Approved Action by Administrator of the Town of Richmond, Vermont on the _____day of _____, 2021.
Subject to all Requirements and Conditions of Permit Number _____.
Signed this _____day of _____, 2021,
By:_____
Richmond Zoning Administrator

N/F
Scott & Susan
Empire

5/8" iron rod found 18" above grade

N/F
Brenda & Paul Leible
Vol. 223 Pg. 632
3/26/2014

N02°40'05"E
548.38'

N/F
Julia Osborne
Vol. 181 Pg. 287
12/28/2007

3/4" capped rebar found 12" above grade, LLS #6.39

186.86'
N86°04'36"W

5/8" iron rod found 26" above grade

5/8" iron rod found 12" above grade

5/8" iron rod found 12" above grade

39.62'
S4°12'44"E
39.92'

Shed
Existing Residence
Shed
Septic Area
Gravel Drive

82.37'
S17°09'57"W

3/4" capped rebar found flush, LLS #6.39

S73°19'23"E
197.05'

S73°18'32"E
119.44'

Existing gravel agricultural / woods road

N/F
Colin Green &
Carene Campbell

Existing Residence
Gravel Drive

490.66'
S85°54'55"W

Existing agricultural / woods road

NEW LOT 6
Remaining Lands of
Peggy M. Farr
Revocable Trust
Area = 193.0 ± Acres

NEW LOT 4
Area = 6.3 Acres

NEW LOT 5
Area = 9.1 Acres

NEW LOT 6
Remaining Lands of
Peggy M. Farr
Revocable Trust
Area = 193.0 ± Acres

601.45'
S68°53'38"W

N02°19'57"E
1126.17'

348.91'
N20°35'57"W

Proposed Wastewater Easement Area located on Lot 3 for the benefit of Lots 1 & 2 for wastewater system installation, maintenance and access. Area = 0.85 acres.

Proposed 20' wide Wastewater Easement located on Lot 6 for the benefit of Lots 1, 2, & 3 for forcemain installation, maintenance and access.

N20°09'21"E
368.49'

S51°32'09"W
60.11'

N42°12'24"W
60.00'

S32°50'02"E
78.51'

N20°09'21"W
79.49'

112.94'
S47°47'39"W

S47°47'39"E
101.01'

Proposed 60' Access & Utility Right of Way to benefit Lots 1, 2, 3, 4, 5 & 6 for egress and ingress as well as installation and maintenance of force mains in common trench.

147.18'
S39°14'20"W

N57°51'04"E
146.81'

84.08'
S47°20'01"W

New 20' wide gravel road with 2' shoulders

45.98'
S37°10'58"W

L47°20'01"E
94.08'

30' building setback

Proposed building envelope

N39°27'06"E
20.73'

146.70'
N59°16'17"W

N59°16'17"W
14.68'

1/2" iron pipe found 15" above grade

Proposed ROW
Area = 1.46 Acres

70.23'
S49°36'39"W

73.07'
S39°11'15"W

N52°29'25"E
27.78'

N/F
Rochel Atkins
Volume 102 Page 364
June 27, 1997

Existing Residence

Approximate Existing Wastewater area

1/2" rebar found 6" above grade

N/F
Bruce Remlin

Existing waterline easement, mutual 15ft easement centered on the existing waterline, to be reserved by Peggy M. Farr Trust for the benefit of Doug Mobbs, New Lot (2082 Kenyon Road) and Existing Lot Reginald Mobbs et. als (2 East Hill Road) to access, maintain or replace the existing waterlines and drilled bedrock well

N/F
Casey Kiernan
Shannon Dufour-Martinez

East Hill Road (49.5' right of way)

Foy's Corner

Hinesburg Road

Kenyon Road (49.5' right of way)

N/F
Steven & Mary Quiet

N/F
Reginald Mobbs
et al
Volume 132 Page 159
August 22, 2002

1 1/2" iron pipe found 12" above grade

N/F
Frank &
Colleen Decker
Volume 53 Page 304
July 22, 1986

10' easement for the benefit of Waitsfield-Fayston Telephone Co., Inc. recorded in Volume 208, Page 559 of the Richmond Land Records. Easement to run from pole R142 to Kenyon Road under existing Vermont Electric Cooperative, Inc. easement.

5/8" rebar found 24" above grade, leaning

to 1" iron pipe found 24" above grade

700.00'
N28°52'01"E

A Series Wetland A1-A22

B Series Wetland B1-B10

C Series Wetland C1-C72

D Series Wetland D1-D28

Wetland buffer

NEW LOT 3
Area = 6.4 Acres

NEW LOT 2
Area = 2.4 Acres

NEW LOT 1
Area = 2.2 Acres

Vermont Electric Cooperative Inc (VEC) easement described in Volume 27, Page 17, to width stated in deed. 50' easement depicted for the benefit of VEC found on Map Slide 106 located on the south side of East Hill Road.

S20°30'49"E
371.25'

S75°41'47"E
286.77'

N54°34'59"E
50.74'

N78°21'00"E
42.13'

N15°57'31"E
64.17'

N49°59'50"E
58.62'

S59°29'22"E
42.13'

S76°58'24"E
64.59'

3/4" capped rebar found 6" above grade, LLS #6.39

3/4" capped rebar found 6" above grade, LLS #6.39

N/F
Doug Mobbs
Volume 240 Page 534
June 8, 2017

N/F
Deborah Mobbs

N45°30'01"E
50.76'

N69°36'07"E
70.81'

N69°36'07"E
62.41'

1 1/2" iron pipe found 24" above grade

3/4" capped rebar found flush, LLS #6.39

1/2" rebar found 18" above grade, leaning

3/4" capped rebar found flush, LLS #6.39

Approximate Existing Wastewater Disposal Area

Approximate Existing Wastewater Disposal Area

Fr. Well Cover

Shed

Existing Residence

Gravel Drive

Approximate location of Existing Wastewater Disposal Area, serving 2082 Kenyon Road

Existing Residence

Gravel Drive

Shed

S84°08'12"E
182.53'

L=310.6'
R=1407.60'

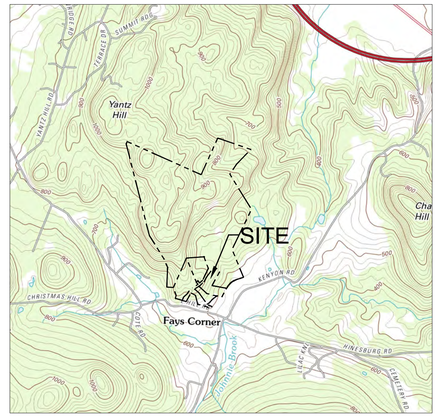
S29°00'19"W
80.01'

N28°52'01"E
84.91'

N28°52'01"E
180.69'

412.13'
N79°10'49"W

Location Map
Scale: 1" = 2000'



Map References

1. *Plan entitled "Portion of the Harold Fletcher Lands Richmond, Vermont – Survey Plat" prepared by Lamoureux Consulting Engineer and Surveyor, dated Dec. 23, 1985, Map Slide 46.*
2. *Plan entitled "Survey of Randall Farm – 5 Lot Subdivision" prepared by Charles Grenier, Consulting Engineer, P.C., with revision date of September 2001, Map Slide 106.*
3. *Plan entitled "Property Survey for Peg Farr – Richmond, Vermont" prepared by Henry J. Swider, dated Aug. 2, 1985, Map Slide 48.*
4. *Plan entitled "Doug Mobbs "New Lot" Randall Farm" prepared by Krebs and Lansing Consulting Engineers, Inc., dated Feb. 17, 2017,*

Boundary Notes

1. *The descriptions controlling the locations of the boundaries of the land surveyed and the physical evidence located and existing on the ground were compared and analyzed to provide boundary locations that are most indicative of the original intent of the deeds and in harmony with existing monumentation. Where conflicts between physical evidence and written evidence are substantial, deeds and/or documents should be or will be executed to eliminate any color of title or conflict.*
2. *This plat of survey depicts boundary location of the lands under the title of Peggy M. Farr Revocable Trust and also the limits, where known, of easements, licenses and/or other servitudes and rights that may encumber or benefit the surveyed premises with the exception of utility easements.*
3. *Monuments have been set in and on the ground where shown on the plat of survey where, in the opinion of the surveyor, it was necessary to perpetuate a corner not otherwise monumented. Monuments shown as "to be set" will be set at the title holder's direction.*
4. *Any boundary line location, based on deeds or documents recorded in the public records by which title or rights were conveyed to Peggy M. Farr Revocable Trust, or title or rights in lands of Peggy M. Farr Revocable Trust were otherwise delineated, is subject to accuracy and legality of those deeds or documents. Where those deeds or documents are improperly executed as a matter of law or contain errors or omissions in fact, or contain or are based upon erroneous conclusions of law, then the depicted boundary locations may not be valid.*
5. *The boundary line locations shown are also subject to accuracy and legality or lack of authority of any grantor or grantee who professed the right or ability to convey, receive or condemn property or rights in the surveyed property.*
6. *Any depiction on the plats of survey of boundary lines or other structures, exclusive of boundary lines for Peggy M. Farr Revocable Trust were located by tachometry. The location and depiction of boundary lines other than those of Peggy M. Farr Revocable Trust are not warranted and all boundary lines depicted are subject to the accuracy and completeness of the public record.*
7. *This plat of survey is for the sole use of Peggy M. Farr Revocable Trust. Use by other property owners, private or municipal, is specifically unauthorized.*

Legend

- Iron pipe or pin found
- Calculated point
- Proposed property line
- Approximate property line
- Existing utility pole/overhead line
- Existing easement
- Existing Wetland (delineation by Gilman & Briggs Environmental, see note 3)
- Existing 50ft wetland buffer
- Existing stonewall
- Edge of woods/cluster
- Drainage
- New Sewer Forcemain
- New Water Service
- Proposed building setbacks
- Proposed 60' Right of Way
- Proposed Wastewater Easement Area

Notes:

1. *Portion of parcel was depicted in administrative subdivision prepared by Krebs and Lansing Consulting Engineers Inc. and recorded in the Richmond land records. Remaining parcel outline references tax map downloaded from VCGI and physical evidence observed in the field.*
2. *Topographic information shown on plan was developed by Krebs and Lansing Consulting Engineers Inc. Topographical survey completed on December 16 & 17, 2019.*
3. *Wetlands delineation shown on plan was completed by Gilman and Briggs Environmental on November 5, 2019. The areas delineated were characterized as Class II wetland according to the Vermont Wetland Rules last revised April 1, 2017. The location of the wetland flags was completed by Krebs and Lansing Consulting Engineers Inc. on November 6, 2019 and December 16 & 17, 2019.*
4. *This plan may be copied to the extent necessary to comply with Vermont State Laws pertaining to accessibility to public records. Use of these plans for construction purposes requires the permission of Krebs & Lansing Consulting Engineers.*

Owner/ Applicant

Peggy M. Farr Revocable Trust
112 Huntington Road
Richmond, VT 05477
Parcel ID: EH0180

Zoning Information:

Agricultural / Residential District

Single Family Dwelling	Allowable Use
Minimum lot size	1.0 Acre
Minimum frontage	100 feet
Max lot coverage	30%
Max structure height	35ft
Rear yard set back	20 feet
Side yard set back	20 feet
Front yard set back	30 feet or 55ft from pavement center line

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

Certification

This survey is based on physical evidence found in the field and information abstracted from deeds and other pertinent records and this survey is consistent with that evidence. This plat conforms to 27 V.S.A. section 1403.

