



VILLAGE VIEW CLUSTER SUBDIVISION

VILLAGE OF WARWICK ORANGE COUNTY, NY

BULK REQUIREMENTS

R-1 ZONE

CLUSTER DEVELOPMENT

	MINIMUM REQUIRED
LOT AREA (S.F.)	10,000
LOT WIDTH (FT.)	50
FRONT YARD (FT.)	15
REAR YARD (FT.)	25
ONE SIDE YARD (FT.)	5
BUILDING SPEERATION (FT.)	10

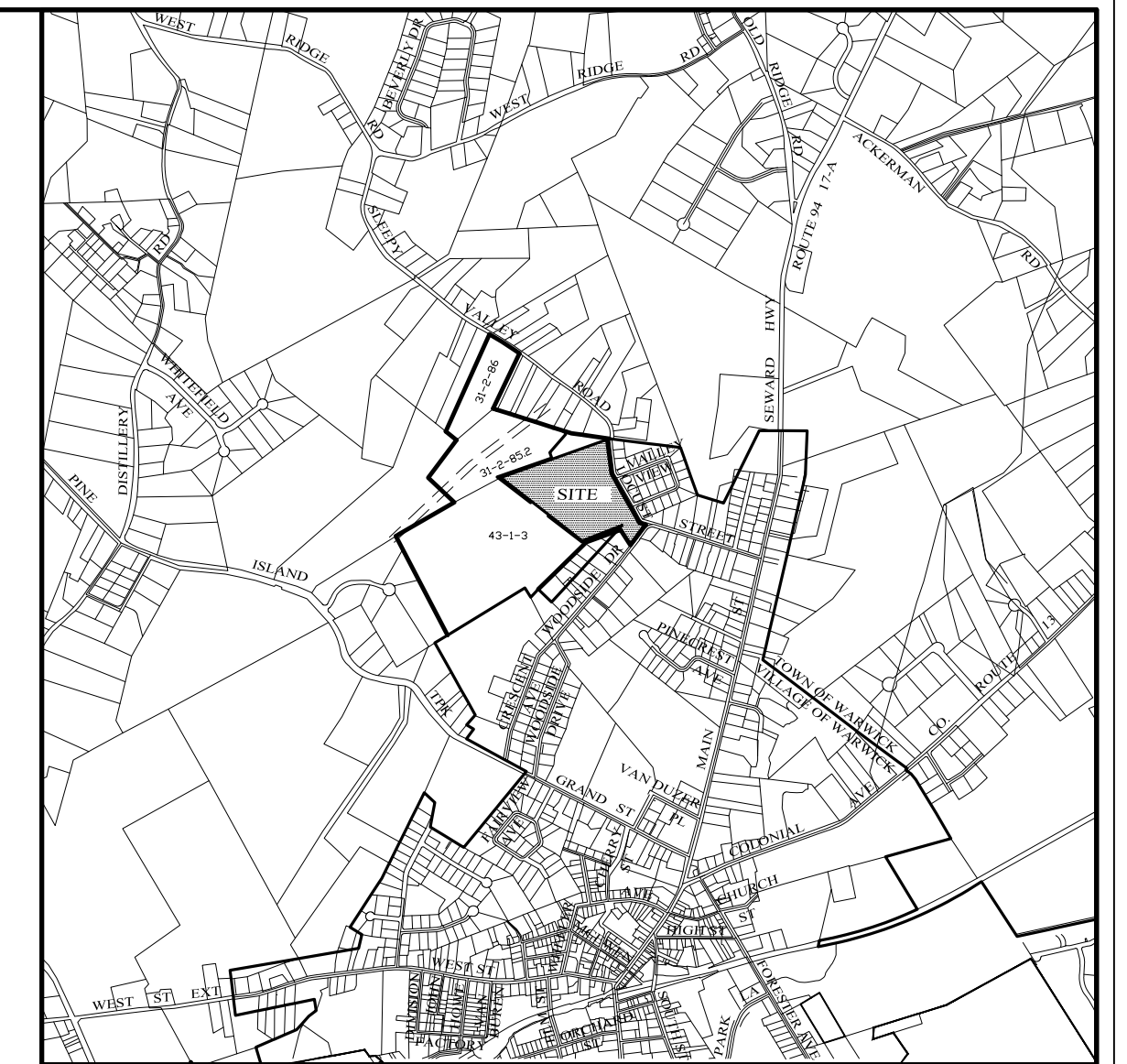
	MAXIMUM ALLOWED
BUILDING HEIGHT (FT.)	35
LOT COVERAGE (%)	35

SHEET INDEX

SHEET #1	COVER SHEET
SHEET #2	SUBDIVISION PLAT
SHEET #3	SITE PLAN
SHEET #4	SUBDIVISION PLAN
SHEET #5	SUBDIVISION PLAN
SHEET #6	SUBDIVISION PLAN
SHEET #7	SUBDIVISION PLAN
SHEET #8	ROAD A PROFILE
SHEET #9	ROAD B PROFILE
SHEET #10	EROSION CONTROL PLAN
SHEET #11	DETENTION POND DETAILS
SHEET #12	BIORETENTION AREA DETAILS
SHEET #13	DETAILS
SHEET #14	DETAILS
SHEET #15	DETAILS
SHEET #16	NORTH CULVERT CROSSING PLAN

OPEN SPACE AREAS CALCULATION

TOTAL AREA OF PARCEL*	= 20.92± ACRES
TOTAL OPEN SPACE AREA	= 6.17± ACRES
% OPEN SPACE	= 29+/-
* SEE GENERAL NOTES #2, #3 & #4.	



LOCATION MAP

SCALE: 1" = 2,000'

GENERAL NOTES:

- VILLAGE OF WARWICK TAX MAP DESIGNATION: SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.
- TOTAL AREA OF PARCELS IN VILLAGE: 20.3± ACRES.
- TOTAL AREA TO BE ANNEXED INTO VILLAGE FROM TOWN: 0.62± ACRES.
- TOTAL AREA OF PROPOSED PARCELS IN VILLAGE: 20.92± ACRES.
- ENTIRE PARCEL IS LOCATED IN THE R-1 ZONING DISTRICT.
- TOTAL NUMBER OF RESIDENTIAL LOTS WITHIN THIS SUBDIVISION: 45.
- PARCEL IS LOCATED WITHIN THE WARWICK VALLEY CENTRAL SCHOOL DISTRICT.
- PROPOSED SUBDIVISION TO BE SERVED BY VILLAGE OF WARWICK PUBLIC WATER & SEWER.
- BOUNDARY & TOPOGRAPHY INFORMATION SHOWN TAKEN FROM DRAWING ENTITLED: "SURVEY OF PROPERTY FOR RALPH FREDDOLINO" PREPARED BY JOHN MCGLOIN, P.L.S. ON APRIL 6, 1993.
- A.C.O.E. WETLANDS AS FLAGGED & VERIFIED BY: PETE TORGERSOIN IN AUGUST 2017.
- PLAN APPROVAL IS LIMITED TO 5 YEARS. TIME EXTENSIONS FOR PLAN APPROVAL MAY BE GRANTED BY THE ORANGE COUNTY DEPARTMENT OF HEALTH BASED UPON DEVELOPMENT FACTS AND THE REALTY SUBDIVISION REGULATIONS IN EFFECT AT THAT TIME. A NEW PLAN SUBMISSION MAY BE REQUIRED TO OBTAIN A TIME EXTENSION.
- THE APPROVED PLANS MUST BE FILED WITH THE ORANGE COUNTY CLERK'S OFFICE PRIOR TO OFFERING LOTS FOR SALE AND WITHIN 60 DAYS OF THE LAST APPROVAL OF THE FINAL PLANS.
- ALL UTILITIES SHALL BE INSTALLED UNDER GROUND.
- THE DESIGN AND LOCATION OF SANITARY FACILITIES (WATER AND SEWER) SHALL NOT BE CHANGED.

RECORD OWNER / APPLICANT

ROBERT SILBER
VILLAGE VIEW ESTATES, LLC
4 FOSSE COURT
AIRMONT, N.Y.

VILLAGE VIEW CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

COVER SHEET

DRAWING TITLE

KIRK ROTHER, P.E.
CONSULTING ENGINEER, PLLC

5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

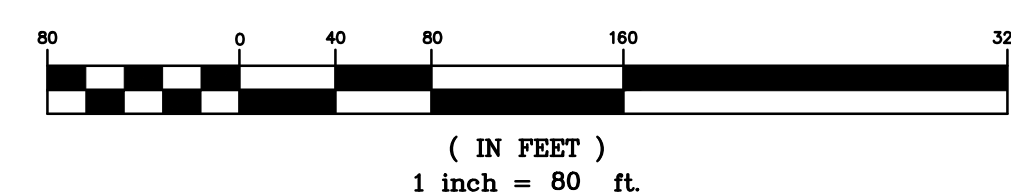
DATE	REVISIONS
08-22-18	REV. PER ENGINEER'S COMMENTS
08-01-18	REV. PER ENGINEER'S COMMENTS
05-16-18	ADD SPRING
04-04-18	ADDITIONAL DESIGN
03-01-18	DETAILED DESIGN
10-05-17	GENERAL REVISIONS
03-29-17	REV. PER VILLAGE ENGINEER'S COMMENTS
02-12-16	INITIAL PREPARATION

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO A DOCUMENT BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. REPRODUCTIONS OF THIS PLAN WHICH DO NOT BEAR THE ORIGINAL SEAL OF A LICENSED PROFESSIONAL ENGINEER SHALL BE CONSIDERED INVALID.

