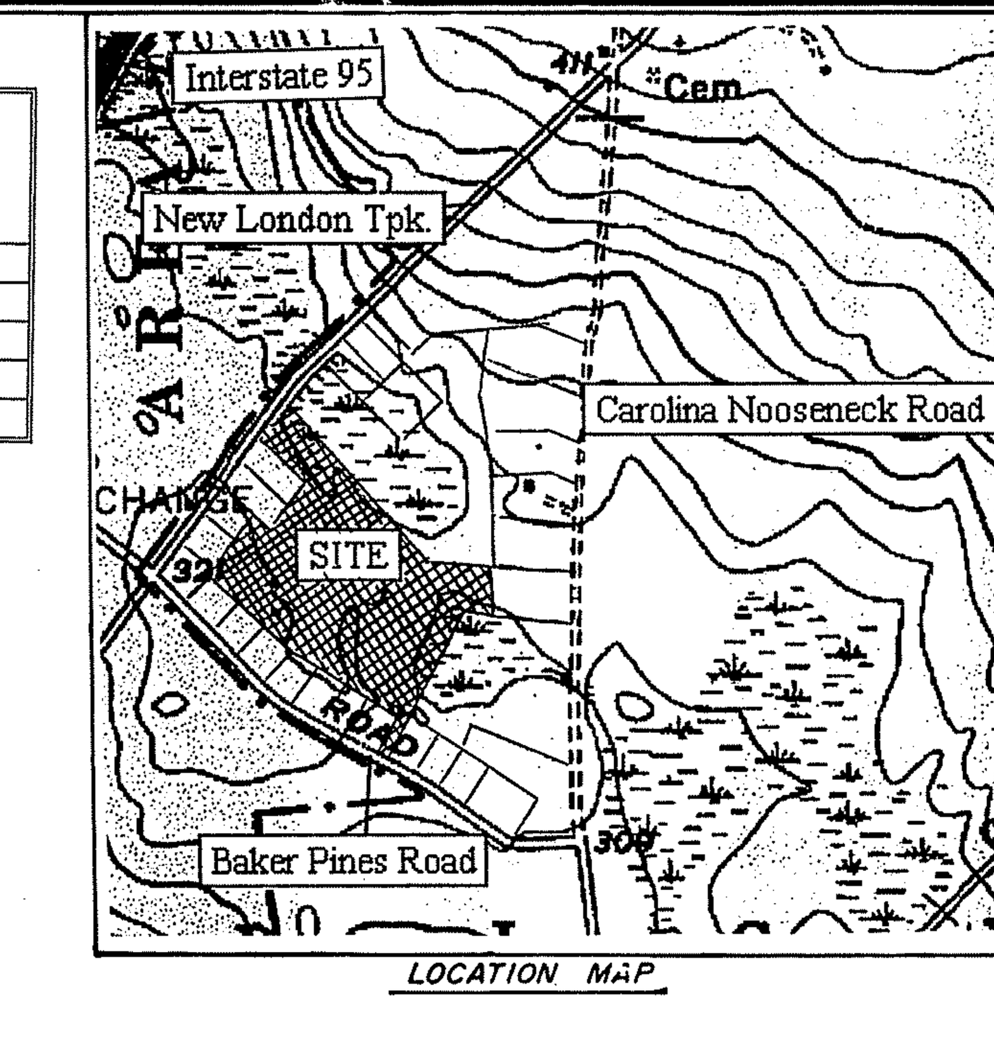
F3 D1

PLANTING SCHEME

1. A row of tree saplings including arbor vitae (*Thuja occidentalis*) and/or white pine (*Pinus strobus*) will be planted at the south and/or southeasterly limits of disturbance line for Proposed Lots 1, 3, 5, and 11, as indicated on this site plan.
2. Saplings will be planted 8-10 feet on-center, 5-6 feet in height after planting.
3. A variety of shrubs including, but not limited to, highbush blueberry (*Vaccinium corymbosum*), arrowwood (*Viburnum recognitum*), sweet pepperbush (*Clethra alnifolia*), and inkberry (*Ilex glabra*) will be planted around the proposed detention basin.
4. Shrubs will be planted in an interspersed fashion, 5-6 feet on-center, and 2-3 feet in height after planting.
5. Any plantings not surviving at least two growing seasons will be replaced.



PROPOSED BOTTOM ELEVATION (FT) OF SEWAGE DISPOSAL FIELDS	
LOT 1 = 314.00'	LOT 6 = 314.50'
LOT 2 = 317.67'	LOT 7 = 317.00'
LOT 3 = 318.50'	LOT 8 = 315.50'
LOT 4 = 313.42'	LOT 9 = 316.00'
LOT 5 = 318.70'	LOT 10 = 315.50'



Note:

Entire site is located within R-2 Zone with the following dimensional & setback requirements:

Lot Size	- 2 Ac.
Lot Width	- 200 ft.
Front Yard	- 50 ft.
Rear Yard	- 100 ft.
Side Yard	35 ft.

RICHARD A. GREENE No. 1731 PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING No. 3166 REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY SUBDIVISION SUITABILITY CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

JUN 2 4 2008

ASSESSOR'S PLAT 3C, LOT 2
NEWLONDON TURNPIKE, BAKER PINES ROAD, & CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1"= 50' DATE: FEB. 11, 2004

REVISED: AUGUST, 2005. MARCH 25, 2006 JAN., 2007. FEB., 2007. FEB., 2008. MAR, 2008 JUNE, 2008

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
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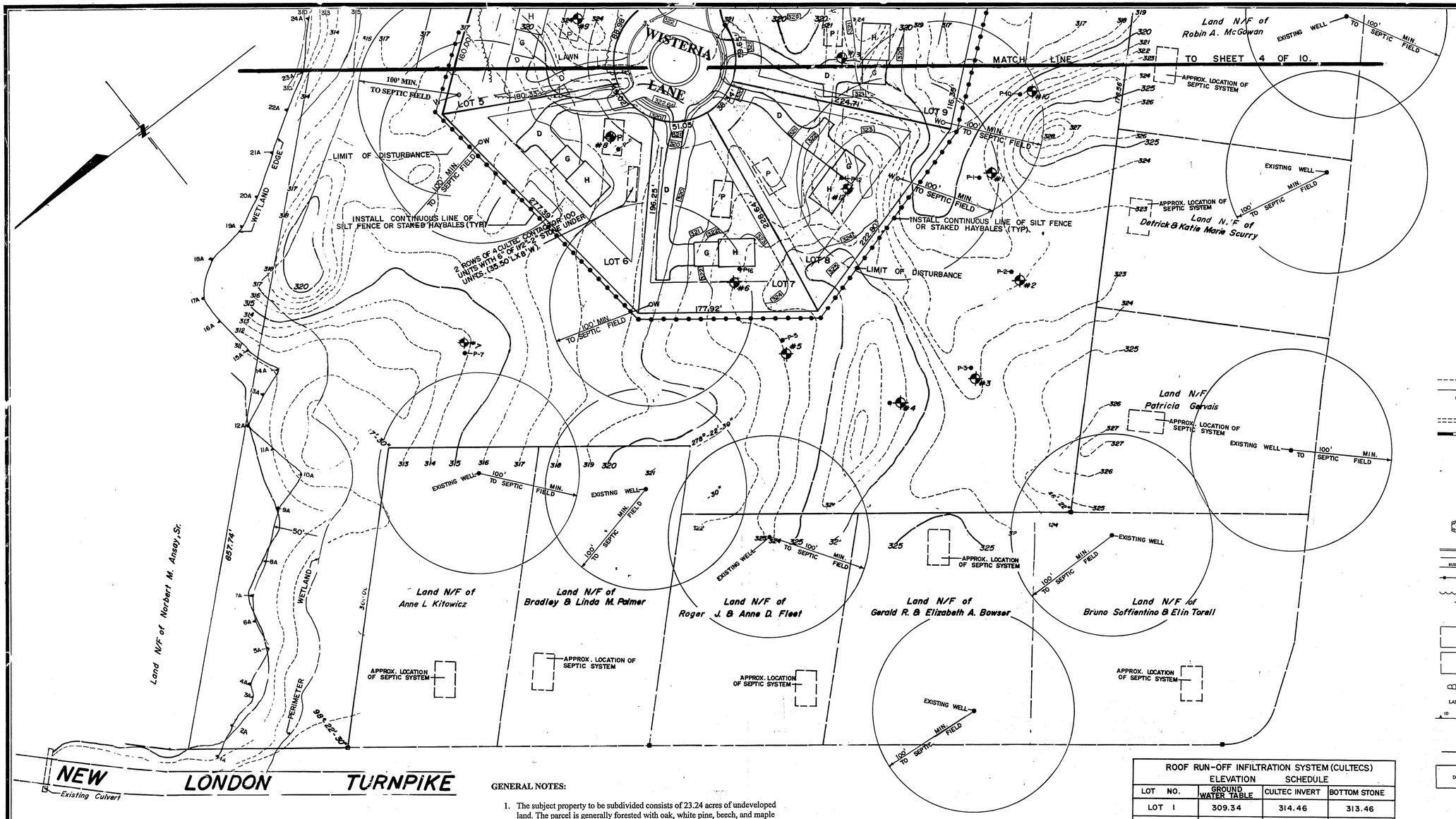