STATE OF VERMONT
IAN A. JEWKES No. 6.39
REGISTERED LAND SURVEYOR

Ian A. Jewkes, L.L.S. #6.39

0' 80' 160' 240'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 80')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

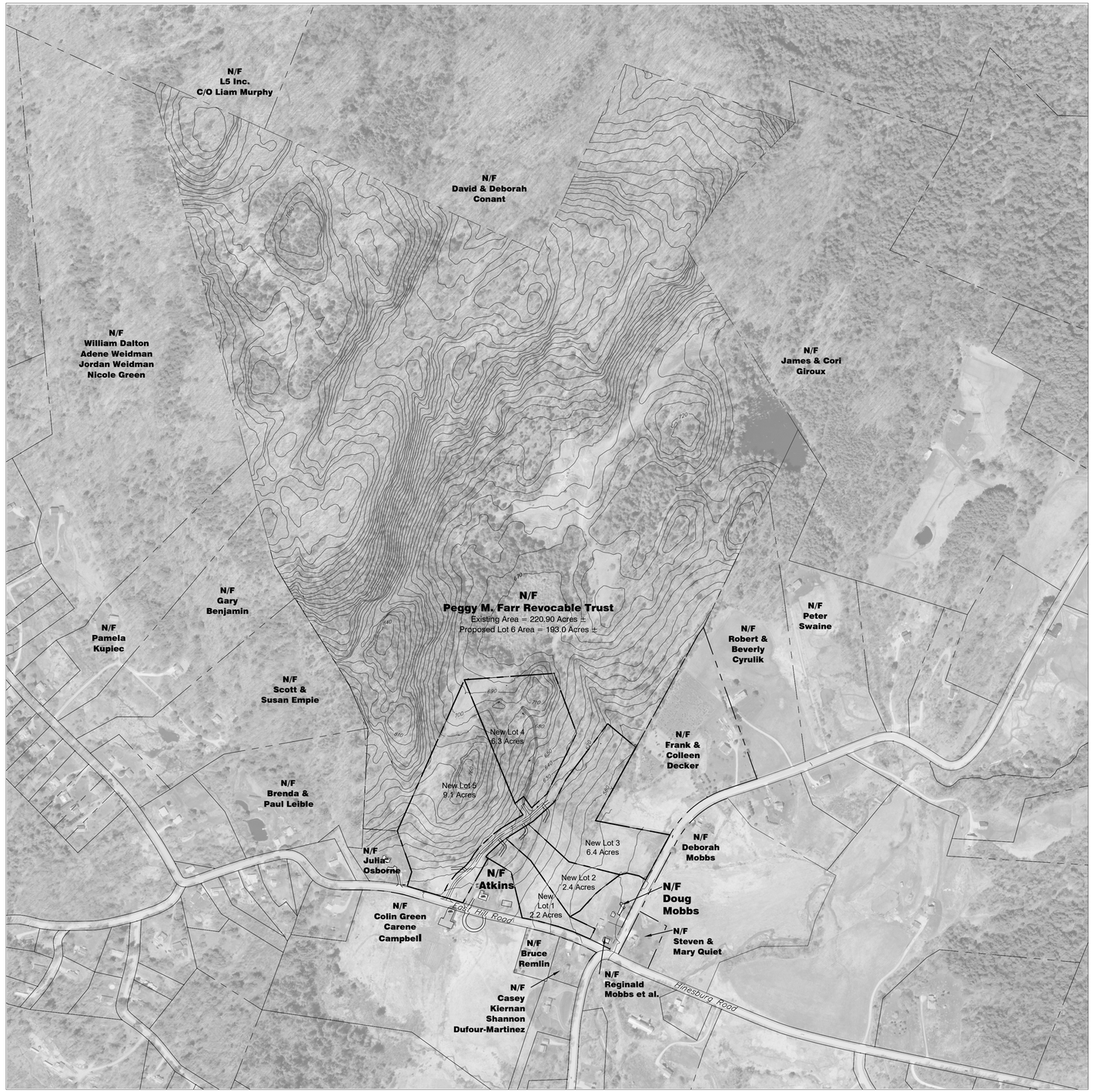
PROPOSED 6 LOT SUBDIVISION

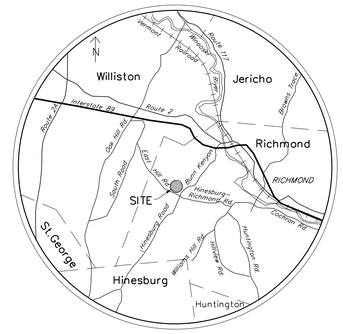
LANDS OF
PEGGY M. FARR
REVOCABLE TRUST
Parcel ID: EH0180

Preliminary Plat

REV. NO.	REVISIONS/COMMENTS	DATE

DATE of Issue: 3/19/2021
Drawn by: SWH/JAR Checked by:
Project No.: 19327 Scale: 1" = 80'
Drawing No.: B-1 Rev No.:





Location Map

N. T. S.

Notes:

1. This plan is not a boundary survey. Portion of parcel was depicted in administrative subdivision prepared by Krebs and Lansing Consulting Engineers Inc. and recorded in the Richmond land records. Remaining parcel outline references tax map downloaded from VCGI and physical evidence observed in the field.
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3. Wetlands delineation shown on plan was completed by Gilman and Briggs Environmental on November 5, 2019. The areas delineated were characterized as Class II wetland according to the Vermont Wetland Rules last revised April 1, 2017. The location of the wetland flags was completed by Krebs and Lansing Consulting Engineers Inc. on November 6, 2019 and December 16 & 17, 2019.
4. This plan may be copied to the extent necessary to comply with Vermont State Laws pertaining to accessibility to public records. Use of these plans for construction purposes requires the permission of Krebs & Lansing Consulting Engineers.
5. Large animal habitat, imagery, and LIDAR information downloaded from the Vermont Center for Geographic Information (VCGI).

Legend

- Survey control point
- Soil test hole
- Utility pole
- ohu — Overhead utility line
- TBM #1 — Temporary bench mark
- Approximate property line
- Proposed property line
- Edge of woods/cluster
- Drainage

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

STAMP:

N

Vertical Datum: United States Datum (USD)
Horizontal Datum: NAD 83 NVCS (2011)

0' 300' 600' 900'
Bar Scale 1" = 300'

Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	1"=300'
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

Revisions

No.	Date	Description

Drawing Title

Overall Parcel Plan

Drawing No.

C-2.0

19327/dwgs/SP-Farr.dwg

Lot 4 - For a 4 Bedroom SFR 490 GPD with accessory apartment 140 GPD In-Ground Trench Style Primary Wastewater System. Use (3) 4' wide 66' long with 12" of Stone Underneath Distribution Pipe

Lot 5 - For a 4 Bedroom SFR 490 GPD with accessory apartment 140 GPD In-Ground Trench Style Primary Wastewater System. Use (3) 4' wide 66' long with 12" of Stone Underneath Distribution Pipe

Install new precast concrete 5 outlet distribution box with flow levelers and riser to ground surface with insulation. Backfill distribution box with 1ft minimum cover, slope ground away from wastewater trench.

The location of the septic tank and pump station are shown for illustrative purposes. The exact location will be determined when the house is sited. The tanks shall maintain a minimum of 50' separation from the drilled well, and 10' separation from the building foundation. (typical)

For the length of the driveway, the driveway grade shall not exceed twelve (12) percent except that the last 200 feet from the foundation of the primary structure being served shall not exceed fifteen (15) percent. In measuring the compliance of a driveway, the maximum grade may not be exceeded along the driveway center-line.

Proposed 12ft wide gravel driveway to for Lot 4

Lot 3 - "System A" for a 4 Bedroom SFR 490 GPD Shallow In-Ground Trench Style Primary Wastewater System. Use (2) 4' wide 76.5' long with 6" of Stone Underneath Distribution Pipe

Lot 3 New Replacement At-Grade Wastewater Disposal System. Use (2) 6' effective width x 51.5' long bed. See table for elevations.

Lot 2 - "System B" for a 4 Bedroom SFR 490 GPD Pretreated mound style wastewater system 5' x 49' with 12" of sand underneath stone.