D.O.T. SHEET #	D.E.C. SHEET #	O.C.H.D. SHEET #	SHEET #
N.A.	N.A.	N.A.	1 OF 16
CAD #	PROJECT #	SCALE	
CLUS 1-17	04170.0	AS SHOWN	

LEGEND	
EXISTING PROPERTY LINE	---
PROPOSED PROPERTY LINE	---
PROPOSED BUILDING SETBACK	---
EXISTING STONEWALL	---
EXISTING WIRE FENCE	---
EXISTING OVER HEAD UTILITIES	---
EXISTING UTILITY POLE	---
EXISTING WETLAND LIMIT	---
EXISTING STREAM	---
EXISTING TREELINE	---

GRAPHIC SCALE





GENERAL NOTES:

1. VILLAGE OF WARWICK TAX MAP DESIGNATION: SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.
2. TOTAL AREA OF PARCEL: 20.3± ACRES.

SURVEY NOTES:

- UNAUTHORIZED ALTERATION TO A SURVEY MAP BEARING THE SEAL OF A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE N.Y.S. EDUCATION LAW.
- CERTIFICATIONS SHOWN HEREON INDICATE THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH CURRENT CODES OF PRACTICE FOR LAND SURVEYS AS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. CERTIFICATIONS SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS OR HER BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
- UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS, IF ANY, ARE NOT SHOWN HEREON AND ARE NOT CERTIFIED HERETO.
- SUBJECT TO A VALID, CURRENT ABSTRACT OF TITLE.
- SUBJECT TO ANY UNWRITTEN OR UNRECORDED DEEDS, EASEMENTS, RIGHTS-OF-WAY, AGREEMENTS OR OTHER INSTRUMENTS.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED OR EMBOSSED SEAL SHALL BE CONSIDERED TRUE VALID COPIES.
- CERTIFICATION HEREON IS STRICTLY LIMITED TO BOUNDARY SURVEY ONLY.

GRAPHIC SCALE



(IN FEET)
1 inch = 80 ft.

I, -----, L.S., P.C., HEREBY CERTIFY
THAT THE BOUNDARY SURVEY SHOWN IS BASED
ON AN ACTUAL FIELD SURVEY COMPLETED IN
MONTH AND DAY

CERTIFIED TO:

TOWN OF-----

----- L.S., P.C.

ADDRESS

NYS LICENSE NO. -----

VILLAGE VIEW
CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

PROJECT TITLE

SUBDIVISION
PLAT

DRAWING TITLE

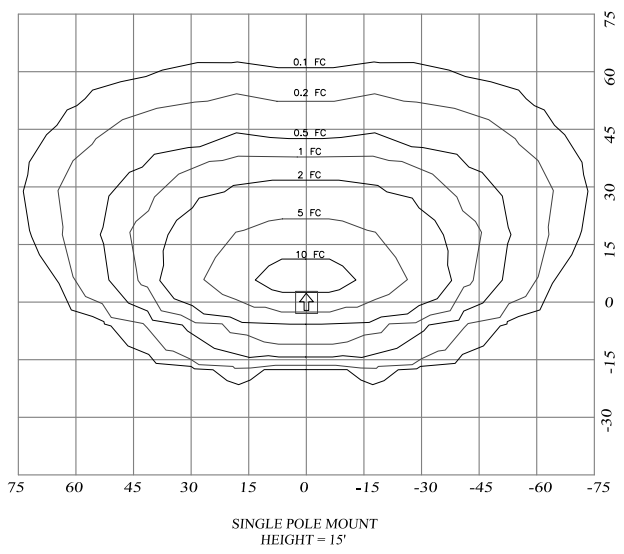
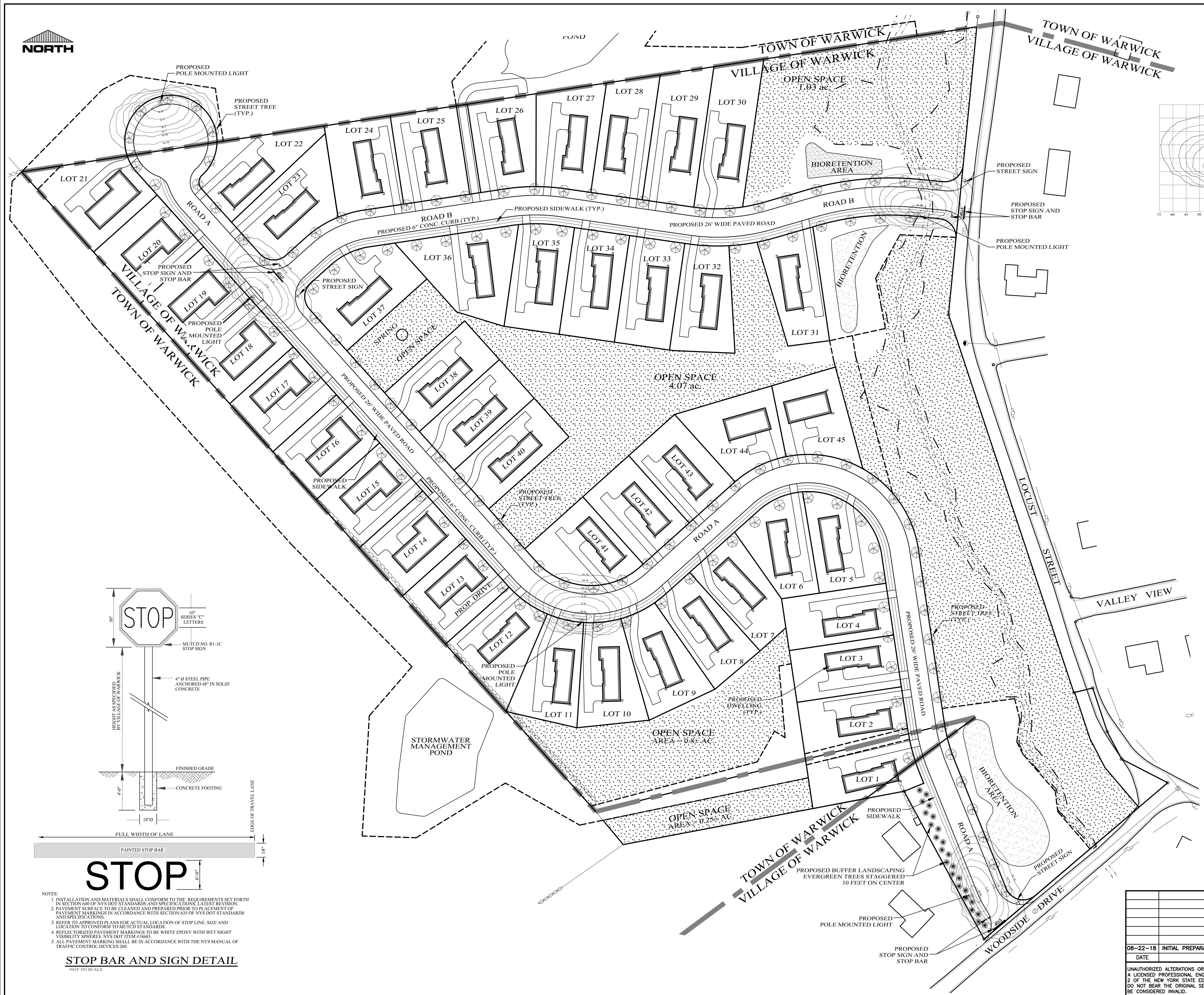
KIRK ROTHER, P.E.
CONSULTING ENGINEER, PLLC

5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

DATE	REVISIONS
08-22-18	REV. PER ENGINEER'S COMMENTS
08-01-18	REV OPEN SPACE
05-16-18	ADD SPRING
04-04-18	REV PER ADDITIONAL DESIGN
02-27-18	INITIAL PREPARATION

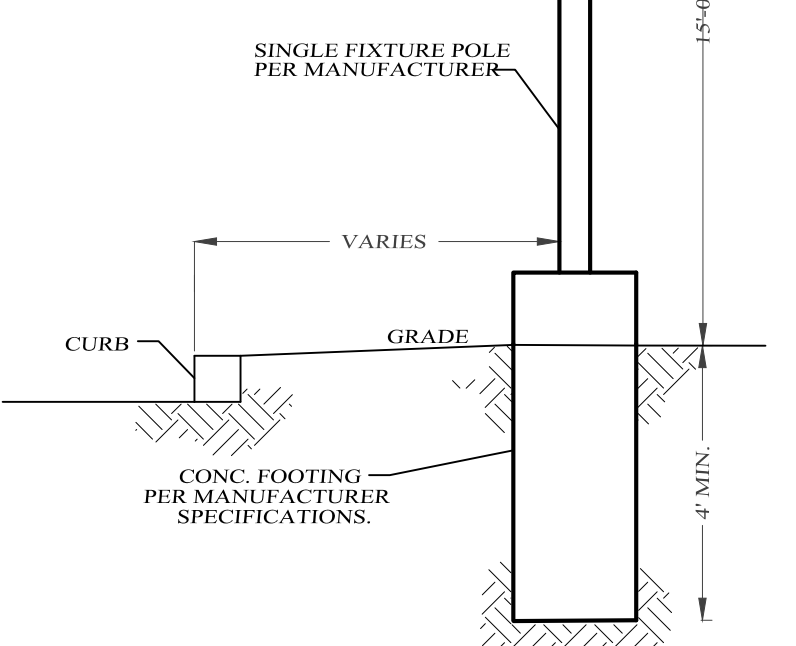
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D.O.T. SHEET #	D.E.C. SHEET #	O.C.H.D. SHEET #	SHEET #
N.A.	N.A.	N.A.	2 OF 16
CAD # 04170	PROJECT #	SCALE	
CLUS 1-17	04170.0	AS SHOWN	