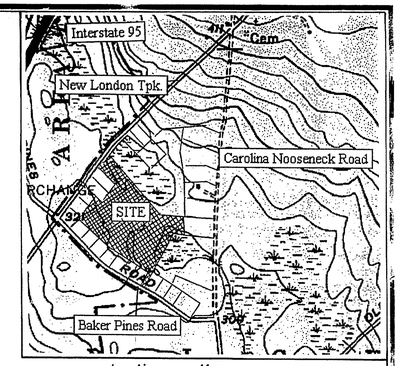

GENERAL SITE PLAN LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS (FINISH GRADE)
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING STORM DRAIN LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED DRAINAGE MANHOLE STRUCTURE
- PROPOSED CATCH BASIN STRUCTURE
- PROPOSED FLARED END SECTION
- EXISTING UTILITY POLE
- PROPOSED RIP RAP APRON
- PROPOSED PAVED ROAD CURB LINE
- PROPOSED WELL WATER SUPPLY LINE
- PROPOSED BUILDING CONSTRUCTION SET BACK LINE
- CONTINUOUS LINE OF STAKED HAYBALES OR SILT FENCE CONSTRUCTION
- PROPOSED- TREE LINE EDGE
- TEST HOLE WING
- PERCOLATION HOLE WING
- PROPOSED PRIMARY LEACHFIELD LOCATION (SIZE & DIMENSIONS VARY)
- PROPOSED ALTERNATE LEACHFIELD LOCATION
- PROPOSED RETAINING WALL
- LAND N/F (NAME) — LAND NOW OR FORMERLY - PROPERTY OWNER NAME
- WETLAND FLAG FIELD IDENTIFICATION NUMBER FRESHWATER WETLAND EDGE - FIELD LOCATED BY SURVEY
- SHEET MATCH LINE
- PROPOSED DWELLING & GARAGE

Kindly be advised that this **Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.**

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL.
DATED AUG 25 2008 FILE # 07-0055
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

Martin D. Wenck

RIDEM SUBDIVISION SUITABILITY NOTES:

1. The subject parcel in the area of proposed improvements is primarily vegetated with oak, white pine, beech, and maple. The understory consists mainly of green briar, white pine saplings, and areas of blueberry.
2. There are RIDEM regulated freshwater wetlands on the subject parcel. These wetland areas consist of "Wooded Swamp" with associated 50' Perimeter Wetland and a "Special Aquatic Site" with no associated buffer.
3. All existing and proposed private wells within 200' of the proposed subdivision lots are as indicated.
4. The proposed subdivision is not located within a "Critical Resource Area" as defined by RIDEM-ISDS Program.
5. There are no existing or proposed public water supplies within 500' of the proposed subdivision.
6. All existing and proposed ISDS's within 100' of the proposed subdivision lots are as indicated.
7. All existing subsurface drains within 100' of the proposed subdivision lots are as indicated.
8. All proposed subdivision lots will be served by individual wells as indicated.

GENERAL NOTES:

1. The subject property to be subdivided consists of 23.24 acres of undeveloped land. The parcel is generally forested with oak, white pine, beech, and maple trees. The understory consists of white pine saplings, green briar, and areas of blueberry.
2. The proposed individual lots will be serviced by private wells and individual sewage disposal systems (ISDS's). Single family residential dwellings are proposed for each lot.
3. There are no historic cemeteries within or immediately adjacent to the proposed subdivision.
4. The subject parcel is not located within any National Heritage Areas (RIDEM) or Special Area Management Plan (CRMC).
5. Construction of the proposed roadway improvements and drainage improvements shall conform to the requirements of the Richmond Subdivision Regulations, Town of Richmond, Department of Public Works, R.I. Department of Transportation (RIDOT) where applicable.
6. Overhead utilities will be placed within the proposed right-of-way of Wisteria Lane as shown on these plans. National Grid will confirm location of utility poles prior to construction.
7. There are no viewsheds from or through the property (wooded with no open fields). Also, there are no prominent geologic features, such as rock outcroppings, cliffs, kettle holes, eskers, etc.
8. All proposed driveways to be constructed & maintained with a gravel or crushed stone surface.

GENERAL WETLAND NOTES:

1. Map is compiled from on site fieldwork completed by Richard A. Greene & Associates, Inc. The map meets Class II Standards as adopted by the Rhode Island Society of Professional Land Surveyors, Inc.
2. Topography as represented is based upon mean sea level datum.
3. The wetland areas as indicated on subject parcel were field delineated (flagged) by Kathleen Mangan, Inc.
4. The proposed improvements are outside the 100- Year Floodplain as referenced for that map entitled, "FIRM, Flood Insurance Rate Map, Town of Richmond, R.I., Washington County, Panel 2 of 20, Community Panel No. 440031-002B, Effective Date: Nov. 5, 1980.

ROOF RUN-OFF INFILTRATION SYSTEM (CULTECS) ELEVATION SCHEDULE

LOT NO.	GROUND WATER TABLE	CULTEC INVERT	BOTTOM STONE
LOT 1	309.34	314.46	313.46
LOT 2	315.67	320.46	319.46
LOT 3	315.67	320.46	319.46
LOT 4	309.34	314.46	313.46
LOT 5	311.67	316.46	315.46
LOT	311.70	317.20	316.20

NOTE: ROOF RUN-OFF INFILTRATION SYSTEM(CULTEC) STORAGE VOLUME=166.70 CU. FT.

PROPOSED BOTTOM ELEVATION (FT) OF SEWAGE DISPOSAL FIELDS

LOT 1 = 314.00'	LOT 6 = 314.50'
LOT 2 = 317.67'	LOT 7 = 317.00'
LOT 3 = 318.50'	LOT 8 = 315.50'
LOT 4 = 313.42'	LOT 9 = 316.00'
LOT 5 = 318.70'	LOT 10 = 315.50'

RICHARD A. GREENE — No. 1731 — PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING — No. 3166 — REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY SUBDIVISION SUITABILITY CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

JUN 24 2008

ASSESSOR'S PLAT 3C, LOT 2
NEWLONDON TURNPIKE, BAKER PINES ROAD, & CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1"= 50' **DATE: FEB. 11, 2004**
REVISED: AUGUST, 2005. MARCH 25, 2006
JAN., 2007
FEB., 2007
JUNE, 2008.

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RI 02812
TEL: 401-364-9405
FAX: 401-364-9403

SHEET 5 OF 10

P3 01 #14

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RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING
No. 3166
REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY

CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

ASSESSOR'S PLAT 3C, LOT 2
NEW LONDON TURNPIKE, BAKER PINES ROAD, AND CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1"=50'

DATE: DECEMBER 23, 2003
REVISED: FEB. 11, 2004, JUNE, 2004
AUGUST, 2005. MARCH 25, 2006
JAN., 2007
FEB., 2007
JUNE, 2008.