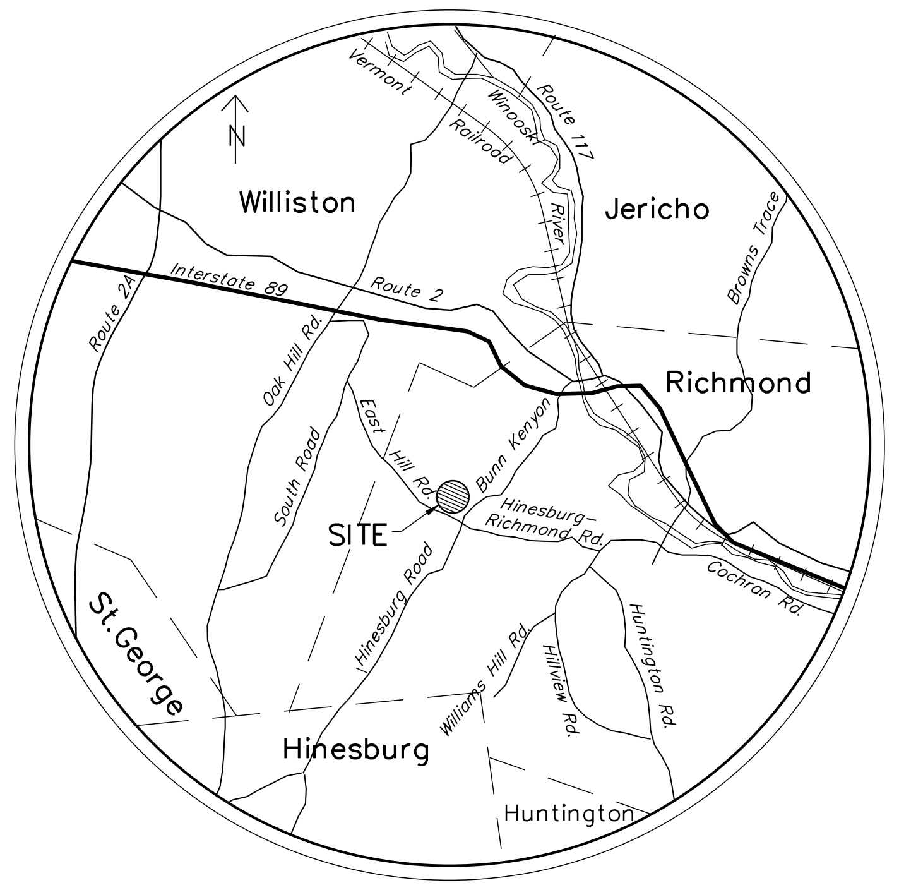
Lot 1 - "System C" for a 4 Bedroom SFR 490 GPD Pretreated mound style wastewater system 5'x 49' with 12" of sand underneath stone.

Proposed 20' wastewater easement for the benefit of Lot 1, Lot 2 & Lot 3 for installation of forcemain, maintenance and access.

Proposed wastewater system area easement for the benefit of Lot 1 & Lot 2 for installation, maintenance and access.

Proposed 60' access and utility easement for the benefit of Lots 1, 2, 3, 4, 5, & 6. Right of way for egress and ingress, installation, maintenance and access of force mains in common trench

Proposed drilled bedrock well with 3/4" k copper or C.T.S. water service maintain minimum 6' of cover. Water lines must be 25' from wastewater tanks & 10' from wastewater pipes. (typical)



Location Map

N.T.S.

Owner/ Applicant

Peggy M. Farr Revocable Trust
112 Huntington Road
Richmond, VT 05477

Zoning Information:

Agricultural / Residential District

Front Yard Set Back 30 feet
Rear Yard Set Back 20 feet
Side Yard Set Back 20 feet

Tax Map Number

HU0400.a

Notes:

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4. This plan may be copied to the extent necessary to comply with Vermont State Laws pertaining to accessibility to public records. Use of these plans for construction purposes requires the permission of Krebs & Lansing Consulting Engineers.
5. Large animal habitat, imagery, and LIDAR information downloaded from the Vermont Center for Geographic Information (VCGI).

Legend

2	Survey control point
TP-3	Soil test hole
	Utility pole
ohu	Overhead utility line
TBM #1	Temporary bench mark
150	Existing contour 2ft interval
WL	Wetland delineation by Gilman & Briggs Environmental (see note 3)
	Proposed property line
	Approximate property line
	Proposed building setbacks
B B	Existing 50ft wetland buffer
	Edge of woods/cluster
	Drainage
FM	New Sewer Forcemain
W	New Water Line/Hydrant/Valve/Shutoff
	Large animal habitat
	Proposed easement
	Existing easement
	Boulder/Ledge
	Exiting Stonewall

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

KREBS & LANSING
CONSULTING ENGINEERS

164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

STAMP:

JAY A. RENSHAW
NO. 509-B
LICENSED DESIGNER

N
Vermont State Plane Grid North (NAD83)

0' 80' 160' 240'
Bar Scale 1" = 80'

Project:

Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	1"=80'
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

Revisions

No.	Date	Description

Drawing Title

Overall Site Plan

Drawing No.

C-3.0

19327/dwgs/SP-Farr.dwg

New Lot 5
9.1 Acres

New 18" HDPE culvert

New 18" ADS culvert

Existing 8" HDPE Invert

New gravel driveway

Stormwater Conveyance swale

C Series Wetland C1-C72

Proposed 60' access and utility easement for the benefit of Lots 1, 2, 3, 4, 5, & 6. Right of way for egress and ingress, installation, maintenance and access of force mains in common trench

Proposed building envelope

New 20' wide gravel road with 2' shoulders

Proposed ROW Area =1.46 Acres

New Lot 2
2.4 Acres

20' building side setback

The location of the septic tank and pump station are shown for illustrative purposes. The exact location will be determined when the house is sited. The tanks shall maintain a minimum of 50' separation from the drilled well, and 10' separation from the building foundation. (typical)

Boulder

Stormwater Pre-Treatment swale

New gravel driveway

Existing agricultural/woods road

Proposed drilled bedrock well with 3/4" k copper or C.T.S. water service maintain minimum 6' of cover. Water lines must be 25' from wastewater tanks & 10' from wastewater pipes. (typical)

Forebay #1

New 18" HDPE Inv. 625.5

Gravel Wetland #1

Two 20' x 18 Cells
Elev. 625.0

New 6" PVC cross pipe between cells

New berm with stone weir overflow

New 6" PVC underdrain

New Outlet Structure 1. See detail.

2 New 18" PVC vertical inlet pipes

New End Section Inv. out 624.0

Inv. 624.0

New 18" HDPE

Inv. 622.0

shed

New paved Apron

Rachel Atkins
Volume 102 Page 364
June 27, 1997

Existing Residence

Gravel Drive

Existing Well

inv. 615.78

Approximate Existing Wastewater area

New Lot 1
2.2 Acres

New 6" PVC cross pipe between cells

exposed edge

New 6" PVC underdrain

2, New 18" PVC vertical inlet pipes

New berm with stone weir overflow

Gravel Wetland #2

Two 40' x 21' Cells
Elev. 588.0

New Outlet Structure 2. See detail.

New End Section Inv. out 587.0

C Series Wetland C1-C72

The location of the septic tank and pump station are shown for illustrative purposes. The exact location will be determined when the house is sited. The tanks shall maintain a minimum of 50' separation from the drilled well, and 10' separation from the building foundation. (typical)

389' east site distance

Existing Residence

Gravel Drive

24" storm (approx loca)

Gravel Drive

ohp

New gravel driveway

Proposed building envelope

Existing Tag# Lic#

0' 30' 60' 90'
Bar Scale 1" = 30'

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

KREBS & LANSING
CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

STAMP:

STATE OF VERMONT
SCOTT W. HOWRIGAN
No. 10,000
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	1"=30'
Drawn by	JAR/SWH
Checked by	
Date	03/10/2021

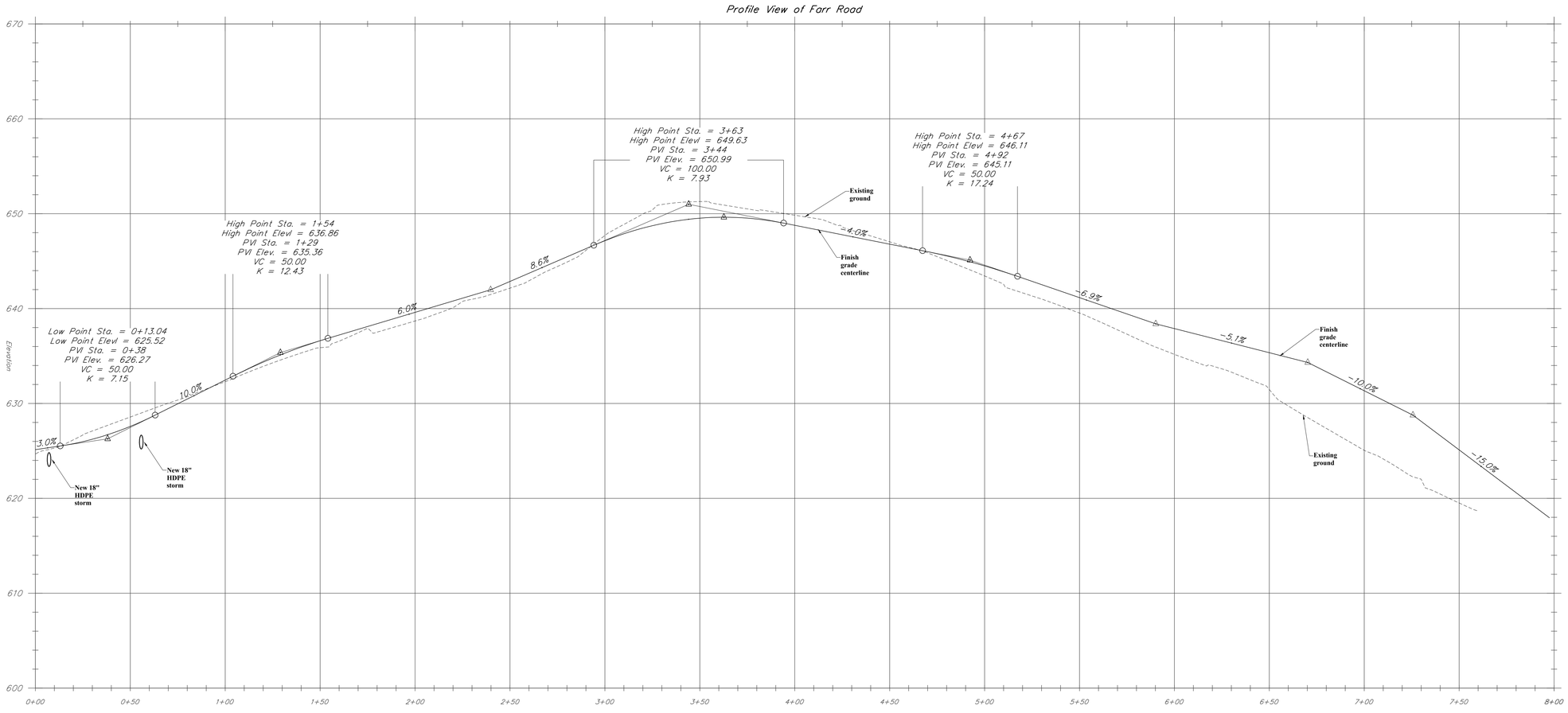
Revisions

No.	Date	Description

Drawing Title
Site Plan

Drawing No.
C-4.0

19327/dwgs/SP-Farr.dwg



ROAD PROFILE

HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=6'

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

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CONSULTING ENGINEERS
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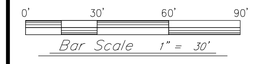
STAMP:



Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	as noted
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

Revisions

No.	Date	Description

Drawing Title
Road Profile

Drawing No.
C-4.1

19327/dwgs/SP-Farr.dwg

New Lot 4
6.3 Acres

The location of the septic tank and pump station are shown for illustrative purposes. The exact location will be determined when the house is sited. The tanks shall maintain a minimum of 50' separation from the drilled well, and 10' separation from the building foundation. (typical)

Existing woods road

Proposed property line

Install new precast concrete 5 outlet distribution box with flow levelers and riser to ground surface with insulation. Backfill distribution box with 1ft minimum cover, slope ground away from wastewater trench.