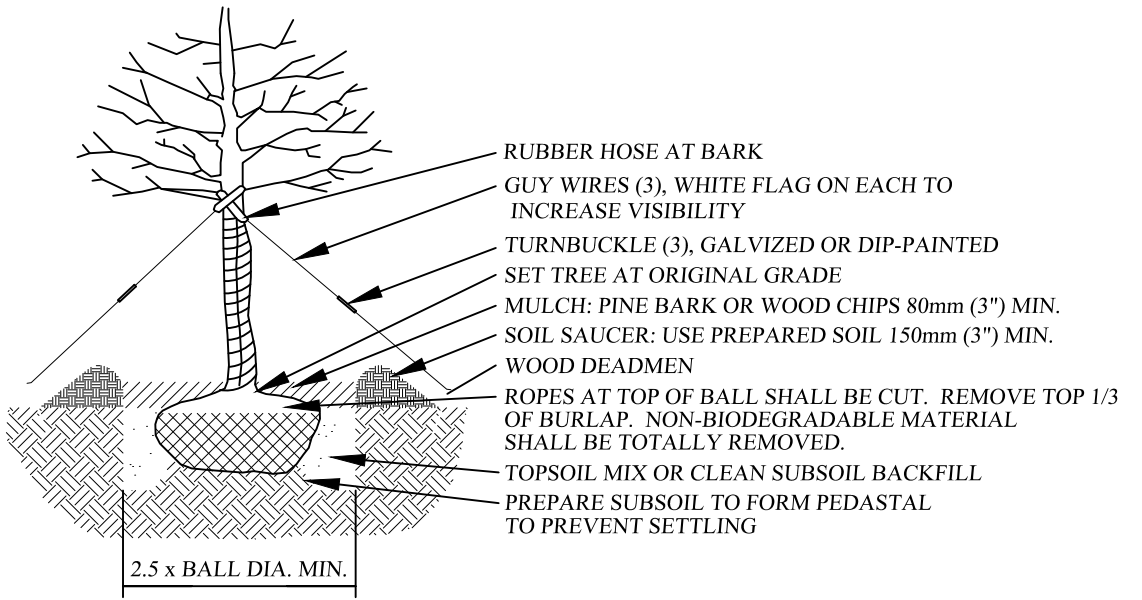


MODEL #ALED3T150Y-RWLED3T150Y
RWLED3T150SY-WPLED3T150Y (TYPE II)
AS MANUFACTURED BY RAB LIGHTING
170 LUTHER AVENUE
NORTHVALE, NEW JERSEY 07647

LED Info
Watts: 150W
Color Temp: 3000K
Color Accuracy: 70 CRI
L70 Lifespan: 100000
Lumens: 13596
Efficacy: 104 LPW



NOTES:
1. ALL ELECTRICAL COMPONENTS TO BE AS SPECIFIED BY MANUFACTURER AND
INSTALLED IN CONFORMANCE WITH ALL APPLICABLE BUILDING CODES.
POLE MOUNTED SINGLE LIGHT DETAIL
NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

STREET TREE NOTES:

TREES TO BE 2-1/2" TO 3" CALIPER, BALLED AND BURLAPPED AND MEET AMERICAN NURSERYMAN'S STANDARDS.

PROVIDE A MIX FROM THE CHOICES BELOW:

COMMON NAME	SCIENTIFIC NAME
RED SUNSET MAPLE	ACER RUBRUM "RED SUNSET"
HONEY LOCUST	GLEDTISIA TRIACANTHOS INERMIS
AMERICAN SYCAMORE	PLATANUS OCCIDENTALIS
GREENSPIRE LINDEN	TILIA CORDATA "GREENSPIRE"

**VILLAGE VIEW
CLUSTER SUBDIVISION**

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

**SITE
PLAN**

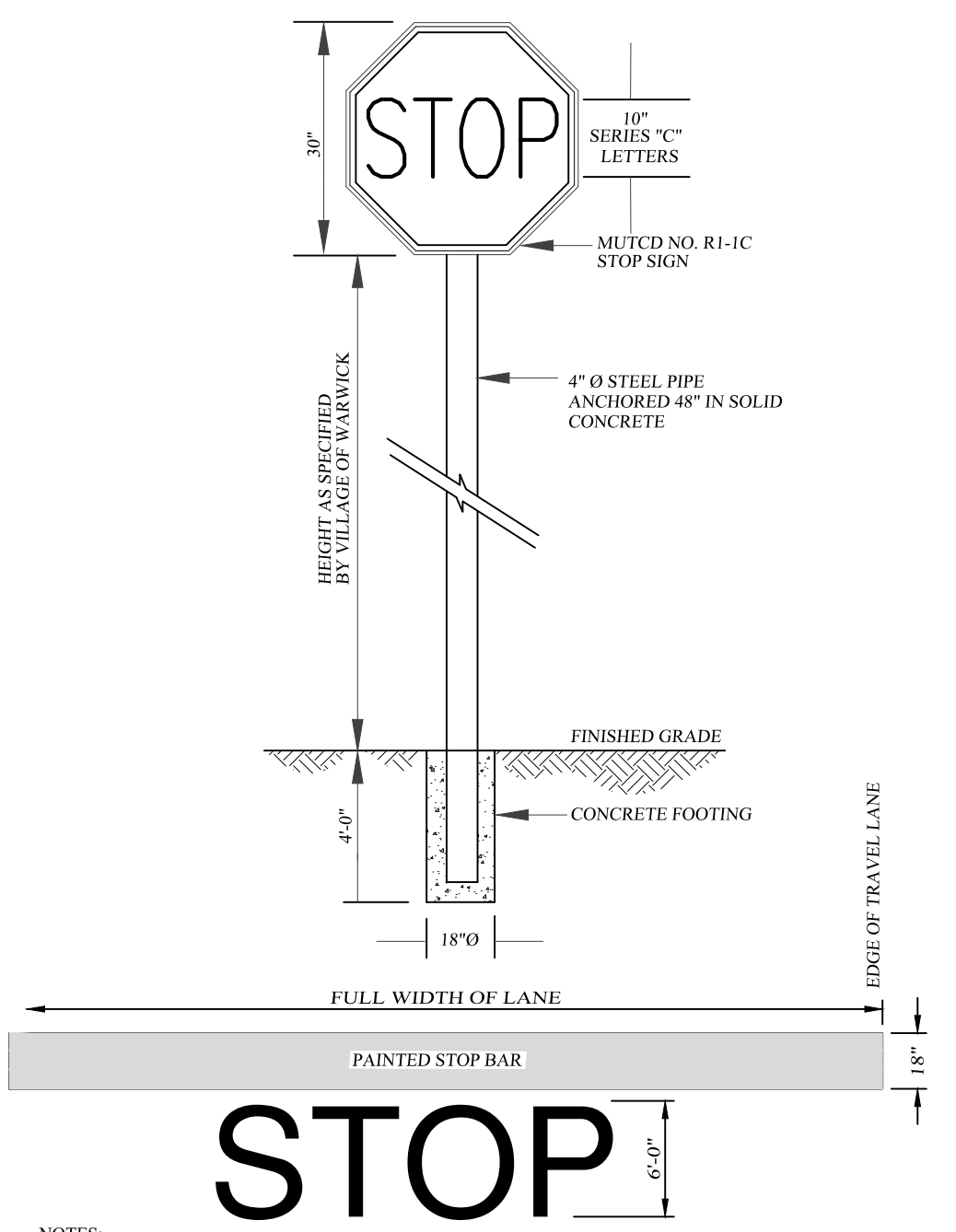
KIRK ROTHER, P.E.
CONSULTING ENGINEER, PLLC

5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

DATE	REVISIONS
08-22-18	INITIAL PREPARATION

DATE	REVISIONS	KIRK ROTHER, P.E.	N.Y.S. LIC. NO. 079053	DATE
D.O.T. SHEET #	D.E.C. SHEET #	O.C.H.D. SHEET #	SHEET #	
N.A.	N.A.	N.A.		
CAD # 04170	PROJECT #	SCALE		3 OF 16
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NOTES:
1. INSTALLATION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN SECTION 640 OF NYS DOT STANDARDS AND SPECIFICATIONS, LATEST REVISION.
2. PAVEMENT SURFACE TO BE CLEANED AND PREPARED PRIOR TO PLACEMENT OF PAVEMENT MARKINGS IN ACCORDANCE WITH SECTION 635 OF NYS DOT STANDARDS AND SPECIFICATIONS.
3. REFER TO APPROVED PLANS FOR ACTUAL LOCATION OF STOP LINE, SIZE AND LOCATION TO CONFORM TO MUTCD STANDARDS.
4. REFLECTORIZED PAVEMENT MARKINGS TO BE WHITE EPOXY WITH WET NIGHT VISIBILITY SPHERES, NYS DOT ITEM #0685.
5. ALL PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE NYS MANUAL OF TRAFFIC CONTROL DEVICES 260.
STOP BAR AND SIGN DETAIL
NOT TO SCALE



LEGEND	
EXISTING PROPERTY LINE	---
PROPOSED PROPERTY LINE	---
PROPOSED BUILDING SETBACK	---
PROPOSED EASEMENT LINE	---
10' CONTOUR LINE	---
2' CONTOUR LINE	---
PROPOSED CONTOUR LINE	---
PROPOSED WATER MAIN	---
PROPOSED SEWER MAIN	---
PROPOSED STORM CULVERT	---
PROPOSED EDGE OF PAVEMENT	---
EXISTING STONEWALL	---
EXISTING WIRE FENCE	---
EXISTING OVER HEAD UTILITIES	---
EXISTING UTILITY POLE	---
USDA SOILS BOUNDARY	---
EXISTING WETLAND LIMIT	---
EXISTING STREAM	---
EXISTING TREELINE	---



SEE DETENTION POND DETAILS
(SHEET #10) FOR POND PLANTING,
OUTLET CONTROL STRUCTURE &
DETAILED POND DESIGN.