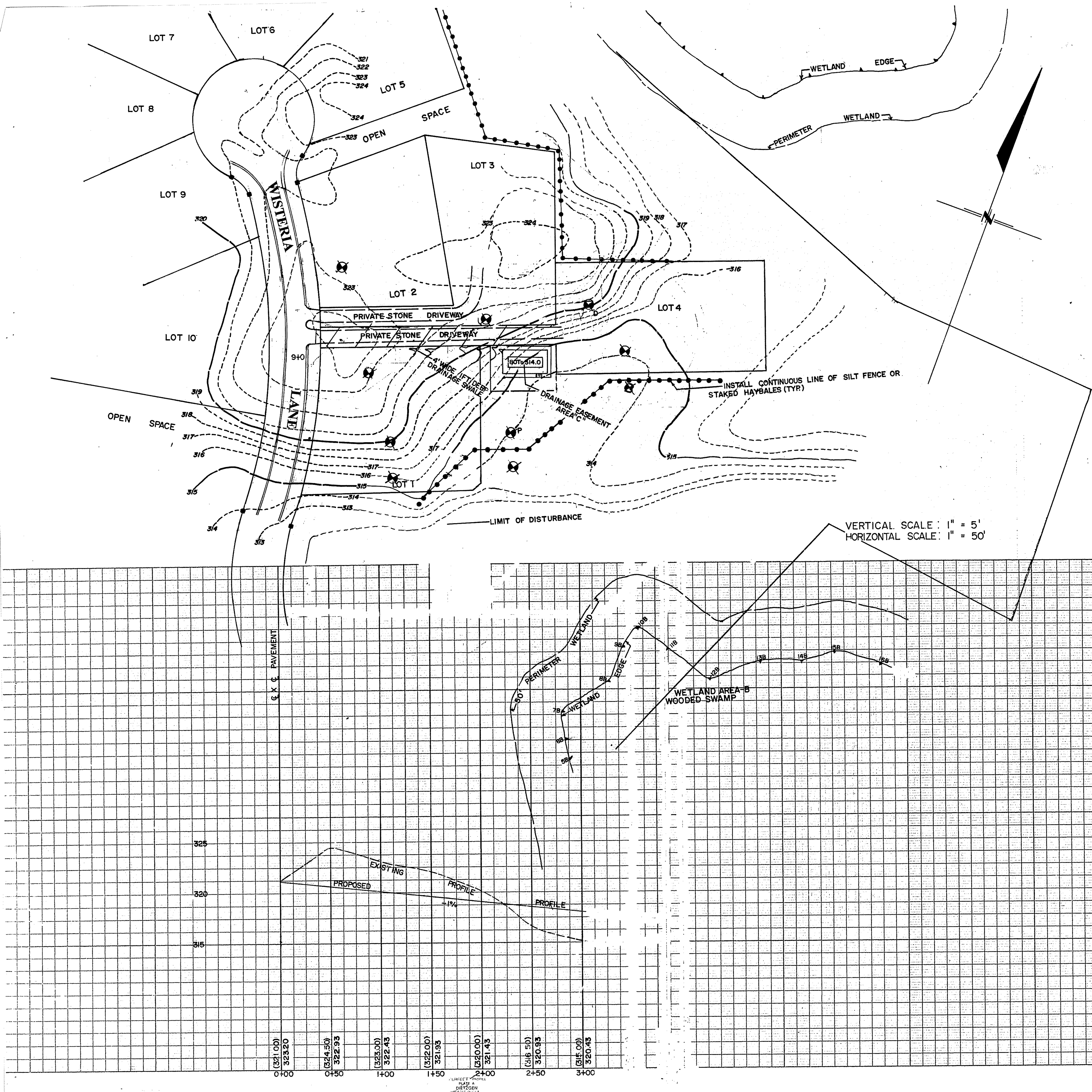
RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RI 02812
TEL.: 401-364-9405
FAX: 401-364-9403

SHEET 6 OF 10

DATE: AUG 2 5 2008 07-0055
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL. APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
Martin D. Wencek

JUN 24 2008

F3 D1 #14



RICHARD A. GREENE
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EUGENE F. SPRING
No. 3166
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PRELIMINARY

CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

ASSESSOR'S PLAT 3C, LOT # 2
NEW LONDON TURNPIKE, BAKER PINES ROAD
& CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: 1" = 50'

DATE: NOVEMBER 21, 1994
REVISED: DEC. 4, 2000., MAR. 30, 2001.
MAR 25, 2003. APRIL 2005
AUGUST, 2005 MARCH 25, 2006
JAN., 2007.
FEB., 2007.
JUNE, 2008.

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RHODE ISLAND
TEL. 364-9405

SHEET 7 OF 10

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF WATER RESOURCES
LETTER OF APPROVAL
AUG 25 2008 FILE # 07-0055
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

JUN 24 2008

F3 D1 #14

EROSOIN CONTROL & SOIL STABILIZATION PROGRAM

1. Denuded slopes shall not be unattended or exposed for excessive periods of time such as the inactive winter season.

2. All disturbed slopes either newly created or exposed prior to October 15, shall be seeded or protected by that date for any work completed during each construction period.

3. The topsoil shall have a sandy loam texture relatively free of subsoil material, stones roots, lumps of soil, tree limbs, trash or construction debris and shall conform with R.I. Standard Specification M 20.

4. The design mix shall be comprised of the following:

   A. Sod Waterways, Drainage Ditches, Detention Basins, Etc.

	Lbs/Acre	Lbs/1000 S.F.
Creeping Red Fescue	20	.45
Tall Fescue or Reed Canarygrass*	20	.45

   *Use Reed Canarygrass where mowing is not required. Source USDA, Soil Conservation Service.

   B. General Purpose (Shoulder of Roadway)
   Minimum Maintenance:

	Unmowed or Infrequently mowed	
	Lbs/Acre	Lbs/1000 S.F.
Red Fescue	75	1.75
Colonial Bentgrass 'Exeter'	5	.11
Perennail Ryegrass	5	.11
Birdsfoot Trefoil 'Empire'	15	.35

   *Use Inoculated Seed; May include 20% hard seed.
   Source: U.R.I. Agricultural Experiment Station Bulletin 432 Kingston, R.I. (R.I. Dept. of Transportation Slope Seed Mixture)

   C. Buffer Zones Adjacent to Wetlands or Surface Waters and Wetland Areas

	Lbs/Acre	Lbs/1000S.F.
Reed Canarygrass	20	.45
Ladino Clover*		

   *Use Inoculated Seed

   Seeding Dates:
   Early spring or late summer seeding is recommended. Mid-Summer seeding is not recommended. Spring seedings of all seed mixes with Legumes is recommended. However late summer seedings prior to September 1 can be made. The recommended seeding dates are April 1 through June 15 and August 15 through September 30.

5. Temporary treatments shall consist of a hay, straw or fiber mulch or protective covers such as a mat or fiber lining (Burlap, Jute, Fiberglass Netting, Excelsior Blankets). They shall be incorporated into the work as warranted or as ordered by the Director of Public Works. Jute or equivalent shall be installed where slopes exceed 3:1.

6. Hay or straw applications should be in the amount of 3000-4000 Lbs/Ac.

7. All haybales or temporary protection shall remain in place until an acceptable stand of grass or approved ground cover is established if needed. Temporary seeding can be implemented to minimize erosion. A temporary seeding guide must be included as a reference. The following species are recommended:

Species	Lbs/Acre	Lbs/1,000 Sq. Ft.	Seeding Dates
Annual Ryegrass	60	1.5	March 1-June 15 & Aug. 1 – October 1
Perennial Ryegrass	60	1.5	March 1 – June 15 & Aug. 1 – October 1
Sudan Grass	40	1.0	May 15 – August 15
Millet	40	1.0	May 15 – August 15
Winter Rye	100	2.5	August 15 – October 1

8. The normal acceptable seasonal seeding dates are April 1st thru October 15th.

9. All fill shall be thoroughly compacted upon placement in strict conformance with the Town of Richmond - "Subdivision / Land Development Regulations".

10. Stabilization of one form or another as described above shall be achieved as soon as possible after final grading.

11. Stockpiles of topsoil shall not be located near waterways or wetlands and associated buffers. They shall have side slopes no greater than 50% and stockpiles shall also be seeded and/or stabilized.

12. On both steep and long slopes considerations should be given to "Crimping" or "Tracking" to tack down mulch applications.

13. Reference the Sedimentation Control Program and Order of Procedure for proper coordination.

14. Any detention/ retention facilities and associated drainage components shall receive one final cleaning if needed once all construction is complete. Sediments shall be disposed of in a proper manner.

SEDIMENTATION CONTROL PROGRAM

1. Rip-Rap splash pads shall be installed at the outlets for all culverts discharging into a waterway or drainage swale.

2. Extreme care shall be exercised so as to prevent any unsuitable material from entering the wetlands.

3. All disturbed areas subject to erosive tendencies whether they are newly filled or excavated shall receive suitable slope protection.