For the length of the driveway, the driveway grade shall not exceed twelve (12) percent except that the last 200 feet from the foundation of the primary structure being served shall not exceed fifteen (15) percent. In measuring the compliance of a driveway, the maximum grade may not be exceeded along the driveway center-line.

Proposed 20' wastewater easement for the benefit of Lot 1, Lot 2 & Lot 3 for installation of forcemain, maintenance and access.

Proposed 12ft wide gravel driveway to for Lot 4

Lot 1 - "System C" for a 4 Bedroom SFR 490 GPD Pretreated mound style wastewater system 5'x 49' with 12" of sand underneath stone.

Lot 2
Bedroo
Pretrea
wastew
with 12
stone.

Propose
system
the ber
2 for i
mainter

New 18" HDPE culvert

New gravel driveway

New 18" ADS culvert

Existing 8"

Remnants of abandoned shallow well tile

Boulder

36" Maple

TP-24 HSWT@ >78"
TP-13 HSWT@ 84"
TP-20 HSWT@ 60"
TP-12 HSWT@ 84"
TP-19 HSWT@ 68"
TP-16 HSWT@ 84"
TP-18
TP-14 HSWT@ 78"
TP-15 HSWT@ 84"
TP-22 HSWT@ >60"
TP-23
TP-15 HSWT@ 60"
TP-14 HSWT@ 40"
TP-9 HSWT@ 52"
TP-10 HSWT@ 36"
TP-11 HSWT@ 30"
TP-8 HSWT@ 27"
TP-7 HSWT@ 48"
TP-6 HSWT@ 26"
TP-5 HSWT@ 10"
TP-4 HSWT@ 19"
TP-1 HSWT@ 16"
TP-2 HSWT@ 18"
TP-3 HSWT@ 12"

25'

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

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CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

STAMP:

STATE OF VERMONT
JAMES A. RANSING
No. 7638
CIVIL
LICENSED PROFESSIONAL ENGINEER

0' 30' 60' 90'
Bar Scale 1" = 30'

Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	1"=30'
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

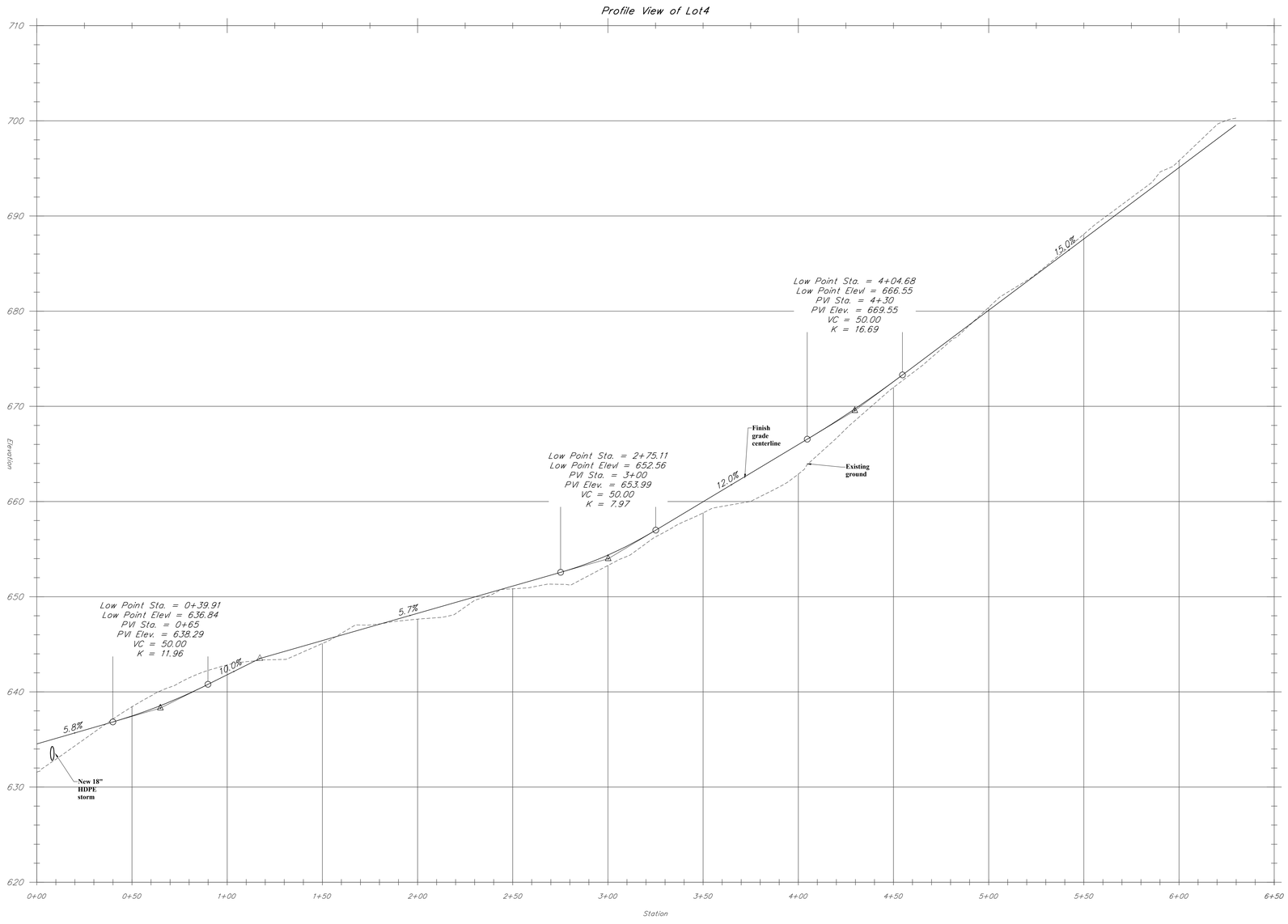
Revisions

No.	Date	Description

Drawing Title
Lot 4 Driveway Plan

Drawing No.
C-5.0

19327/dwgs/SP-Farr.dwg



LOT 4 PROFILE

HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=6'

Randall Farm Subdivison

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Project No.	19327
Scale	as noted
Drawn by	JAR/SWH
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Revisions

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Lot 4 Driveway Profile

Drawing No.
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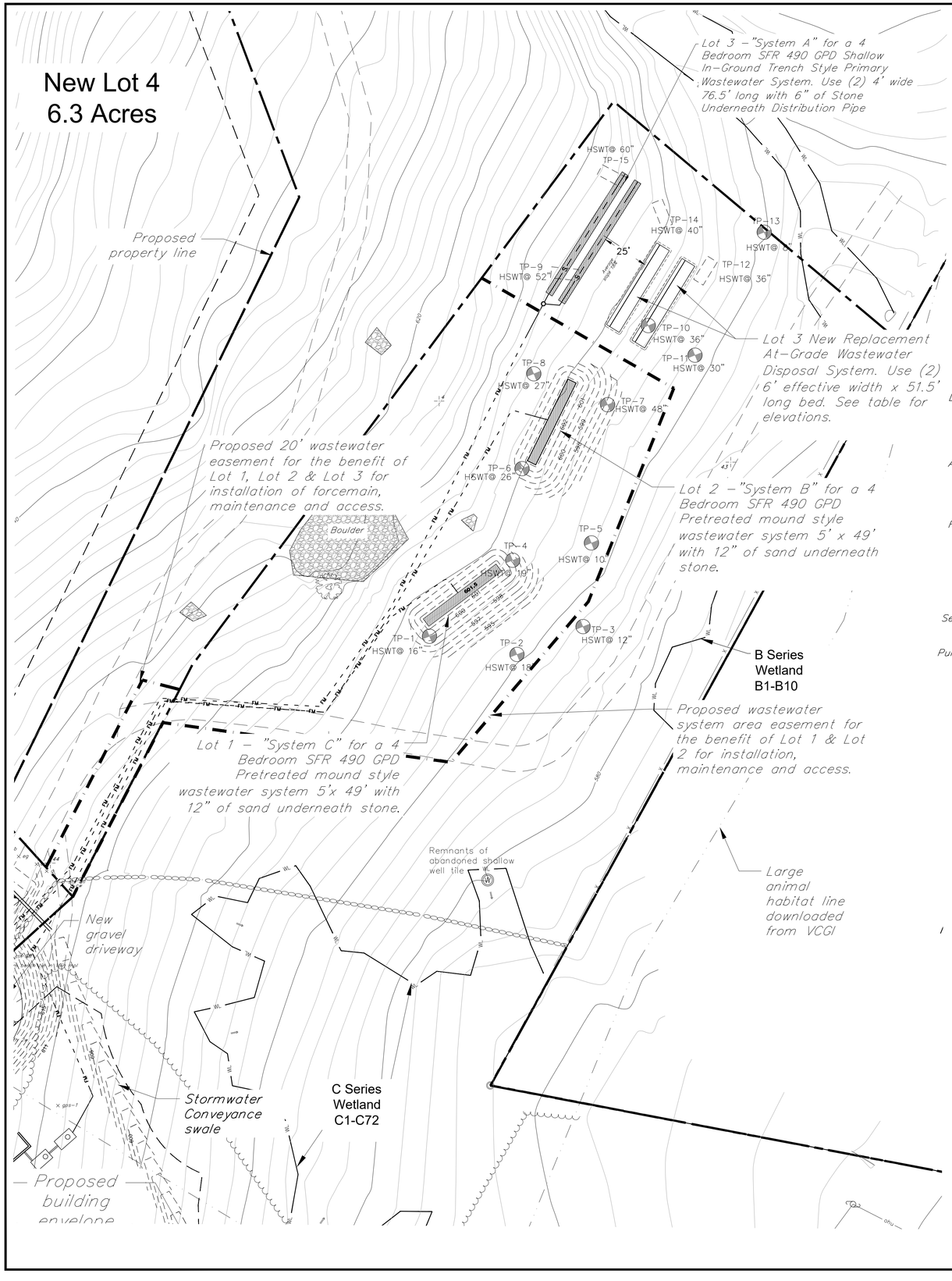
19327/dwgs/SP-Farr.dwg