GRADING, UTILITY & ACCESS EASEMENT
TO THE BENEFIT
OF THE VILLAGE OF WARWICK

PROPOSED DRY POND B

OUTLET CONTROL
STRUCTURE
30" HDPE OUTLET INV = 747.00

221 L. 30" HDPE
@ 9.50%

MATCH LINE
SHEET #3

MATCH LINE
SHEET #2

VILLAGE VIEW CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

PROJECT TITLE

SUBDIVISION PLAN

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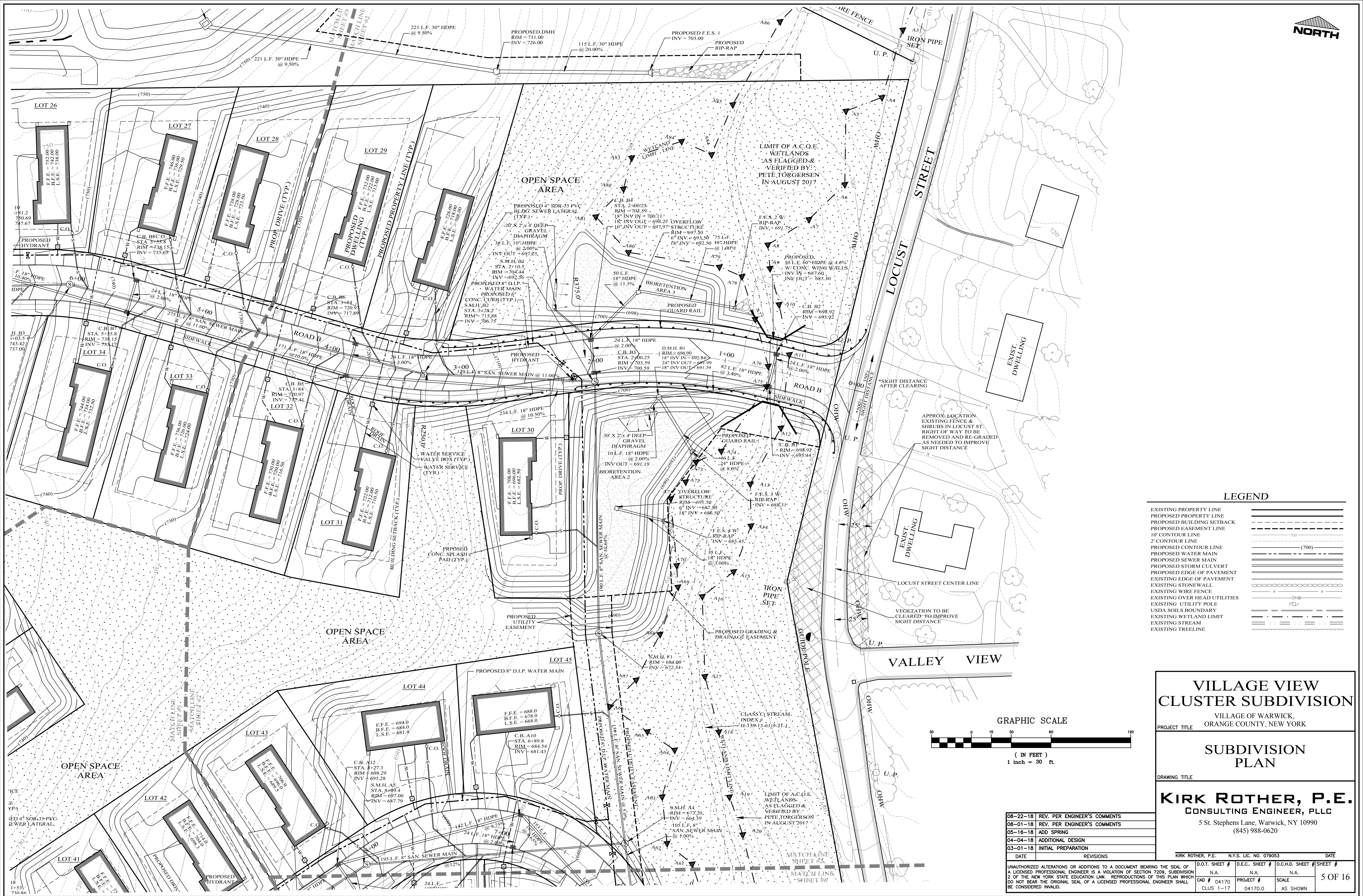
DATE	REVISIONS	KIRK ROTHER, P.E.	N.Y.S. LIC. NO. 079053	DATE
08-22-18	REV. PER ENGINEER'S COMMENTS			
08-01-18	REV. PER ENGINEER'S COMMENTS			
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04-04-18	ADDITIONAL DESIGN			
03-01-18	INITIAL PREPARATION			
D.O.T. SHEET #	N.A.	D.E.C. SHEET #	N.A.	O.C.H.D. SHEET #
CAD #	04170	PROJECT #	04170.0	SCALE
CLUS 1-17				AS SHOWN

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GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft.



LEGEND

EXISTING PROPERTY LINE	---
PROPOSED PROPERTY LINE	---
PROPOSED BUILDING SETBACK	---
PROPOSED EASEMENT LINE	---
10' CONTOUR LINE	---
2' CONTOUR LINE	---
PROPOSED CONTOUR LINE	---
PROPOSED WATER MAIN	---
PROPOSED SEWER MAIN	---
PROPOSED STORM CULVERT	---
PROPOSED EDGE OF PAVEMENT	---
EXISTING EDGE OF PAVEMENT	---
EXISTING STONEWALL	---
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EXISTING OVER HEAD UTILITIES	---
EXISTING UTILITY POLE	---
USDA SOILS BOUNDARY	---
EXISTING WETLAND LIMIT	---
EXISTING STREAM	---
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VILLAGE VIEW
CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

SUBDIVISION
PLAN

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N.A.	N.A.	N.A.	5 OF 16
CAD # 04170	PROJECT #	SCALE	
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EXISTING PROPERTY LINE	---
PROPOSED PROPERTY LINE	---
PROPOSED BUILDING SETBACK	---
PROPOSED EASEMENT LINE	---
10' CONTOUR LINE	---
2' CONTOUR LINE	---
PROPOSED CONTOUR LINE	---
PROPOSED WATER MAIN	---
PROPOSED SEWER MAIN	---
PROPOSED STORM CULVERT	---
PROPOSED EDGE OF PAVEMENT	---
EXISTING EDGE OF PAVEMENT	---
EXISTING STONEWALL	---
EXISTING WIRE FENCE	---
EXISTING OVER HEAD UTILITIES	---
EXISTING UTILITY POLE	---
USDA SOILS BOUNDARY	---
EXISTING WETLAND LIMIT	---
EXISTING STREAM	---
EXISTING TREELINE	---

VILLAGE VIEW
CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

PROJECT TITLE

SUBDIVISION
PLAN

DRAWING TITLE

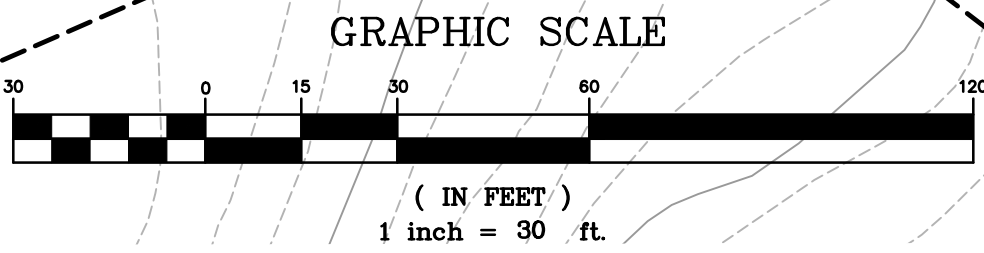
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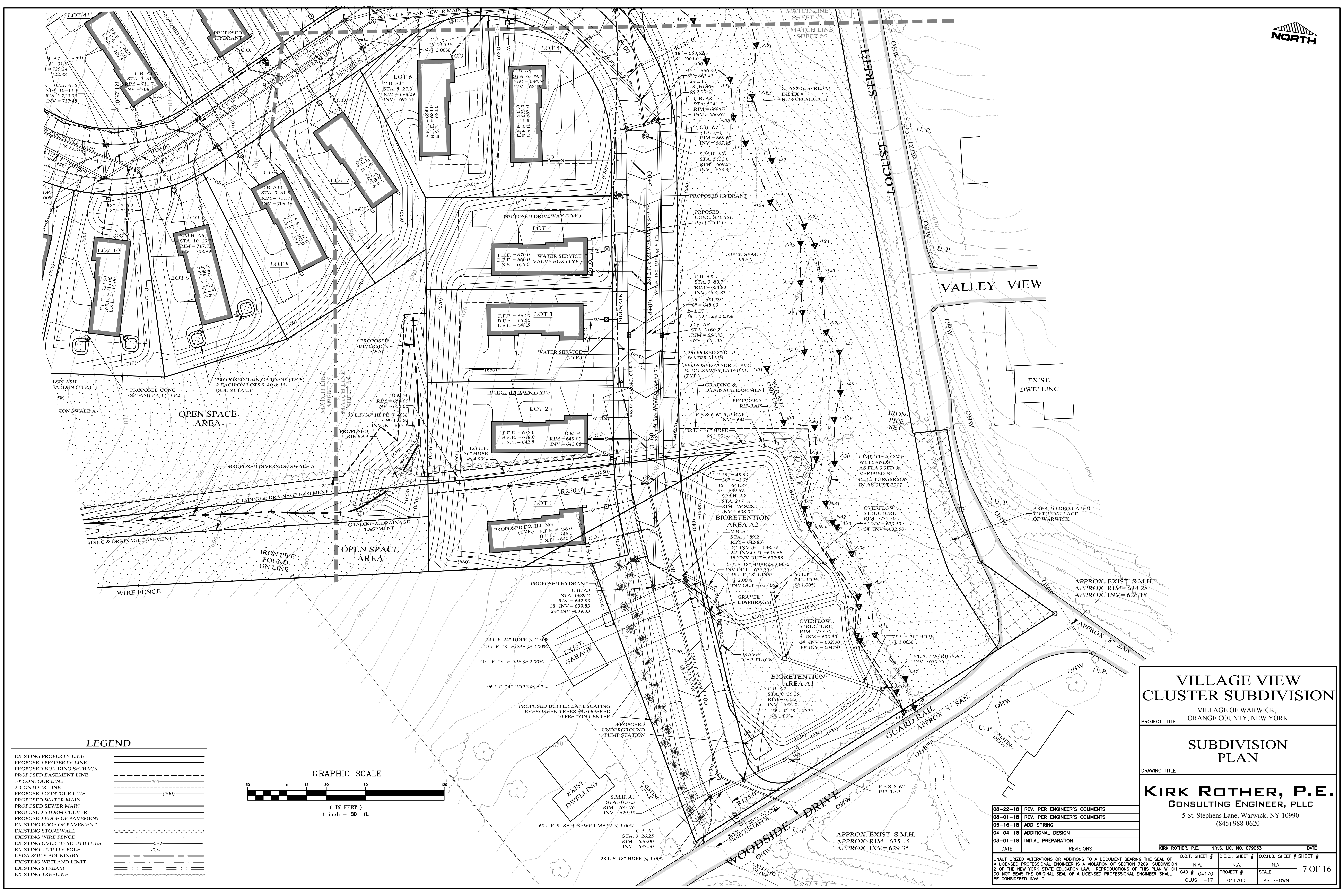
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KIRK ROTHER, P.E.	N.Y.S. LIC. NO. 079053	DATE
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6 OF 16