4. During construction the contractor and/or developer shall be responsible for maintaining drainage and runoff flow during storms and periods of rainfall.

5. Care shall be taken so as to prevent any unsuitable material from entering either existing or proposed drainage structures.

6. Sedimentation control devices shall be inspected periodically after periods of rainfall. Such devices shall be repaired or replaced as needed.

7. Care shall be taken so as not to place " Removed Sediments" within the path of existing, newly created (both temporary and permanent) or proposed watercourses or those areas subject to storm water flow.

8. Additional haybales or silt fencing shall be located as conditions warrant or as directed by the engineer.

9. All sediments shall be removed from the detention basins (sediment traps and rip rap aprons, catch basins and swales on an annual basis or as needed.

10. Reference The " Rhode Island Erosion and Sediment Control Handbook" Prepared by the R.I.D.E.M. and the U.S. Dept. of Agriculture Soil Conservation Service, 1989, as a guide.

ORDER OF PROCEDURE

1. Immediately upon completion of the clearing and grubbing operation and prior to any rough grading , temporary haybales or silt fencing shall be placed outside the limits of construction as per the plans.(i.e. along new roadways, streambanks, critical areas, etc.)

2. All erosion and sedimentation control structures shall be periodically cleaned and maintained as per the respective programs throughout the construction process.

3. If work progress is to be interrupted at any time, reference Erosion Control and Sedimentation Programs for temporary control.

4. Temporary haybales and silt fencing along and at the end of roadways may be removed after final soil stabilization has been achieved and approved.

5. Haybales or silt fencing located at drainage outlets must remain until such time that a desirable stand of grass or ground cover has been established and the project receives a favorable approval for final acceptance from the Public Works Director.

6. Only those areas shown on the attached site plan , the limits of which are designated by the extend of the proposed contours are subject to the Erosion Control Measures specified above.

RIP RAP INSTALLATION AND MAINTENANCE REQUIREMENTS

1. The subgrade for the riprap shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density approximating that of surrounding undisturbed material . Brush, trees, stumps and other objectable material shall be removed.

2. Placement of riprap shall follow immediately after establishing the subgrade. The riprap shall be placed so that it produces a well graded mass of stone with a minimum of voids. The desired distribution of stones throughout the mass may be obtained by selective loading at the quarry, controlled dumping of successive loads during final placing, or by a combination of these methods. The riprap shall be placed to its full thickness in one operation and not in layers. The riprap shall not be placed by dumping into chutes or similar methods, which are likely to cause segregation of the various stone sizes. Care shall be taken not to dislodge the underlying material when placing the stones.

3. The finish slope shall be free of pockets of small stone or clusters of large stones and the final face of the riprap surface must be set at the specified angle of repose. Hand placing may be necessary to achieve the required grades and a good distribution of stone sizes the final thickness of the riprap blanket shall be within plus or minus ¼ of the specified thickness.

4. Once the riprap installation has been completed the final product shall be inspected monthly for a period of six (6) months following placement if repairs are needed they shall be accomplished immediately following said inspection.

GENERAL CONSTRUCTION NOTES:

PRESENT CONDITIONS

The proposed roadways are to be constructed in areas which presently consist of gentle to moderate slopes vegetated mainly by Oak and Black Pine.
The present slope ranges from 1% to 10%.

PROPOSED CONDITIONS

The proposed changes will entail the cutting of existing trees and the removal of existing topsoil and subsoil where applicable in the area of the proposed right of way. Cutting and filling will occur at various points along the proposed roadway. The proposed roadway will not exceed a slope of 2% at any point.

I. CLEARING & GRUBBING

This phase consists of cutting down trees, brush, etc. within the development area and the proper disposal of all unwanted debris.

II.

Rough grading, cuts, and fills, consists of the removal of the existing soil in the areas within the development to a depth sufficient to allow the proper thickness of gravel, processed gravel, and bituminous pavement per the Town of Richmond specifications. Also during this phase all detention basins and swales are to be rough graded. Excess material will be hauled offsite or stockpiled onsite and enclosed with silt fencing five feet from the base of the stockpile, in such a manner as to check sediments from washing downhill during rainstorms. All stockpile areas are to be located away from all wetland areas and associates buffers. All regarded slope areas along the shoulder of the proposed roadways are to have staked haybales or silt fencing at the toe of the slope. Within the drainage swales stone or baled hay check dams are to be installed. The staked haybales or silt fencing are to remain in place until the disturbed areas have properly germinated with the seed mixture specified in the Erosion Control & Soil Stabilization Program. Also, once construction of the roadway has begun a line of staked haybales is to be placed at the entrance of the subdivision after each working day until completion of the roads.

III. DRAINAGE INSTALLATION & MAINTENANCE

A. Structures

During this phase the proposed catch basins and drainage lines will be installed as laid out on the site drainage plan. As the catch basins are built and the gravel backfill is placed, staked haybales or silt fencing shall be placed around the perimeter of each basin to prevent the induction of silt into the structures during periods of rain. The construction of the drainage system will start at the proposed roadway. All connecting pipe sections and connections into the catch basins are to be sealed watertight. All pipe discharges are to have R-4 Rip-Rap following the flared section end. All catch basins are to be cleaned out annually by the Town of Richmond with all sediments and water properly of per the General Laws of the State of Rhode Island.

B. Swales

Installations:

Construct all swales where indicated removing all trees, brush, stumps, and other material not included in the design. Rills or holes in the path of the swale are to be filled and compacted as needed to prevent unequal settlement that will cause damage to the completed swale. Side slopes of all swales shall not exceed 3:1. Upon completion of grading plant with grass seed mix stipulated in the "Erosion Control & Stabilization Program", 4.A. Consideration should be given to the use of netting or seed blankets to provide proper erosion protection. Follow all application procedures outlined in the "Erosion Control & Stabilization Program."

Maintenance:

Swales are to be mowed at least once per growing season to prevent establishment of woody growth and other undesirable plants that inhibit proper performance. Grass vegetation should not be cut shorter than 4 inches. Bare spots and eroded areas within the swales must be reseeded immediately following inspections. Swales should be inspected on a semi-annual basis. All trash and other litter must be removed during inspections. Sediments are to be removed at least once per year. Accumulated sediments must be removed manually to prevent damage to the swales. Reseeding may be necessary after sediment removal operations, especially if excessive damage is done to vegetation. Upon acceptance of completed roadways the Town of Richmond will be responsible for all maintenance and proper disposal of sediments.

C. Drainage Basins

Infiltration:

Excavate and grade as required removing all trees, brush, stumps, large rock, etc. Where feasible light earth-moving equipment should be utilized to prevent compaction of soils beneath the basin floor or side slopes. The entire basin is to be stabilized with a grass seed mix stipulated in the Erosion Control & Soil Stabilization Program. This will require the addition of 4-6 inches of loam to promote good vegetative growth and infiltration. The basin floor should be graded as flat as possible (zero slope) to promote uniform ponding and exfiltration of runoff. Prior to seeding operations the basin floor is to be deeply tilled with a rotary tiller or disc harrow to promote infiltration in the surface layers. The maximum allowable slope leading to the basin floor is 3:1 to facilitate mowing. The impounding embankment is to have a minimum width of 3 feet with side slopes of 3:1. The embankment is to be constructed with a silty soil compacted with heavy machinery (eg roller) and loamed (4" compacted) and seeded as specified in the Erosion Control & Soil Stabilization Program. To prevent erosion, all inlets are to have properly sized rip-rap aprons followed by sediment traps constructed of 2 inch processed stone. The infiltration basin is to have an emergency spillway with the weir invert 1 foot below the top of embankment. The spillway is to have a width of 10 feet with a depth of 6 inches and sides sloped at 2:1. The spillway is to be lined with R-4 rip rap from the weir down to the outside toe of the embankment. The infiltration basin shall not receive runoff until the entire contributing watershed area has been stabilized with vegetation and other soil erosion and sediment control techniques.

Maintenance:

The basin should be inspected on an annual basis and any noted deficiencies, such as bare spots must be corrected immediately by reseeding. The basin must be mowed once per growing season, preferably after August 15. Trash and litter must be removed during mowing operations. Also, sediments collected within the sediment trap should be manually removed at this time. Mowing is required to prevent trees, brush, or woody plants from growing within or along the slopes of the basin. Over time the infiltration capacity of the basin may decrease requiring deep tilling of the floor every 10 years to restore the original infiltration rate. Tilling should be done when there is an obvious loss of infiltration. After tilling the basin floor must be reseeded immediately.