Basis of Design for System A
Primary Shallow In-Ground Trench Style

Design Flow:
- 1 single family houses (4 bedroom) = 490 G.P.D.
- For a 4 Bedroom Single Family
- Design Flow = 3 bedrooms 140gpd * 3 gals/day/bedrooom = 420 gals/day
  - Additional bedroom based on 1 person per/bedroom + = 70 gpd

Total Design Flow 490 gpd

Application Rate:

For Shallow In Ground Style Trench
Use bed application rate = Q = .80
Table 9-3 (Loamy fine sand / SG)

Required Leach Area for Primary:
- Area required = $\frac{490\ GPD}{.8}$ = 612.5 s.f.
- Use 4' shallow in ground
- Required bed length = $\frac{612.5\ s.f.}{4\ ft.}$ = 153.12 ft.
- Use 2, 4' width x 76.5' shallow in ground trench style wastewater systems with 6" crushed stone under distribution pipe for Primary wastewater system

Septic Tank:
- Use 1000 gallon, 2 compartment precast concrete septic tank with outlet filter and risers to ground surface

Pump Station:
- Use 1000 gallon simplex pump station
- dose = 122.5 gal, Emergency Storage Alarm = 490 gal

Basis of Design for "System A" Replacement
Pretreated Effluent At-Grade System

Design Flow:
- 1 single family houses (4 bedroom) = 490 G.P.D.
- For a 4 Bedroom Single Family
- Design Flow = 3 bedrooms 140gpd * 3 gals/day/bedrooom = 420 gals/day
  - Additional bedroom based on 1 person per/bedroom + = 70 gpd

Total Design Flow = 490 gpd

Application Rate:

For At Grade Application Rate
Use application rate = Q = .8
Table 9-3 (Loamy fine sand / SG)

Required Leach Area for replacement:
- Area required = $\frac{490\ GPD}{.8}$ = 612.5 s.f.
- Use 6' effective at grade
- Required effective length = $\frac{612.5\ s.f.}{6\ ft.}$ = 102.08 ft.
- Use 2, 6' effective width x 51.5' At-grade wastewater systems for replacement wastewater system with pretreated effluent

Septic Tank:
- Use 1000 gallon, 2 compartment precast concrete septic tank with outlet filter and risers to ground surface

Pump Station & Pretreatment:
- Use 1000 gallon simplex pump station
- dose = 122.5 gal, Emergency Storage Alarm = 490 gal
- Pretreatment unit to treat 490 gallons per day of effluent.

Basis of Design for "System B & C" Mound Style Wastewater Disposal System

Design Flow:
- For an Proposed 4 Bedroom Single Family
- Design Flow = 3 bedrooms 140gpd * 3 gals/day/bedrooom = 420 gals/day
  - Additional bedroom based on 1 person per/bedroom + = 70 gpd

Total Design Flow = 490 gpd

Application Rate:
- For mound system
- Application rate = Q = 1.0 gals/s.f./day
- For filtrate effluent disposal system
- Application rate = 2 * Q = 2 * 1.0 = 2.0 gals/s.f./day

Required Leach Area:
- Area required = $\frac{490}{2.0}$ = 245 s.f.
- Use 5' wide Bed
- Required system length = $\frac{245\ s.f.}{5\ ft.}$ = 49.0 ft.
- Use 1, 49' long x 5' wide bed style mound

Septic Tank & Pump Station/Pretreatment:
- New 1,000 gallon septic tank with outlet filter and risers to ground surface
- New 1,000 gallon, precast concrete pump station with simplex pump, audible alarm and riser to ground surface
- Pretreatment unit to treat 490 gallons per day of effluent.

Performance Based Mounding Analysis for Mounds Systems B & C

For Primary System
Design Flow = 490 gpd
Natural Ground Slope = 15–20% (Average)
Receiving Soil Texture = Fine loamy sand

From Table 1:
Linear Loading Rate Factor (f) = 33.7

From Soil Test Logs:
Seasonal High Water Table at 16 inches 16"– 6" reserved unsaturated soil for assumed induced mounding, (H) = 10"/ 12' = .83' (based on Test Pits)

Primary Linear Loading Rate: (LLR)
LLR = (h) * (f)
LLR = (.83) * (33.7) = (27.97)
LLR = 27.97 gpd/ft

Primary System Length: (L)
For a Design Flow Q = 490 gpd
L = 490 gpd / 27.97 gpd/ft
L = 17.52 (minimum length required)
49 linear feet provided

Table 1. Linear Loading Rate Factors Based on Soil Texture and Natural Ground Slope

	LINEAR LOADING RATE FACTORS (f)						
	Natural Ground Slope						
Soil Texture	0–2%	2.1–4%	4.1–6%	6.1–8%	8.1–10%	10.1–15%	15.1–20%
Coarse sand, Sand, Loamy Coarse Sand, Loamy Sand	7.5	22.4	37.4	52.4	52.4	52.4	52.4
Coarse Sandy Loam, Sandy Loam, Fine Sand, Very Fine Sand, Loamy Fine Sand, Loamy Very Fine Sand	3.7	11.2	18.7	26.2	33.7	33.7	**33.7**
Fine Sandy Loam, Very Fine Sandy Loam	1.5	4.4	7.5	10.5	13.5	18.7	26.2
Loam	1.1	3.4	5.6	7.9	10.1	14.0	19.6
Silt Loam	0.7	2.2	3.7	5.2	6.7	9.4	13.1
Sandy Clay Loam, Silty Clay Loam, Clay Loam	0.4	1.1	1.9	2.6	3.4	4.7	6.5
Sandy Clay, Silty Clay, Clay	0.2	0.7	1.1	1.6	2.0	2.8	3.9

Table from "Simplified Procedure for Prescriptive Desktop Mounding Analysis" dated February 6, 2003, published by State of Vermont Agency of Natural Resources Department of Environmental Conservation, Wastewater Management Division.

Legend

- Survey control point
- Soil test hole
- Temporary bench mark
- Finish Contour
- Overhead Power
- Existing Contour
- Existing Underground Power
- New Water Line/Hydrant/Valve/Shutoff
- Survey Control Point
- Approximate Property Line
- Potable Water Supply/ Wastewater Disposal Isolation Envelope
- Proposed Easement

Notes:

1. This plan is not a boundary survey. Portion of parcel was depicted in administrative subdivision prepared by Krebs and Lansing Consulting Engineers Inc. and recorded in the Richmond land records. Remaining parcel outline references tax map downloaded from VCGI and physical evidence observed in the field.
2. Topographic information shown on plan was developed by Krebs and Lansing Consulting Engineers Inc. Topographical survey completed in 2019, 2020, and 2021.
3. Wetlands delineation shown on plan was completed by Gilman and Briggs Environmental on November 5, 2019. The areas delineated were characterized as Class II wetland according to the Vermont Wetland Rules last revised April 1, 2017. The location of the wetland flags was completed by Krebs and Lansing Consulting Engineers Inc. on November 6, 2019 and December 16 & 17, 2019.
4. This plan may be copied to the extent necessary to comply with Vermont State Laws pertaining to accessibility to public records. Use of these plans for construction purposes requires the permission of Krebs & Lansing Consulting Engineers.
5. Large animal habitat, imagery, and LIDAR information downloaded from the Vermont Center for Geographic Information (VCGI).

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STATE OF VERMONT JAY A. RENSHAW 009.0126 LICENSED DESIGNER

N
Vermont State Plane Grid North (NAD83)

0' 30' 60' 90'
Bar Scale 1" = 30'

Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	1"=30'
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

Revisions

No.	Date	Description

Drawing Title
Wastewater Disposal Plan Lots 1-3

Drawing No.
C-7.0

19327/dwgs/SP-Farr.dwg

Lot 4 – For a 4 Bedroom SFR 490 GPD with accessory apartment 140 GPD In-Ground Trench Style Primary Wastewater System. Use (3) 4' wide 66' long with 12" of Stone Underneath Distribution Pipe

Lot 4 – Replacement Wastewater System

Lot 5 – Replacement Wastewater System

Lot 5 – For a 4 Bedroom SFR 490 GPD with accessory apartment 140 GPD In-Ground Trench Style Primary Wastewater System. Use (3) 4' wide 66' long with 12" of Stone Underneath Distribution Pipe

Install new precast concrete 5 outlet distribution box with flow levelers and riser to ground surface with insulation. Backfill distribution box with 1ft minimum cover, slope ground away from wastewater trench.

The location of the septic tank and pump station are shown for illustrative purposes. The exact location will be determined when the house is sited. The tanks shall maintain a minimum of 50' separation from the drilled well, and 10' separation from the building foundation. (typical)

Existing woods road

Boulder

Boulder

For the length of the driveway, the driveway grade shall not exceed twelve (12) percent except that the last 200 feet from the foundation of the primary structure being served shall not exceed fifteen (15) percent. In measuring the compliance of a driveway, the maximum grade may not be exceeded along the driveway center-line.

Install new precast concrete 5 outlet distribution box with flow levelers and riser to ground surface with insulation. Backfill distribution box with 1ft minimum cover, slope ground away from wastewater trench.