PROJECT TITLE	VILLAGE OF WARWICK, ORANGE COUNTY, NEW YORK
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PROJECT FILE

DRAWING TITLE	
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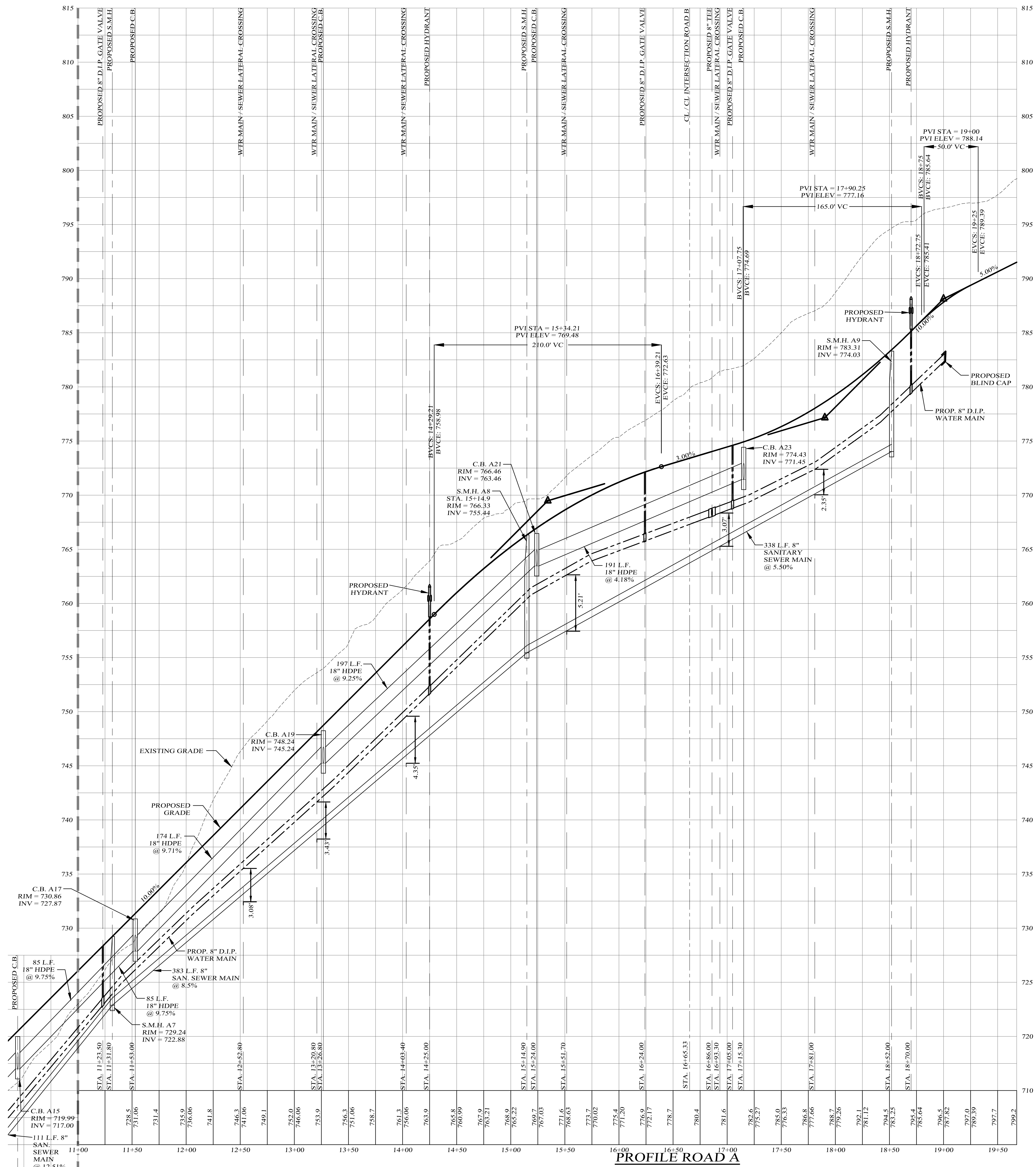
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5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

KIRK ROTHER, P.E.		N.Y.S. LIC. NO. 079053		DATE
BEARING THE SEAL OF N 7209, SUBDIVISION OF THIS PLAN WHICH L. ENGINEER SHALL	D.O.T. SHEET #	D.E.C.. SHEET #	O.C.H.D. SHEET #	SHEET #
	N.A.	N.A.	N.A.	7 OF 16
	CAD # 04170	PROJECT #	SCALE	
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VILLAGE VIEW
CLUSTER SUBDIVISION
VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

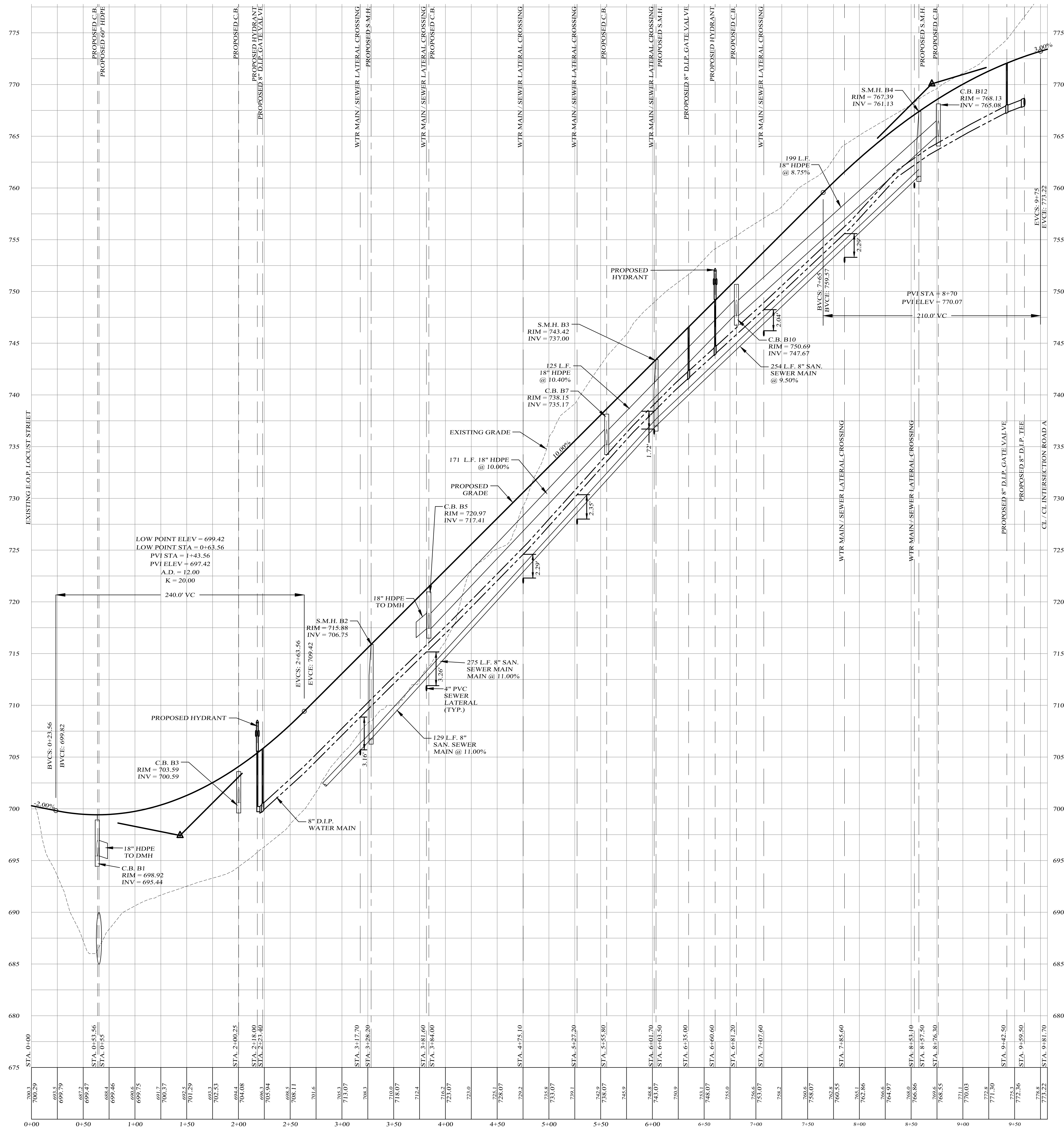
ROAD A
PROFILE

KIRK ROTHER, P.E.
CONSULTING ENGINEER, PLLC
5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