IV. PLACEMENT OF PROCESSED GRAVEL & PAVING

Following final grading, the roadway is to be paved per the Town of Richmond standards, Item J – General Construction Procedures and Construction Detail Figure 2, Typical Cross-Section, Local Road.

V. STABILIZATION OF SLOPES & NON-PAVED AREAS

All areas not paved or graveled shall be graded to the elevation of the site plan with topsoil spread at a minimum compacted depth of 4 inches. The slopes are to be seeded and covered with straw mulch to prevent erosion. Where the slope is 3:1 or greater jute netting is to be installed (Figure 5-1). Seeding is to be completed from April 1to June 15 and August 15 to October 15. See Erosion Control & Soil Stabilization Program for appropriate seed mixture.

VI. ENVIRONMENTAL EFFECTS

The existing surface water runoff is minimal due to existing ground vegetation, permeability of soils, and gentle to moderate slope of the area impacted. This will remain the same as the proper erosion control measures and drainage basins will be installed. Therefore, environmental impacts on slope stability, soil erosion, and water quality will be insignificant.

The runoff generated from the proposed roadways will be contained within the roadways through the construction of cape cod curbing along the edge of the roads and the installation of the permanent drainage facilities (catch basins, drainage swales, infiltration basins, concrete pipes, etc.). The runoff will be contained, dissipated absorbed and properly treated by the proposed drainage system.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

CONSTRUCTION ENTRANCE PROTECTION PAD

DESIGN CRITERIA

A. Aggregate Size Use ASTM C-33, size no. 2 or 3, or RIDOT 2" size crushed stone or gravel.

B. Entrance Dimensions

- Thickness – not less than four (4) inches.
- Width – 25 feet minimum
- Length – 50 feet minimum

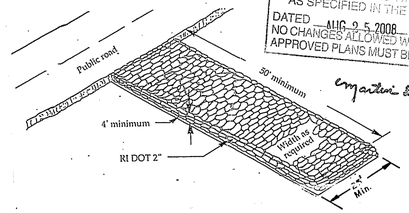
INSTALLATION REQUIREMENTS

The area of the entrance should be cleared of all vegetation, roots, and other objectionable material. The gravel shall be placed to the specified dimensions.

MAINTENANCE

The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-ways. This will require periodic top dressing with additional stone or additional length as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, or tracked onto public right-of-ways must be removed immediately.

CONSTRUCTION ENTRANCE PROTECTION PAD DETAIL (NTS)



STATE OF RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 2 5 2008 FILE # 07-0055
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Engineer D. Wenck

PRELIMINARY

EUGENE F. SPRIS No. 3166 REGISTERED PROFESSIONAL ENGINEER

RICHARD A. GREENE No. 1731 PROFESSIONAL LAND SURVEYOR

EROSION CONTROL NOTES & DETAILS CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

JUN 24 2008

ASSESSOR'S PLAT 3C, LOT 2
NEW LONDON TURNPIKE, BAKER PINES ROAD, AND CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: NOT TO SCALE DATE: DECEMBER 23, 2003
REVISED: FEB. 11, 2004, JUNE, 2004
AUGUST, 2005. MARCH 25, 2006
JAN., 2007.
FEB., 2007.
JUNE, 2008.

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RI 02812
TEL.: 401-364-9405
FAX: 401-364-9403

B. Filter Fences

1. Materials

a. Synthetic Filter Fabric Synthetic filter fabric should be a pervious sheet of propylene, nylon, polyester or ethylene filaments and should be certified by the manufacturer or supplier as conforming to the following requirements:

PHYSICAL PROPERTY	MINIMUM REQUIREMENTS
Filtering Efficiency	75%
Tensile Strength at 20% (Maximum) Elongation	*Extra Strength*- 50 lbs/linear inch *Standard Strength*- 30 lbs/linear inch
Flow Rate	0.3 gal/ft²/min

b. Non- synthetic Filter Fabric Requirements Burlap shall be 10 ounce per square yard fabric.

c. Filter Fabric Support Requirements Posts or stakes for fence fences should be of sufficient size and strength to support the fabric. Steel posts should have projections for fastening wire to them.

Wire fence reinforcement for silt fences using standard strength filter cloth should be a minimum of 36 inches in height, a minimum of 14 gauge and a maximum mesh spacing of 6 inches.

Some silt fences do not require a wire backing. Consult manufacturer's instructions for proper installation requirements.

2. Installation Requirements This sediment barrier utilizes burlap or standard strength or extra strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected. In special cases burlap may be used in drainageways.

a. The height of the barrier should not exceed 36 inches (higher barriers may impound volumes of water sufficient to cause failure of the structure). Ideally the filter fence should be placed 6 feet away from the toe of slope.

b. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 inch overlap, and securely sealed. See manufacturer's recommendations.

c. A trench should be excavated approximately 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier in accordance with manufacturer's recommendations.

d. Posts should be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, post spacing should be as manufacturer recommends.

e. When standard strength filter fabric is used, a wire mesh support fence should be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1 inch long, tie wires or hog rings. The wire should extend into the trench a minimum of 2 inches and should not extend more than 36 inches above the original ground surface.

f. The standard strength filter fabric should be stapled, wired or tied to the wire fence, and 8 inches of the fabric should be extended into the trench. The fabric should not extend more than 36 inches above the original ground surface. Filter fabric should not be stapled to existing trees.

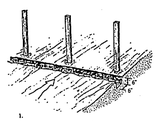
g. When extra strength filter fabric or burlap and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled, wired or tied directly to the posts with all other provisions of Item *f*, above, applying.

h. The trench should be backfilled and the soil compacted over the filter fabric (Figure 5-4).

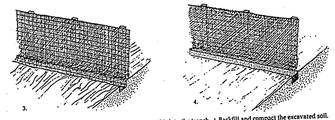
i. Filter barriers should be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

3. Maintenance

- Filter barriers should be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs should be made immediately.
- Should the fabric decompose or become ineffective prior to the end of the expected useful life and a barrier is still necessary to prevent sediment movement, the fabric should be replaced promptly.
- Sediment deposits should be removed when they reach approximately one-half the height of the barrier.
- Any sediment deposits remaining in place after the silt fence or filter barrier has been removed should be dressed to conform to the existing grade, prepared and seeded.



1. Set posts minimum depth of 12" and excavate a 6" x 6" trench upslope along the line of posts. 2. Staple wire fencing to the posts.



3. Attach the filter fabric to the wire fence and extend it into the trench. 4. Backfill and compact the excavated soil.

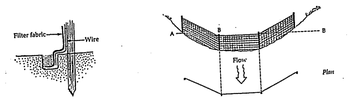
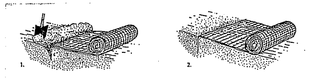
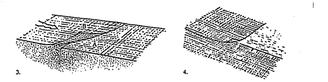


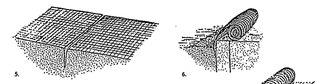
Figure 5-4 Placement and Construction of a Synthetic Filter Barrier
Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut



1. Bury the top end of the jute strips in a trench 6 inches or more in depth. 2. Tamp the trench full of soil. Secure with row of staples, 6 inch spacing, 4 inches down from the trench.



Overlap—3. Bury upper end of lower strip (A). Overlap end of top strip (B) 4 inches and staple. 4. Where two or more strip widths are required, overlap jute strips 4 inches and staple on 18 inch centers. Staple outside edge on 2 foot centers.



Erosion stop—5. Fold of jute buried in slit trench and tamped; double row of staples.
Anchoring ends at structures—6. Place the end of the net in a 6 inch slot on the up-channel side of the structure. Fill the trench and tamp firmly.
7. Roll the net up the channel. Place staples at 12 inch intervals along the anchor of the net.

Figure 5-5 Detail for Installation of Jute Netting
Adapted from: Connecticut Guidelines for Soil Erosion and Sediment Control, Connecticut Council on Soil and Water Conservation, 1985

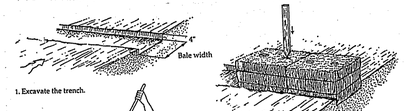


Figure 5-3 Placement and Construction of a Straw Bale Barrier
Adapted from: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut

Section G · CHECK DAMS (CD)

DEFINITION

Small, normally temporary dams constructed across a waterway or other watercourse. The term "temporary" means that the structure will be in place only as long as needed but shall be removed prior to completion of construction.