TP-1 HSWT@ 67"
TP-2 HSWT@ 80"
TP-3 HSWT@ 84"
TP-4 HSWT@ 84"
TP-5
TP-6 HSWT@ 78"
TP-7 HSWT@ 70"
TP-8 HSWT@ 24"
TP-9 HSWT@ 24"
TP-10 HSWT@ 75"
TP-11 HSWT@ 78"
TP-12 HSWT@ 84"
TP-13 HSWT@ 84"
TP-14 HSWT@ 78"
TP-15 HSWT@ 84"
TP-16 HSWT@ 84"
TP-17 HSWT@ 44"
TP-18 HSWT@ 48"
TP-19 HSWT@ 68"
TP-20 HSWT@ 60"
TP-22 HSWT@ >60"
TP-23
TP-24 HSWT@ >78"

Basis of Design for Lots 4 & 5 Primary & Replacement In-Ground Trench Style Wastewater System

Design Flow:
- For a new 4 bedroom residence & 1 bedroom ADU
- Design Flow = 3 bedrooms * 140 gals/day/bedroom + 1 bedroom @ 70 gpd + 1 bedroom accessory apartment * 140 gals/day/bedroom
  Total Design Flow = 420 gals/day + 70 gals/day + 140 gals/day = 630 gals/day

Application Rate:
For In Ground Style Trench
Use bed application rate = Q = .80
Table 9-3 (Loamy fine sand / SG)

Required Leach Area for Primary:
- Area required = $\frac{630\ GPD}{.8}$ = 787.5 s.f.
- Use 4' in ground trench
- Required bed length = $\frac{787.5\ s.f.}{4\ ft.}$ = 196.87 ft.
- Use 3, 4' width x 66' in ground trench style wastewater systems with 12" crushed stone under distribution pipe for Primary wastewater system

Septic Tank:
- Use 1000 gallon, 2 compartment precast concrete septic tank with outlet filter and risers to ground surface

Pump Station:
- Use 1000 gallon simplex pump station
- dose = 122.5 gal, Emergency Storage Alarm = 490 gal

Minimum Isolation Distances

(Contact Engineer for any Clarifications or conflicts)	Horizontal Distance (ft.) Edge of System	Septic Tank	Sewer
Drilled well serving 1 home – up slope of system	100	50	50
Drilled well serving 1 home – down slope of system	200	50	50
Lake and pond impoundment – standing water	50	25	25
River, streams	50	25	10
Drainage swales, roadway ditches	25	–	–
Main or municipal water lines	50	50	10
Service water lines	25	25	10
Roadways, driveways, parking lots	10 (25 downslope)	5	–
Top of embankment or slope > 30%	25	10	–
Property line	25	10	10
Tree	10	10	10
Other disposal field or replacement area	10	–	–
Foundation, footing drains, curtain drains	35 (75 downslope)	10	–
Suction water line	100	50	50

Note:
These distances may be increased if necessary to provide adequate protection.

Legend

- Survey control point
- Soil test hole
- TBM #1 — Temporary bench mark
- 140 — Finish Contour
- ohp — Overhead Power
- 150 — Existing Contour
- ugp — Existing Underground Power
- W — WV — New Water Line/Hydrant/Valve/Shutoff
- Survey Control Point
- Approximate Property Line
- Potable Water Supply/ Wastewater Disposal Isolation Envelope
- Proposed Easement

Notes:

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Basis of Design – Onsite Potable Water System Lots 4 & 5

Average Day Demand = 4 bedrooms (3 * 140 GPD x 3 bedrooms + 70 GPD per add'l bedroom) = 490 GPD
+ 1 bedroom accessory apartment (1 * 140 GPD x 1 bedroom) = 140 GPD

Total Average Day Demand = 630 Gallons Per Day

Maximum Day Demand 630 G.P.D. / 720 min./perday = .88 G.P.M.

Instantaneous Peak Demand = 5 GPM/Unit = 10 G.P.M.

Source capacity = Not required for projects with maximum day demand under 2 GPM or less

Storage capacity = To be calculated after well drillers yield test completed

Minimum pump Capacity = 10 G.P.M.

Operating pressure range 40 psi to 60 psi

The well is not located in a flood plain

Randall Farm Subdivison

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STATE OF VERMONT JAMES A. RENSHAW 009.0 LICENSED PROFESSIONAL ENGINEER

Vermont State Plane Grid North (NAD83)

0' 30' 60' 90'
Bar Scale 1" = 30'

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6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
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Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

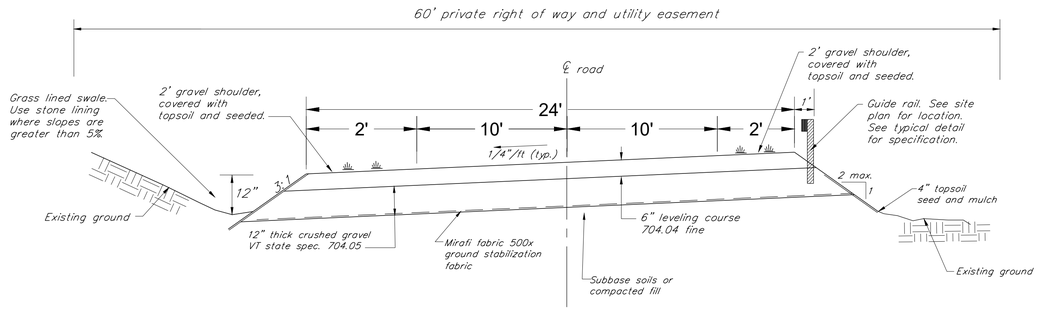
Revisions

No.	Date	Description

Drawing Title
Wastewater Disposal Plan Lots 4-5

Drawing No.
C-7.1

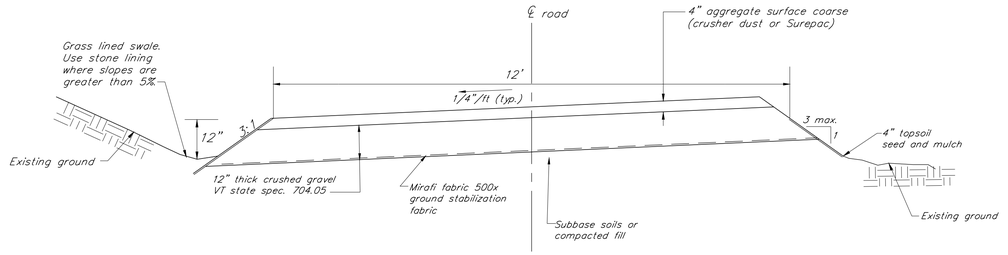
19327/dwgs/SP-Farr.dwg



Typical Section

Private Road

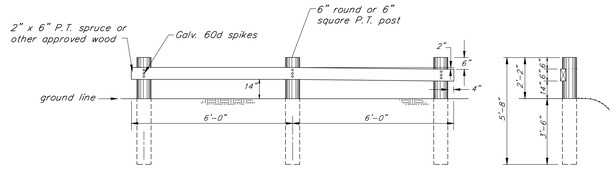
N.T.S.



Typical Section

12' Driveway

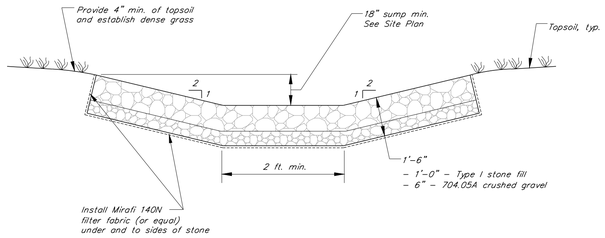
N.T.S.



Planks 16' in length to be used whenever possible. Posts 6" square may be used in place of round posts. First and last post of each section to be set back 12" from the general line of the posts, when 4 or more post are required. All wood members shall be pressure treated.

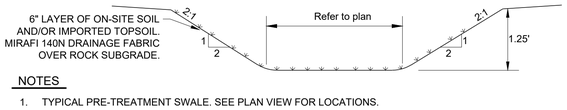
Guide Rail Detail

N.T.S.



STONE SWALE CROSS SECTION

N.T.S.



NOTES

1. TYPICAL PRE-TREATMENT SWALE. SEE PLAN VIEW FOR LOCATIONS.
2. TYPICAL SIDE SLOPES TO BE 2:1.
3. DURING CONSTRUCTION TEMPORARILY SEEDED AND HEAVILY MULCHED. EROSION CONTROL BLANKET MAY BE NECESSARY IN STEEPER SLOPES. INSTALL BLANKET IF EROSION PERSISTS AND/OR GRASS IS HAVING DIFFICULTY GERMINATING. POST CONSTRUCTION CONTRACTOR SHALL RE-GRADE ANY EROSION, REMOVE BUILD UP SEDIMENTS, PERMANENT SEED AND HEAVILY RE-MULCH.
4. CROSS-SECTION SHALL BE EXCAVATED TO NEAT LINES AND GRADES. OVER-EXCAVATED AREAS SHALL BE BACKFILLED WITH MOIST SOIL COMPACTED TO DENSITY OF SURROUNDING MATERIAL.
5. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF IN APPROVED UPLAND AREA SUCH THAT IT DOES NOT INTERFERE WITH FUNCTION.

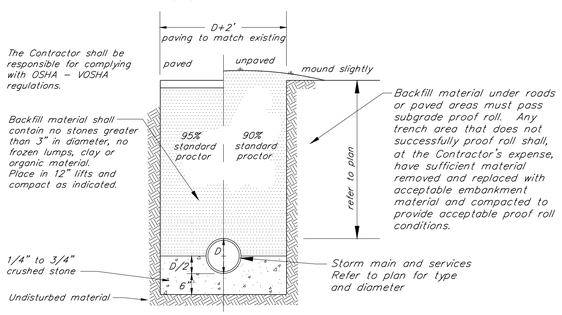
PRE-TREATMENT GRASS SWALE CROSS SECTION

N.T.S.