08-01-18	REV. PER ENGINEER'S COMMENTS
05-16-18	ADDITIONAL DESIGN
04-04-18	ADDITIONAL DESIGN
03-01-18	INITIAL PREPARATION
DATE	REVISIONS

D.O.T. SHEET #	D.E.C. SHEET #	O.C.H.D. SHEET #	SHEET #
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PROFILE ROAD B

SCALES:
HOR: 1" = 50'
VER: 1" = 5'

**VILLAGE VIEW
CLUSTER SUBDIVISION**
VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK
PROJECT TITLE

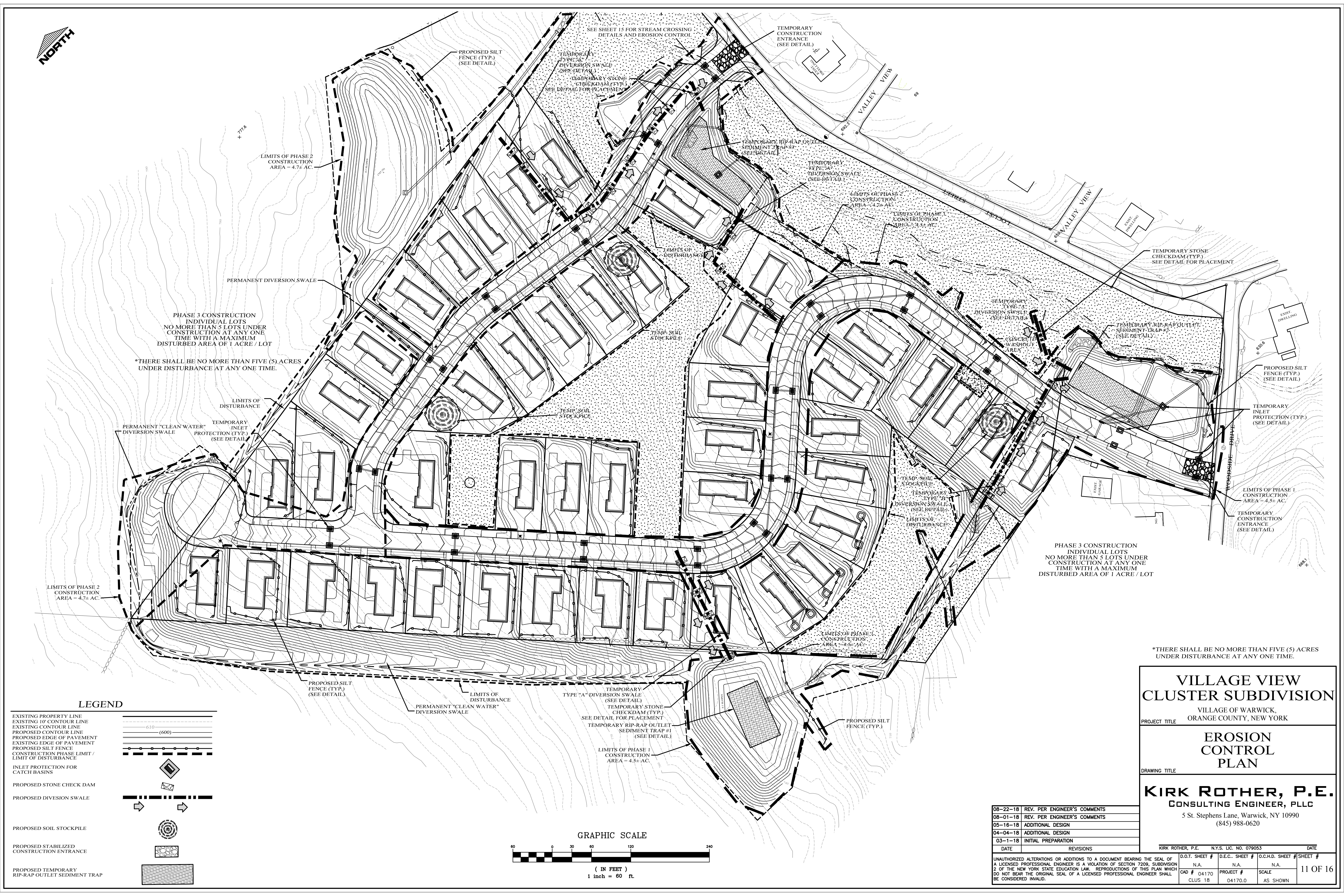
**ROAD B
PROFILE**
DRAWING TITLE

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CONSULTING ENGINEER, PLLC
5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

DATE	REVISIONS
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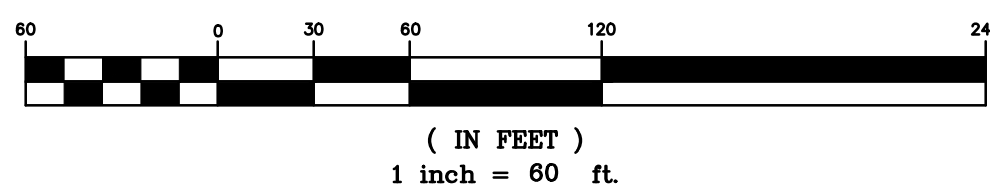
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N.A.	N.A.	N.A.	10 OF 16
CAD #	PROJECT #	SCALE	
CLUS 1-17	04170.0	AS SHOWN	



LEGEND

- EXISTING PROPERTY LINE
- EXISTING 10' CONTOUR LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF PAVEMENT
- PROPOSED SILT FENCE
- CONSTRUCTION PHASE LIMIT / LIMIT OF DISTURBANCE
- INLET PROTECTION FOR CATCH BASINS
- PROPOSED STONE CHECK DAM
- PROPOSED DIVISION SWALE
- PROPOSED SOIL STOCKPILE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY RIP-RAP OUTLET SEDIMENT TRAP

GRAPHIC SCALE



*THERE SHALL BE NO MORE THAN FIVE (5) ACRES UNDER DISTURBANCE AT ANY ONE TIME.

VILLAGE VIEW
CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

EROSION
CONTROL
PLAN

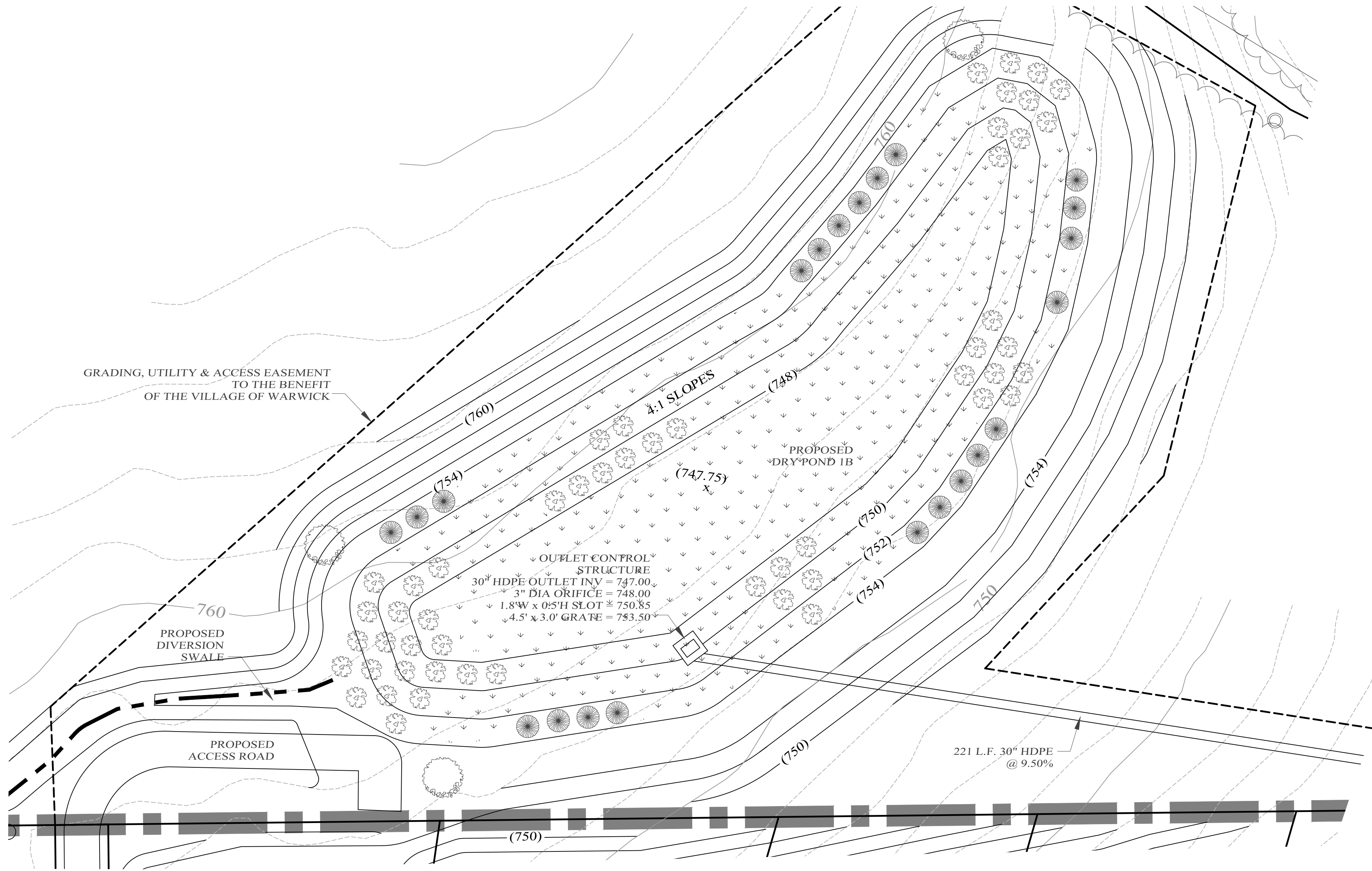
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5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