PURPOSE

To reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch. This practice also traps small amounts of sediment generated in the ditch itself. However, this is not a sediment trapping practice and should not be used as such.

APPLICABILITY

This practice is limited to use in small open channels which drain 10 acres or less. Some specific applications include:

a. Temporary ditches or swales which, because of their short length of service, cannot receive a non-erodible lining but still need some protection to reduce erosion.

b. Permanent ditches or swales which for some reason cannot receive a permanent non-erodible lining for an extended period of time.

c. Either temporary or permanent ditches or swales which need protection during the establishment of grass linings.

d. Use of check dams in streams should be avoided unless check dams are the only feasible solution. Under no condition should straw bale check dams be used in streams.

e. Only stone check dams should be considered for permanent applications.

PLANNING CONSIDERATIONS

Check dams can be constructed of straw bales, stone or logs. Log check dams are the most economical from the standpoint of material costs, since logs can usually be salvaged from clearing operations. However, log check dams require more time and hand labor to install. Stone for check dams, on the other hand, must generally be purchased. However, this cost is offset somewhat by the ease of installation.

If stone check dams are used in grass lined channels which will be mowed, care should be taken to remove all the stone from the dam when the dam is removed. This should include any stone which has washed downstream.

Since log check dams are embedded in the soil, their removal will result in more disturbance of the soil than will removal of stone check dams. Consequently, extra care should be taken to stabilize the area when log dams are used in permanent ditches or swales.

Straw bale check dams should not be used when the anticipated need for a check dam exceeds 90 days.

DESIGN CRITERIA

No formal design is required for a check dam; however, the following criteria should be adhered to when specifying check dams.

The drainage area of the ditch or swale being protected should not exceed 10 acres. The maximum height of the check dam should be 2 feet. The center of the check dam must be at least 6 inches lower than the outer edges. The cross-sections of the dams should be as shown in Figure 5-5. The maximum spacing between the dams should be such that the toe at the upstream dam is at the same elevation as the top of the downstream dam. (See Figure 5-6)

A. Stone Check Dams Stone check dams should be constructed of RI DOT crushed stone. The stone should be placed according to the configuration in Figure 5-5. Hand or mechanical placement will be necessary to achieve complete coverage of the ditch or swale and to insure that the center of the dam is lower than the edges. Only stone check dams should be considered for permanent applications.

B. Log Check Dams Log check dams should be constructed of 4 to 6 inch logs salvaged from clearing operations on site, if possible. The logs should be embedded into the soil at least 18 inches. (See Figure 5-5) The 6 inch lower height required at the center can be achieved either by careful placement of the logs or by cutting the logs after they are in place.

C. Straw Bale Check Dams Bales should be placed in a single row, lengthwise, oriented perpendicular to the contour, with ends of adjacent bales tightly abutting one another (Figure 5-7).

The remaining steps for installing a bale barrier for sheet flow applications as described in the Perimeter Sediment Barrier measure apply here, with the following addition.

The barrier should be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment laden runoff will flow either through or over the barrier but not around it.

D. Log and Hay Check Dams Log and hay check dams should be constructed in accordance with Rhode Island Department of Transportation, Division of Public Works, Standard Detail No. 9.4. (See Figure 5-8)

SEDIMENT REMOVAL

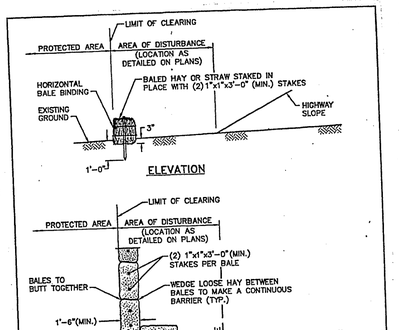
While this practice is not intended to be used primarily for sediment trapping, some sediment will accumulate behind the check dams. Sediment should be removed from behind the check dams when it has accumulated to one-half of the original height of the dam. Trapping efficiencies at check dams are significantly reduced if accumulated sediment is not removed.

CHECK DAM REMOVAL

Check dams must be removed when their useful life has been completed. In temporary ditches and swales, check dams should be removed and the ditch filled in when it is no longer needed. In permanent structures, check dams should be removed when a permanent lining can be installed. In the case of grassed waterways, check dams should be removed when the grass has matured sufficiently to prevent erosion. The area beneath the check dams should be seeded and mulched immediately after they are removed.

MAINTENANCE

Temporary check dams shall be maintained in proper working condition by the contractor as long as the structure is in place. Maintenance of permanent stone check dams is the responsibility of the contractor until construction is completed or until maintenance responsibility is accepted by the owner. The owner is responsible thereafter.



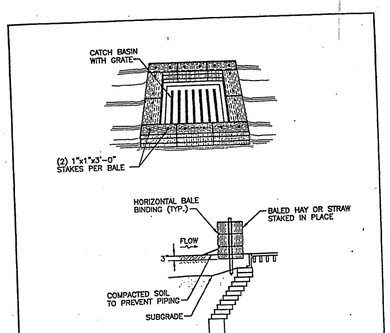
REVISIONS		
NO.	BY	DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BALED HAY EROSION CHECK

JUNE 15, 1998 (ISSUE DATE)

R.I. STANDARD 9.1.0



REVISIONS		
NO.	BY	DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BALED HAY CATCH BASIN INLET PROTECTION

JUNE 15, 1998 (ISSUE DATE)

R.I. STANDARD 9.8.0

Figure 5-9 Straw Bale Drop Inlet Protection
Adapted from: Virginia Erosion and Sediment Control Handbook, Virginia Soil and Water Conservation Commission, 1980

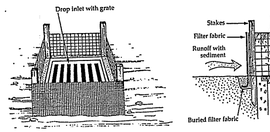
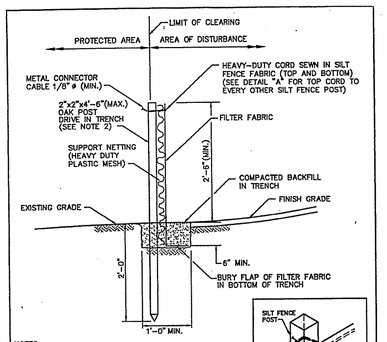


Figure 5-10 Filter Fabric Drop Inlet Protection
Adapted from: Connecticut Guidelines for Soil Erosion and Sediment Control, Connecticut Council on Soil and Water Conservation, 1985



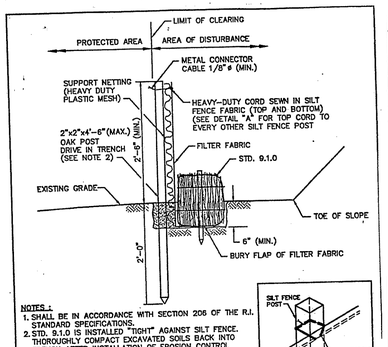
REVISIONS		
NO.	BY	DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

SILT FENCE DETAIL

JUNE 15, 1998 (ISSUE DATE)

R.I. STANDARD 9.2.0



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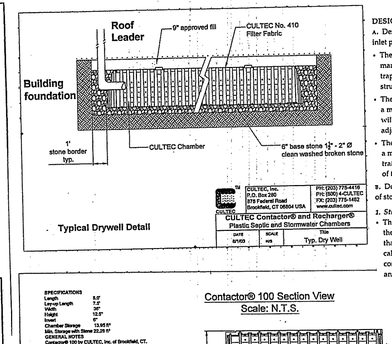
NO.	BY	DATE

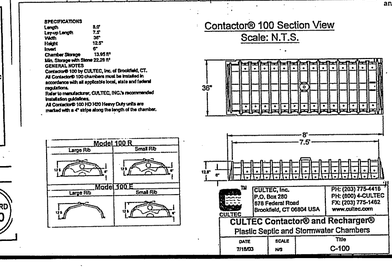
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

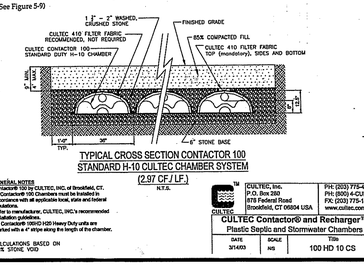
BALED HAY EROSION CHECK AND SILT FENCE COMBINED

JUNE 15, 1998 (ISSUE DATE)

R.I. STANDARD 9.3.0







DESIGN CRITERIA

A. Design criteria applicable to all types of storm drain inlet protection are as follows:

- The inlet protection device shall be constructed in a manner that will facilitate cleanout and disposal of trapped sediment and minimize interference with construction activities.
- The inlet protection device shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.
- The inlet protection device shall be constructed in such a manner that a traffic hazard will not be created and traffic will not destroy or cause constant maintenance of the device.