Road & Driveway Construction Notes

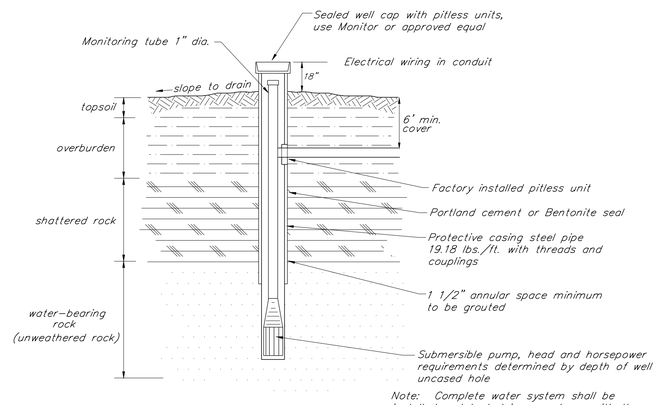
1. New road shall be constructed to the line and grade shown on the drawings. The road and utility locations shall detailed unless otherwise shown.
2. Methods for construction of sub-base shall conform to Vt. Highway Specs. (2018), 203.12 "subgrade" in all respects or as determined by the Engineer.
3. Gravel sub-base for pavement shall conform to Vt. Highway Specs. (2018), 704.04.
4. Leveling course shall conform to Vt. Highway Specs. (2018), 704.05 table 704.05A, fine. Shoulders shall conform to section 704.12, Aggregate for Shoulders.
5. Any sub-base or subgrade disturbed by Contractor, or rendered unsuitable by construction machinery shall be removed and replaced with approved granular backfill. Sub-base shall have 95% of maximum compaction density before road construction.
6. The Contractor shall be responsible for all compaction tests for the road, foundations and utility trenches.
7. Fill material for road embankment shall be approved by the Engineer. Fill shall be placed in 6" lifts and wetted and compacted with satisfactory compaction equipment. The Contractor shall perform a compaction test every 100' at the limits of the filling operation at every 12" of lift and shall recompact areas with less than 95% of maximum density, (Standard Proctor).
8. The Contractor shall furnish a loaded 10 wheeled dump truck for proof rolling the subgrade in the presence of the Engineer. The Engineer may request additional subgrade soils to be excavated and additional gravel base if results of proof roll show wheel rutting more than 2" deep, or shoving of the subgrade soil by the trucks wheels.
9. Road in fill sections shall be placed and compacted a minimum of 3 feet above top of any utility to be installed, before trench is excavated for pipe placement. In trenches, and cut sections the Contractor shall provide all necessary sheeting, shoring and bracing to maintain compliance with all OSHA/VOSHA regulations. Trench compaction tests shall be every 150 feet along the trench at every 12" of lift. Compaction shall be 90% of Standard Proctor outside of the Right of Way and 95% Standard Proctor within the Right of Way limits.

PVC SDR 35 pipe shall not be installed when the temperature drops below 32° F or goes above 100° F unless prior approval is obtained from the Engineer. Extra care is required when handling PVC pipe during cold weather. PVC pipe shall not be stored outside and exposed to prolonged periods of sunlight as pipe discoloration and reduction in pipe impact strength will occur. If PVC pipe is to be stored on site for 1 month or longer it shall be covered with canvas or other opaque material.



Typical Storm Trench Detail

N.T.S.



Note: Complete water system shall be installed and tested in accordance with the latest AWWA standards and Vermont Health Regulations.

Typical Drilled Well Section

N.T.S.

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Revisions

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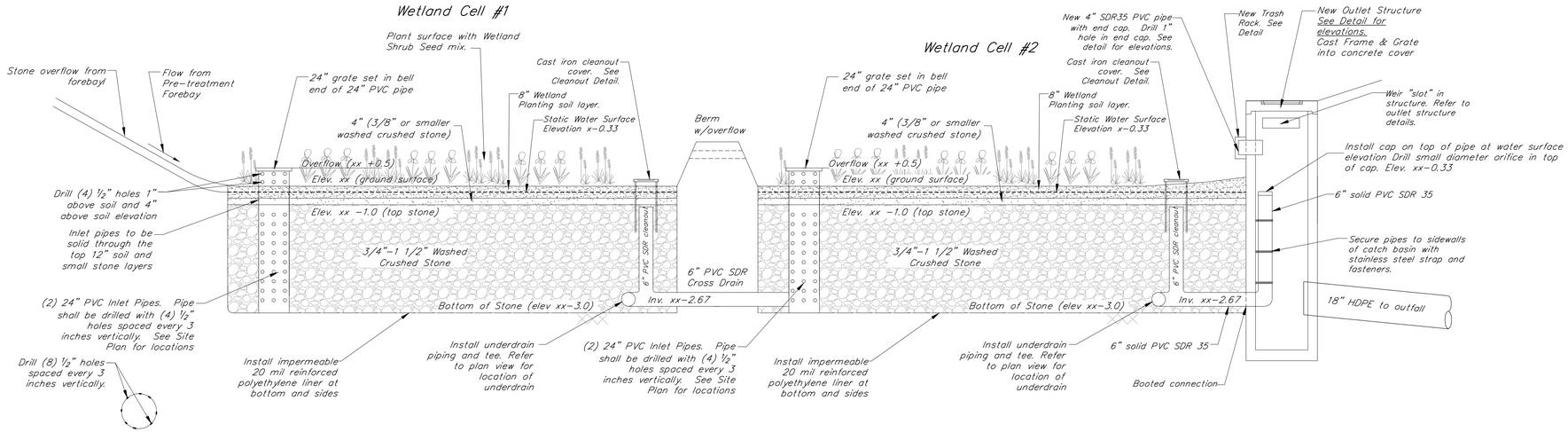
Drawing Title
Road & Driveway Details

Drawing No.
CD-1

19327\DWGS\Randall details.dwg

See Layout on Site Plan

No woody vegetation (> 2" diameter) shall be planted or allowed to grow



Gravel Wetland Detail

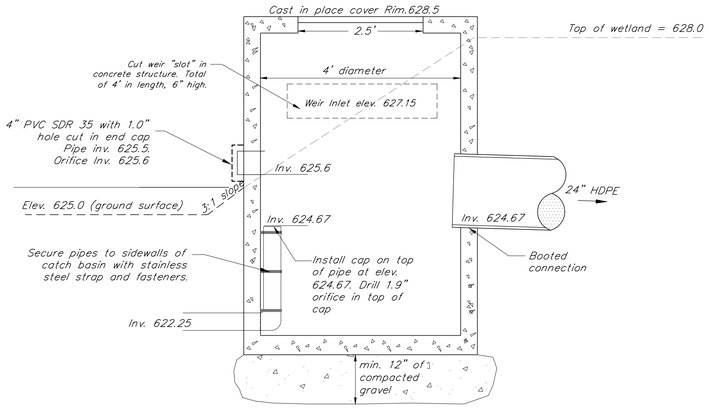
N.T.S.

PVC Inlet Pipe Plan View

WETLAND PLANTING SOIL CHARACTERISTICS

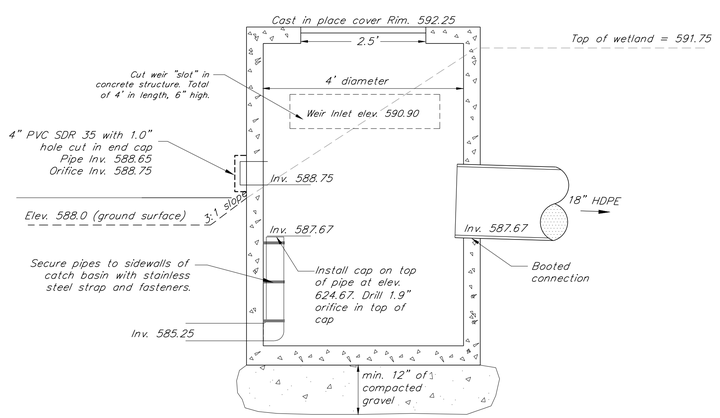
Parameter	Value
pH range	6.0 to 7.0
Organic matter	3% comprised of composted leaf mulch
Magnesium	35 lbs per acre, minimum
Phosphorus (P_2O_5)	10-30 mg/kg utilizing Mehlich-3 or Modified Morgan test
Potassium (K_2O)	85 lbs per acre, minimum
Soluble salts	500 ppm, maximum
Soil (low hydraulic conductivity (0.1-0.01 ft/day)	
Sieve Size	Percent Passing
No. 16	100%
No. 40	85-100%
No. 60	40-60%
No. 200 (Clay content < 15%)	5-10%

A dense and vigorous vegetative cover must be established and maintained over all pervious drainage areas upslope of the system



Gravel Wetland #1 Outlet Structure

N.T.S.



Gravel Wetland #2 Outlet Structure

N.T.S.

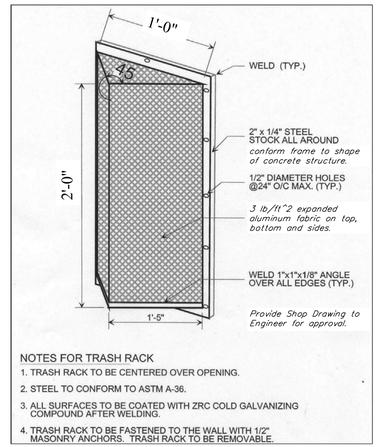


Figure D.1. Trash Rack Protection for Low Flow Orifice

Trash Rack Detail

N.T.S.