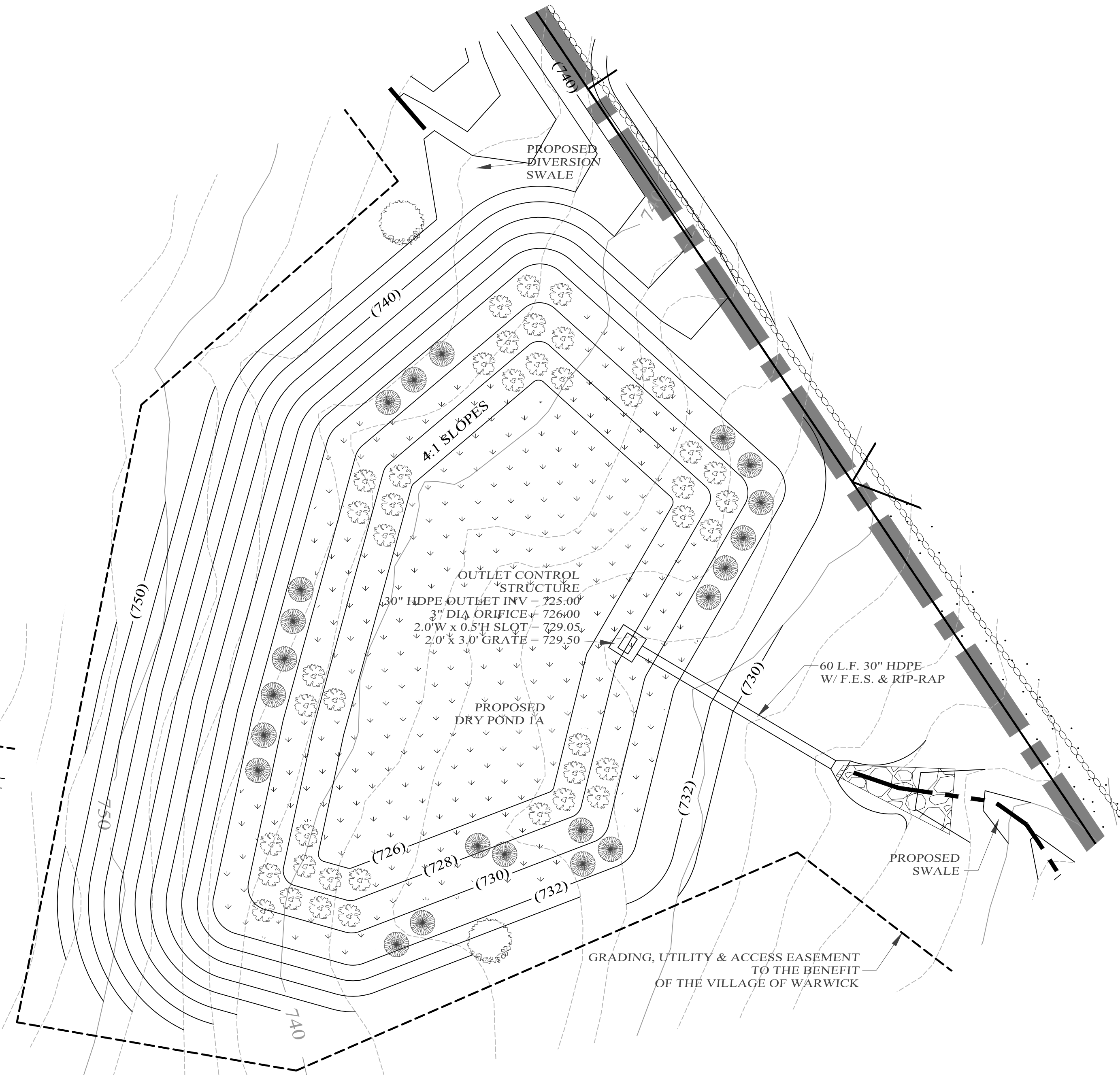
DATE	REV.	PER ENGINEER'S COMMENTS
08-22-18	REV.	PER ENGINEER'S COMMENTS
08-01-18	REV.	PER ENGINEER'S COMMENTS
05-16-18	ADDITIONAL	DESIGN
04-04-18	ADDITIONAL	DESIGN
03-1-18	INITIAL	PREPARATION

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO A DOCUMENT BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. REPRODUCTIONS OF THIS PLAN WHICH DO NOT BEAR THE ORIGINAL SEAL OF A LICENSED PROFESSIONAL ENGINEER SHALL BE CONSIDERED INVALID.

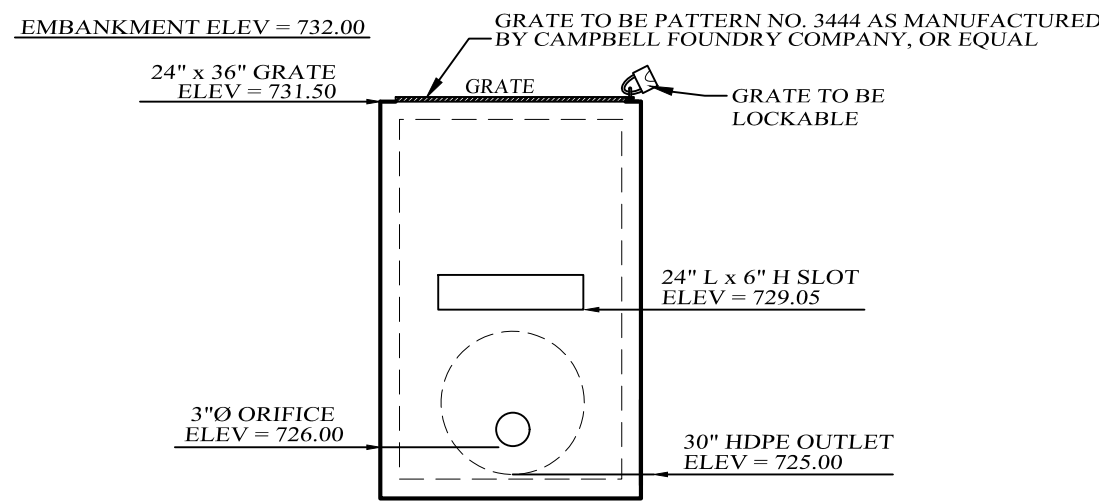
D.O.T. SHEET #	N.Y.S. SHEET #	O.C.H.D. SHEET #	SHEET #
N.A.	N.A.	N.A.	11 OF 16
CAD # 04170	PROJECT #	SCALE	
CLUS 18	04170.0	AS SHOWN	



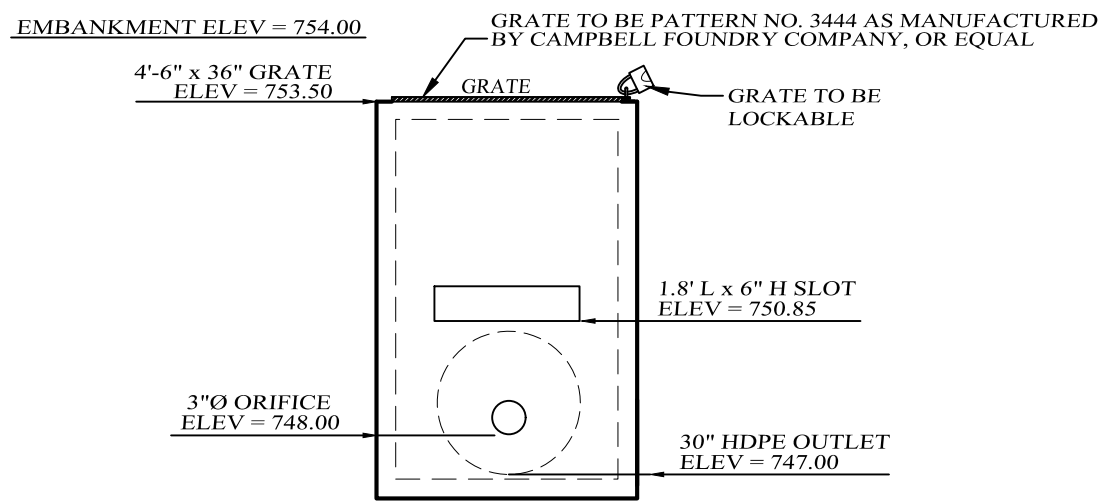
DRY STORMWATER MANAGEMENT DETENTION POND B
SCALE: 1" = 20'