B. Design criteria and applications for the various types of storm drain inlet protection are as described below.

1. Straw Bale Drop Inlet Protection

- This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5 percent) where sheet or overland flows are typical. The method shall not apply to inlets receiving concentrated flows, such as in street or highway medians. (See Figure 5-9)
- Bales shall be either wire-bound or string-tied with the bindings oriented around the sides rather than over and under the bales.
- Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together.
- The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of a bale to a minimum depth of 4 inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.

2. Filter Fabric Drop Inlet Protection

- This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5 percent) where sheet or overland flows are typical. The method shall not apply to inlets receiving concentrated flows, such as in street or highway medians. (See Figure 5-10)
- Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene filaments and shall be certified by the manufacturer or supplier as conforming to the following requirements:

PHYSICAL PROPERTY	MINIMUM REQUIREMENTS
Filtering Efficiency	75%
Tensile Strength at 20% (Maximum) Elongation	*Extra Strength*- 50 lbs/linear inch *Standard Strength*- 30 lbs/linear inch
Flow Rate	0.3 gal/ft²/min

- Stakes shall be 2 x 4 inch construction grade lumber at least 3 feet long. Metal posts of equivalent strength may be substituted. Stakes shall extend at least 1 foot below grade.
- When standard strength filter fabric is used the fabric shall be reinforced by wire fence. The wire fence shall be a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches. The wire fence shall extend to the full height of the filter fabric.
- A trench shall be excavated approximately 6 inches wide and 6 inches deep around the outside perimeter of the stakes. The filter fabric and wire fence shall extend at least 6 inches into the trench. After the fabric and wire fence are fastened to the stakes the trench should be backfilled to original grade and soil compacted over the filter fabric and wire fence.
- The filter fabric and wire fence shall be securely fastened to the stakes using heavy duty wire staples at least 1 inch long. Ends of the filter fabric must meet at a stake, be overlapped, folded and stapled to the stake.
- The filter fabric shall extend to a height at least 12 inches above the top of the inlet grate, but shall not exceed 3 feet in height.

3. Block and Stone Drop Inlet Protection

- This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure.
- Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4-inch, 8-inch and 12-inch wide blocks. The barrier of blocks shall be at least 12 inches high and no greater than 24 inches high.
- Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Hardware cloth or comparable wire mesh with 1/2-inch openings shall be used.
- Stone shall be piled against the wire to the top of the block barrier as shown in Figure 5-11.
- The stone shall be RI DOT crushed stone.
- If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned, and replaced.
- A 2-inch by 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks as illustrated in Figure 5-12.
- Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Hardware cloth or comparable wire mesh with 1/2-inch openings shall be used.
- Stone shall be piled against the wire to the top of the block barrier as shown in Figure 5-11.
- The stone shall be RI DOT crushed stone.
- If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned, and replaced.

4. Block and Stone Curb Inlet Protection

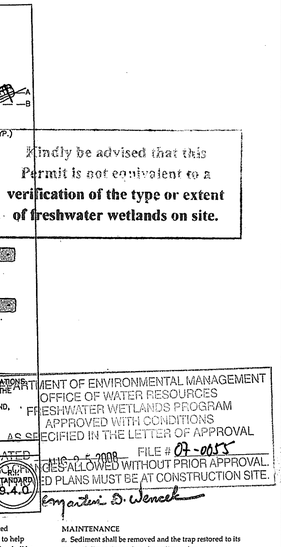
- This method of inlet protection is applicable at curb inlets where an overflow capability is necessary to prevent excessive ponding in front of the structure.
- Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening, as shown in Figure 5-12.

MAINTENANCE

a. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

b. Structures shall be removed and the area stabilized when the contributing drainage area has been properly stabilized.

c. The contractor is responsible for maintaining the structure in proper working condition as long as it is in place.



REVISIONS		
NO.	BY	DATE

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

BALED HAY DITCH AND SWALE EROSION CHECK

JUNE 15, 1998 (ISSUE DATE)

R.I. STANDARD 9.4.0

Kindly be advised that this Permit is not equivalent to a **verification of the type or extent of freshwater wetlands on site.**

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 25 2008 FILE # 08-0053
CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.
Jonpatten D. Wenck

RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

EUGENE F. SPRING
No. 3166
REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY

EROSION CONTROL NOTES & DETAILS CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

JUN 24 2008

ASSESSOR'S PLAT 3C, LOT 2
NEW LONDON TURNPIKE, BAKER PINES ROAD, AND CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: NOT TO SCALE DATE: DECEMBER 23, 2003
REVISED: FEB. 11, 2004, JUNE, 2004
AUGUST, 2005. MARCH 25, 2006
JAN., 2007.
FEB., 2007.
JUNE, 2008

RICHARD A. GREENE & ASSOCIATES, INC.
220 RICHMOND TOWNHOUSE ROAD
CAROLINA, RI 02812
TEL.: 401-364-9405
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SHEET 9 OF 10

F3 D1 #14

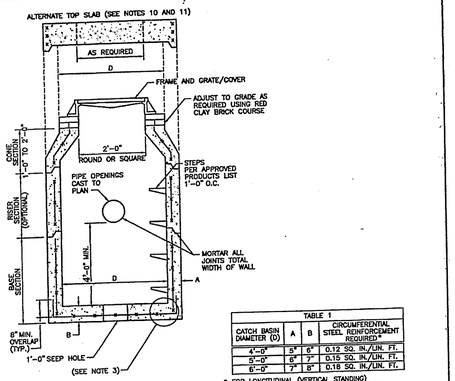


TABLE 1			
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED *
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
5. ONE POUR MONOLITHIC BASE SECTION.
6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
7. CORBEL, MADE OF RED CLAY BRICK WILL BE PERMITTED FOR THE "CONE SECTION" OF THE 4'-0"CATCH BASIN ONLY.
8. FOR CATCH BASIN TYPES "D" AND "F" STEPS MUST BE INSTALLED ON THE CURB SIDE OF THE STRUCTURE.
9. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
10. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
11. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
12. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

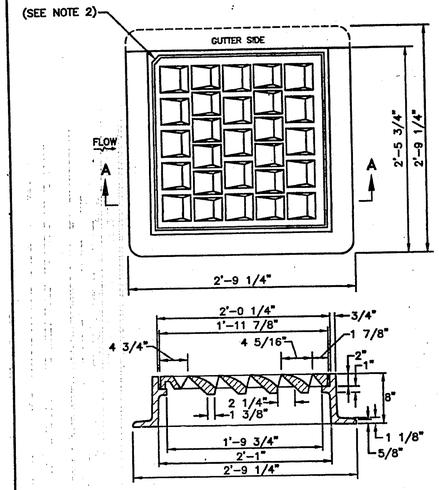
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 4.4.0



SECTION A-A

NOTES:
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS CORNER LEFT FOR "LEFT" GRATE, DIAGONALLY OPPOSITE CORNER FOR "RIGHT" GRATE TO FIT IN KEYED FRAME.

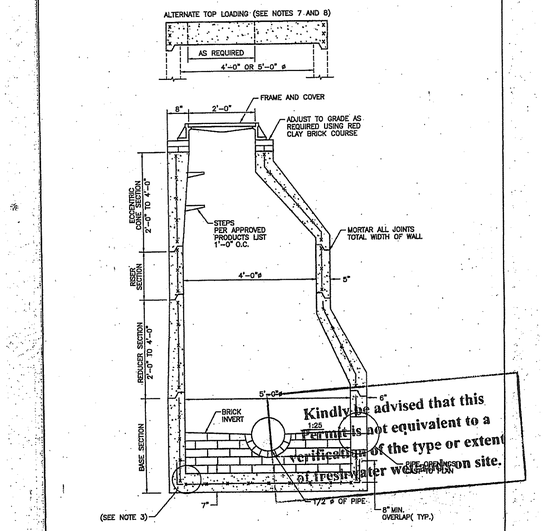
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 6.3.4



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.15 SQ. IN./LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
6. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
7. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.0).
8. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
9. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

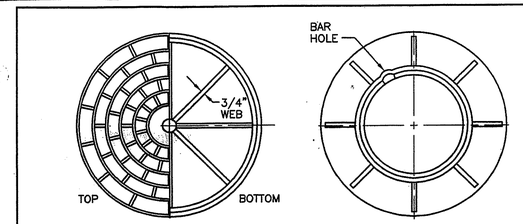
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

PRECAST 5'-0" ROUND MANHOLE

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 4.2.1



FRAME SECTION

NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.