Randall Farm Subdivison

East Hill Road
Richmond, Vermont

KREBS & LANSING CONSULTING ENGINEERS
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STAMP:

Project:
Randall Farm
6 Lot Subdivision
Peggy M. Farr
Revocable Trust

Project No.	19327
Scale	N.T.S.
Drawn by	JAR/SWH
Checked by	
Date	03/19/2021

Revisions

No.	Date	Description

Drawing Title
Stomrwater Details

Drawing No.
CD-2

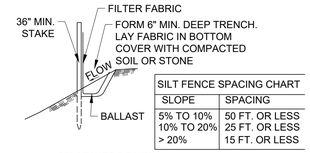
19327\DWGS\Randall details.dwg

EROSION PREVENTION & SEDIMENT CONTROL NOTES:

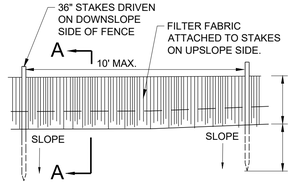
1. *The limit of disturbance shall be clearly defined by the Contractors survey prior to clearing. All sediment control measures must be installed ahead of initiating principal earthwork activities for the project.*
2. *All erosion controls shall be installed as detailed in the publication **Vermont Standards and Specifications for Erosion Prevention & Sediment Control** and in accordance with these project plans.*
   The site shall then be cleared and grubbed. All roots, stumps and deleterious materials shall be removed from the site. The Contractor shall minimize the amount of disturbed land at any given time.
3. *All erosion control shall be placed as shown on the drawings or as ordered by the Engineer. The Contractor shall maintain the erosion control measures until the Engineer is satisfied that permanent ground cover is established and that further measures are not required. It shall be the responsibility of the Contractor to employ appropriate erosion control as shown on these drawings and any other measures as necessary to trap sediment on site.*
4. *All areas of disturbance must have temporary or final stabilization within 14 days of initial disturbance. After this time any disturbance in the area must be stabilized at the end of each work day. The following exceptions apply: i) Stabilization is not required if work is to continue in the area within 24 hours and there is no precipitation forecast for the next 24 hours. ii) Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).*
5. *Contractor shall be responsible for all erosion control measures necessary to comply with the approved Erosion & Sediment Control Plan for this project. This plan indicates specific erosion control measures that must be installed to stabilize specific locations of the site. All necessary erosion control measures needed to minimize the discharge of sediment from site are not necessarily shown on the drawing.*
6. *Inspections of erosion prevention and sediment controls shall be conducted at least every seven (7) calendar days and within twenty-four (24) hours of the end off a storm event resulting in a discharge of stormwater from the construction site. Any necessary repairs or modifications shall be immediately completed by the Contractor.*
7. *All excess material and topsoil to be re-used on-site shall be stockpiled in areas approved by the Engineer. These stockpiles shall be surrounded by silt fence and shall be seeded and temporarily stabilized to minimize wind and stormwater erosion potential. Contractor shall minimize disturbance at all times. All areas shall be seeded and mulched within 48 hours of final grading. Temporary stabilization, including stockpiles, shall be necessary for all disturbed areas that are not worked for 7 days or more. Seeding and mulching shall be necessary for disturbed areas that are not worked for 14 days or more.*
8. *All areas of disturbance shall be permanently or temporarily stabilized as soon as possible and generally within 48 hours of the beginning of excavation. All disturbed areas shall be seeded and stabilized to minimize wind and stormwater erosion potential. Stabilization measures shall include mulch and netting, North American Green erosion control matting, crushed stone or gravel, or pavement.*
9. *Acceptable methods of stabilization shall include, hay mulching (with netting) (1.5-2 tons per acre), bark mulch, erosion control matting, crushed stone, crushed gravel, all paving surfaces (concrete, asphalt, etc.), weighted impermeable barriers, and other materials as approved by the Engineer.*
10. *The Contractor shall use water for dust control.*
11. *When Engineer determines erosion control measures are deemed no longer necessary, all materials detained, including silts and construction runoff debris, shall be collected and disposed of in a manner acceptable to the Engineer.*

NOTES

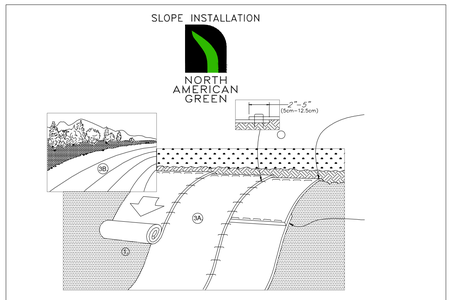
1. AT A MINIMUM, EROSION AND SEDIMENT CONTROL MEASURES MUST MEET ALL MEDEP STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
2. PERIMETER CONTROLS SHALL BE UTILIZED IN SMALL AREAS < 1 ACRE. IN AREAS > 1 ACRE, TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS ARE TO BE UTILIZED.
3. PERIMETER CONTROLS SHALL BE INSTALLED ON DOWNSLOPE SIDE OF PLANNED EARTH DISTURBANCE.
4. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN UPSLOPE CONTRIBUTING AREA.
5. SILT FENCE SHALL NOT BE USED AS CONSTRUCTION DEMARCATION.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER. SEE DETAIL.
7. IF SILT FENCE IS INSTALLED WHEN GROUND IS FROZEN, A GRAVEL, SHOT ROCK, OR SAND BALLAST MUST BE USED, MINIMUM OF 8".
8. WHEN DISTURBANCE IS WITHIN 75' OF A WATERBODY OR WETLAND CONTRACTOR MUST USE 2 ROWS OF SILT FENCE OR OTHER APPROVED PERIMETER BMP (SUCH AS SILT FENCE WITH FILTER SOCK OR SILT FENCE WITH EROSION CONTROL MIX).
9. INSTALL SILT FENCE AROUND DOWNGRADIENT OF ALL STOCKPILES AND PREVENT STORMWATER FROM RUNNING ONTO STOCKPILE AREAS.



SILT FENCE SPACING CHART	
SLOPE	SPACING
5% TO 10%	50 FT. OR LESS
10% TO 20%	25 FT. OR LESS
> 20%	15 FT. OR LESS



TYPICAL TEMPORARY SILT FENCE
N.T.S.



NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE: BLANKET SHALL BE USED ON SLOPES 2:1 OR STEEPER

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

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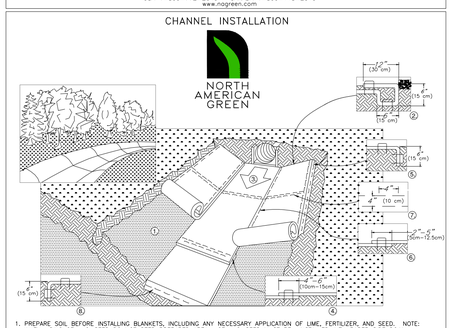
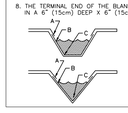


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 3"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED TO ENSURE PROPER SEAM ALIGNMENT. PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

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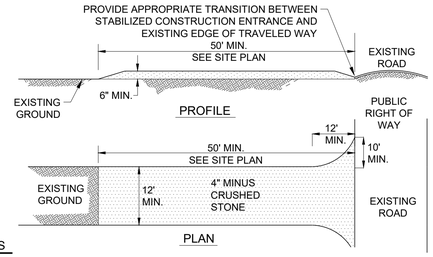
EROSION CONTROL BLANKET

NORTH AMERICAN GREEN S75BN

MATERIAL SPECIFICATIONS:
- EROSION CONTROL BLANKET SHALL BE A MACHINE-PRODUCED MAT OF 100% AGRICULTURAL STRAW.
- THE BLANKET SHALL BE OF CONSISTENT THICKNESS WITH THE STRAW EVENLY DISTRIBUTED OVER THE ENTIRE AREA OF THE MAT. THE BLANKET SHALL BE COVERED ON THE TOP SIDE WITH 100% BIODEGRADABLE WOVEN NATURAL ORGANIC FIBER NETTING HAVING AN APPROXIMATE 1/2" X 1" MESH AND BE SEWN TOGETHER WITH BIODEGRADABLE THREAD.
- STRAW EROSION CONTROL BLANKET SHALL BE S75BN AS MANUFACTURED BY NORTH AMERICAN GREEN, INC. (812-867-6632) OR EQUIVALENT. EROSION CONTROL BLANKET SHALL HAVE THE FOLLOWING PROPERTIES:

MATERIAL CONTENT:
- STRAW: 100% (0.50 lbs/sq.yd.)(0.27 kg/m^2)
- NETTING: ONE SIDE ONLY, LENO WOVEN 100% BIODEGRADABLE NATURAL ORGANIC FIBER (APPROX. WEIGHT 9.3 lbs./100 sq. ft.)
- THREAD: BIODEGRADABLE

PHYSICAL SPECIFICATIONS (ROLL):
- WIDTH: 6.67 feet (2.03 m)
- LENGTH: 108 feet (32.92 m)
- WEIGHT: 46.4 lbs. ± 10% (21.05 kg)
- AREA: 80 sq. yd. (50 m^2)



NOTES

1. CONTRACTOR SHALL STABILIZE CONSTRUCTION ENTRANCE AS REQUIRED TO PREVENT TRACKING OF SEDIMENT OFF-SITE.
2. CONTRACTOR TO USE MIRAFI 500X UNDER STONE FOR TEMPORARY CONSTRUCTION ROADS.
3. CRUSHED STONE SHALL BE ADDED OR REPLACED WHEN 80% OF THE VOIDS ARE FILLED WITH SEDIMENT.
4. STONE SIZE SHALL BE 2-3" ROCK.
5. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES IS ALLOWED.

STABILIZED CONSTRUCTION ENTRANCE
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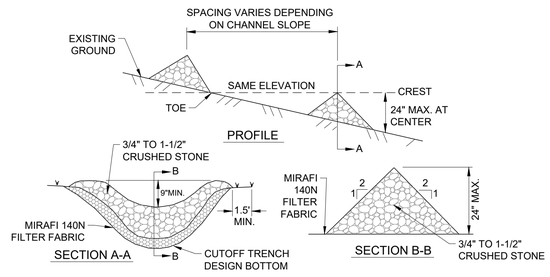
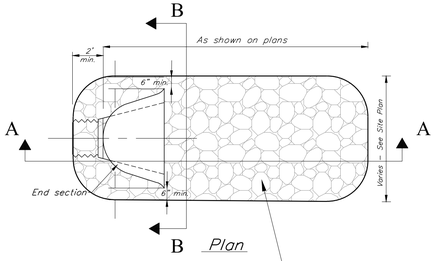
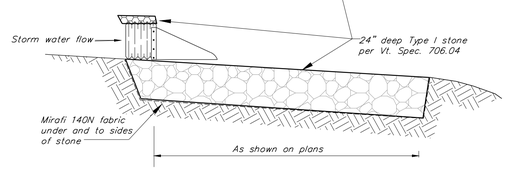


NOTES

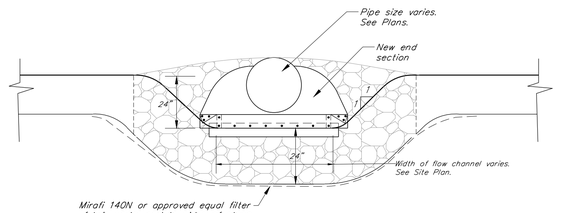
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

STONE CHECK DAM
N.T.S.





Section A-A



Section B-B

Typical End Section with Rip Rap Detail
N.T.S.

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