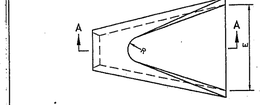
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

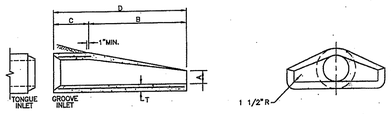
REVISIONS NO.	BY	DATE

HEAVY-DUTY ROUND FRAME AND COVER

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 6.2.1





SECTION A-A

END ELEVATION

DIMENSIONS								REINFORCEMENT
DIA.	A	B	C	D	E	R	T	ONE LAYER REINFORCEMENT IN BOTH OF WALL MIN. AREA OF EACH WAY (SQ. IN./FT.)
1'-0"	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	9"	7"	0.048
1'-3"	6"	2'-3"	3'-10"	6'-1"	2'-6"	11"	2 1/4"	0.054
1'-6"	6"	2'-3"	3'-10"	6'-1"	3'-0"	12"	2 1/2"	0.060
2'-0"	9 1/2"	3'-3 1/2"	3'-8"	6'-1 1/2"	4'-0"	1'-2"	3"	0.072
2'-6"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	1'-3"	3 1/2"	0.084
3'-0"	1'-3"	5'-3"	2'-10 3/4"	6'-1 3/4"	6'-0"	1'-8"	4"	0.096
3'-6"	1'-6"	5'-3"	2'-11"	8'-2"	6'-6"	1'-10"	4 1/2"	0.108
4'-0"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	1'-10"	5"	0.120
4'-6"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	2'-0"	5 1/2"	0.132
5'-0"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	2'-0"	6"	0.144

NOTE: SHALL BE IN ACCORDANCE WITH SECTION 701 OF THE R.I. STANDARD SPECIFICATIONS.

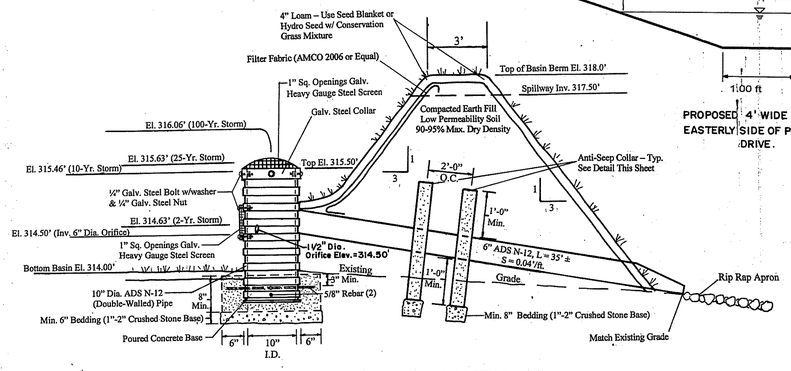
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

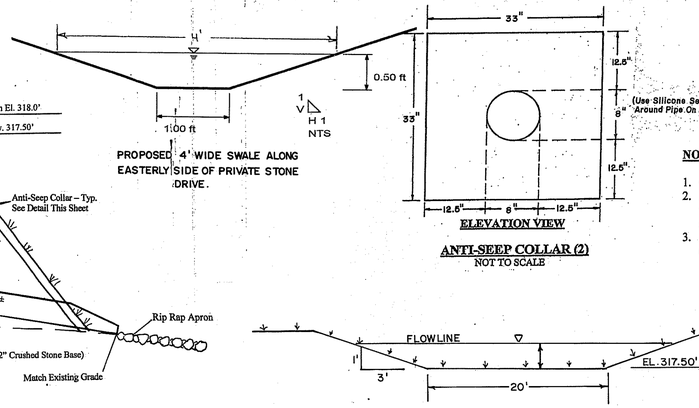
PRECAST CONCRETE FLARED END SECTION

JUNE 15, 1998 ISSUE DATE

R.I. STANDARD 2.3.0



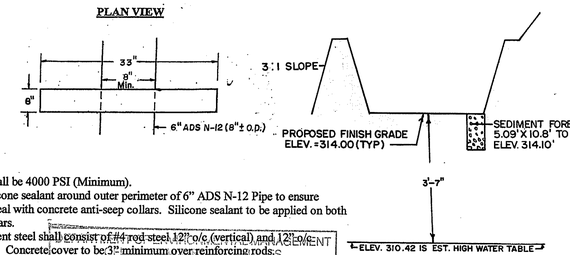
10 " DIA. WEIR & ORIFICE OUTLET CONTROL FOR DETENTION/RETENTION BASIN "A"
NOT TO SCALE



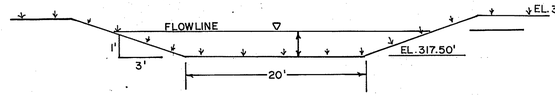
PROPOSED 4' WIDE SWALE ALONG EASTERLY SIDE OF PRIVATE STONE DRIVE.

ELEVATION VIEW

ANTI-SEEP COLLAR (2)
NOT TO SCALE



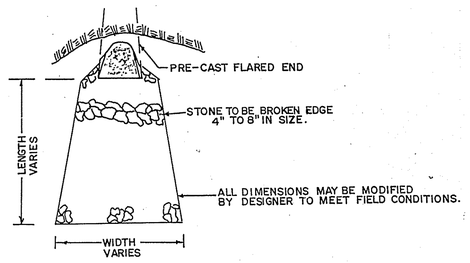
NOTES:
1. Concrete shall be 4000 PSI (Minimum).
2. Apply a silicone sealant around outer perimeter of 6" ADS N-12 Pipe to ensure watertight seal with concrete anti-seep collars. Silicone sealant to be applied on both sides of collars.
3. Reinforcement steel shall consist of #4 rod steel 12" o/c (vertical) and 12" o/c (horizontal). Concrete cover to be 3" minimum over reinforcing rods.



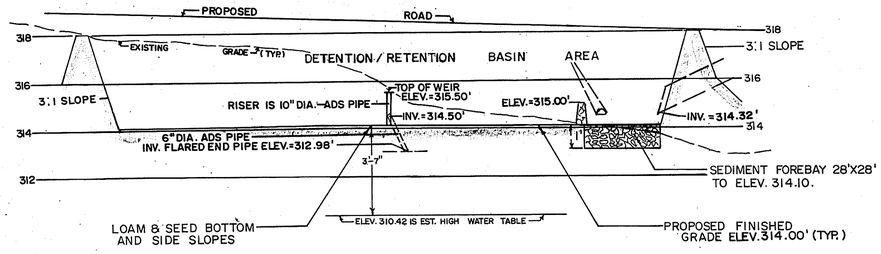
EMERGENCY SPILLWAY SECTION
NOT TO SCALE

EUGENE F. SPRING
No. 3106
REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY



OUTFALL RIP-RAP DETAIL



DETENTION/RETENTION BASIN SECTION A-A

SCALE: HORIZ. 1"=30'
VERT. 1"=3'

RICHARD A. GREENE
No. 1731
PROFESSIONAL LAND SURVEYOR

EROSION CONTROL NOTES & DETAILS CONSERVATION DEVELOPMENT PLAN

PREPARED FOR

SCHOFIELD ESTATES SECTION III

ASSESSOR'S PLAT 3C, LOT 2
NEW LONDON TURNPIKE, BAKER PINES ROAD, AND CAROLINA NOOSENECK ROAD
RICHMOND, RHODE ISLAND

SCALE: NOT TO SCALE DATE: DECEMBER 23, 2003
REVISED: FEB. 11, 2004, JUNE, 2004 AUGUST, 2005 MARCH 25, 2006 JAN., 2007. FEB., 2007. JUNE, 2008.

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SHEET 10 OF 10

JUN 24 2008

F3 D1 #14