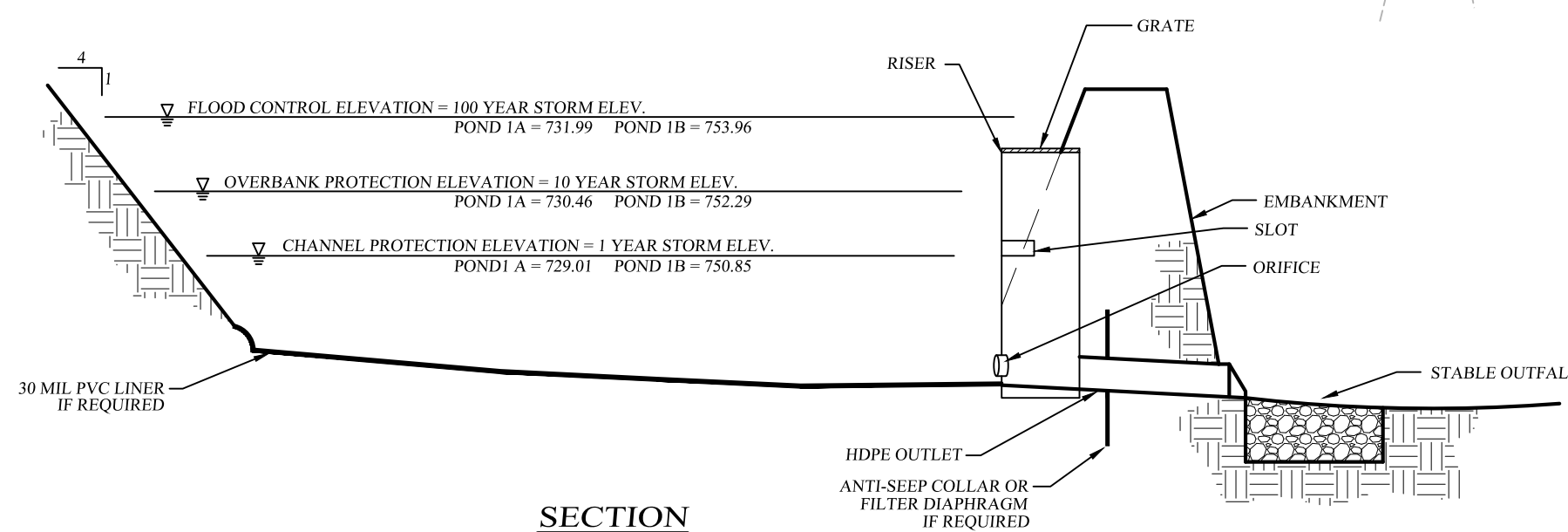
DRY STORMWATER MANAGEMENT DETENTION POND A
SCALE: 1" = 20'



SECTION
DRY DETENTION POND 1A
OUTLET CONTROL DETAIL
NOT TO SCALE



SECTION
DRY DETENTION POND 1B
OUTLET CONTROL DETAIL
NOT TO SCALE



SECTION
TYPICAL DRY STORMWATER MANAGEMENT POND DETAIL
NOT TO SCALE

SYMBOL	PLANT NAME	POND PLANTING ZONE	SCIENTIFIC NAME
	SYCAMORE	4	PLATANUS OCCIDENTALIS
	SILKY DOGWOOD	4	CORNUS AMOMIUM
	SEDGES	3	CAREX SPP
	SWITCHGRASS	3 & 4	PANICUM VIRGATUM

NOTES:
1. WOODY VEGETATION MAY NOT BE PLANTED OR ALLOWED TO GROW WITHIN 15 FEET OF THE TOE OF EMBANKMENT AND 25 FEET FROM THE PRINCIPAL SPILLWAY STRUCTURE.

HYDROLOGIC ZONES		
ZONE #	ZONE DESCRIPTION	HYDROLOGIC CONDITIONS
ZONE 1	DEEP WATER POOL	1-4 FEET DEEP PERMANENT POOL
ZONE 2	SHALLOW WATER BENCH	6 INCHES TO 1 FOOT DEEP
ZONE 3	SHORELINE FRINGE	REGULARLY INUNDATED
ZONE 4	RIPARIAN FRINGE	PERIODICALLY INUNDATED
ZONE 5	FLOODPLAIN TERRACE	INFREQUENTLY INUNDATED
ZONE 6	UPLAND SLOPES	SELDOM OR NEVER INUNDATED

LEGEND	
EXISTING PROPERTY LINE	---
PROPOSED PROPERTY LINE	---
MINIMUM SETBACK LINE	---
EXISTING WETLANDS LINE	---
EXISTING STONEWALL	---
EXISTING WIRE FENCE	---
EXISTING OVER HEAD UTILITIES	---
USDA SOILS BOUNDARY	---
EXISTING TREELINE	---
EXISTING EDGE OF PAVEMENT	---
PROPOSED SILT FENCE	---
PROPOSED SWALE	---

VILLAGE VIEW CLUSTER SUBDIVISION

VILLAGE OF WARWICK,
ORANGE COUNTY, NEW YORK

DETENTION POND DETAILS

DRAWING TITLE

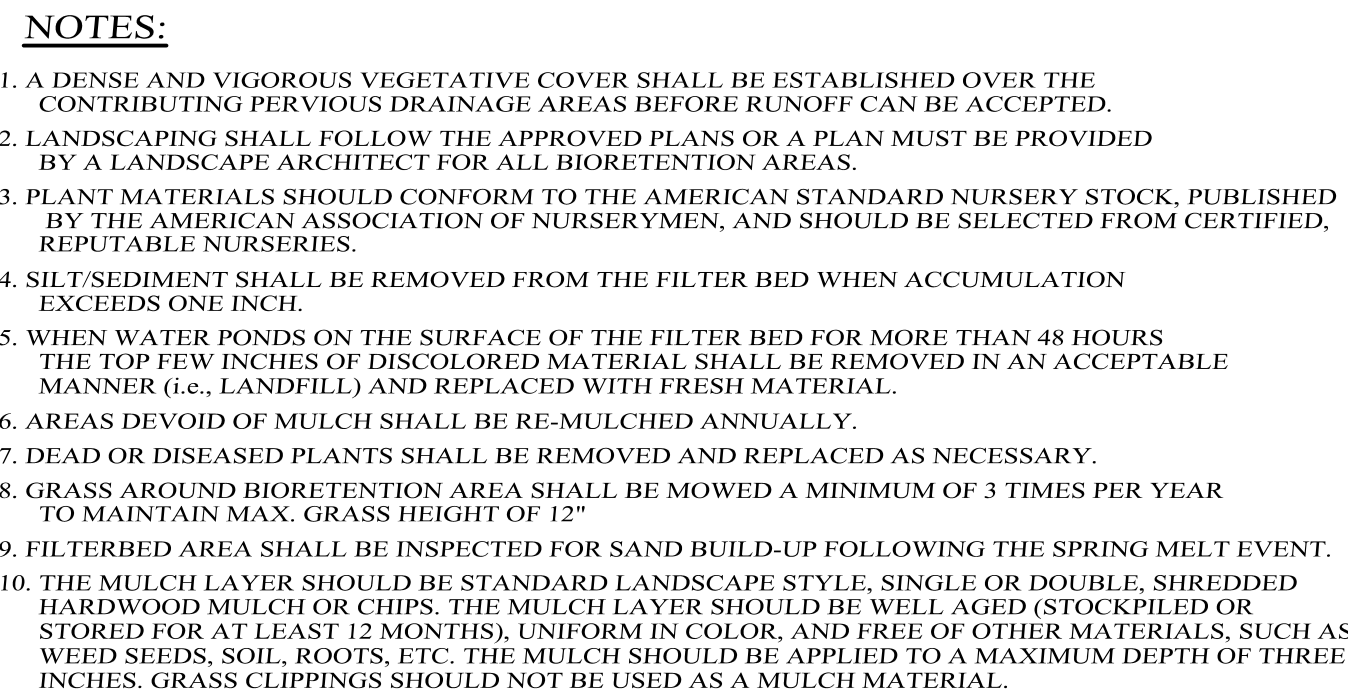
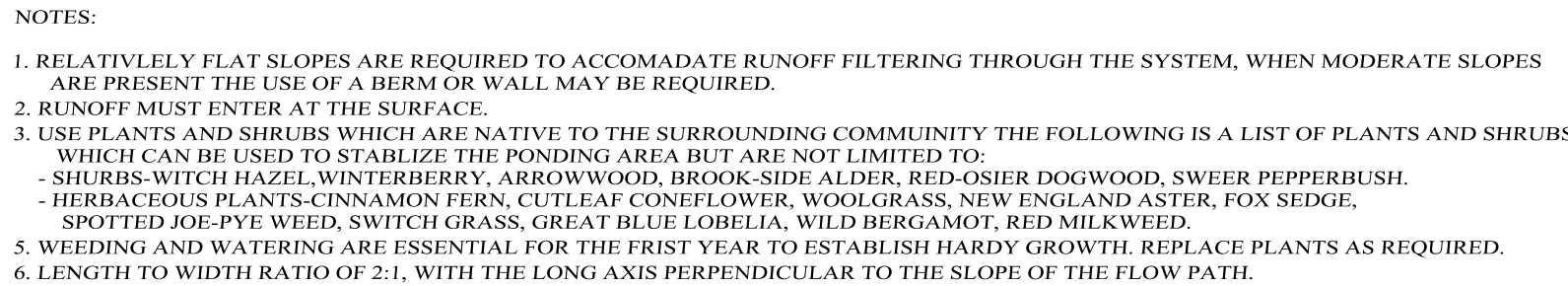
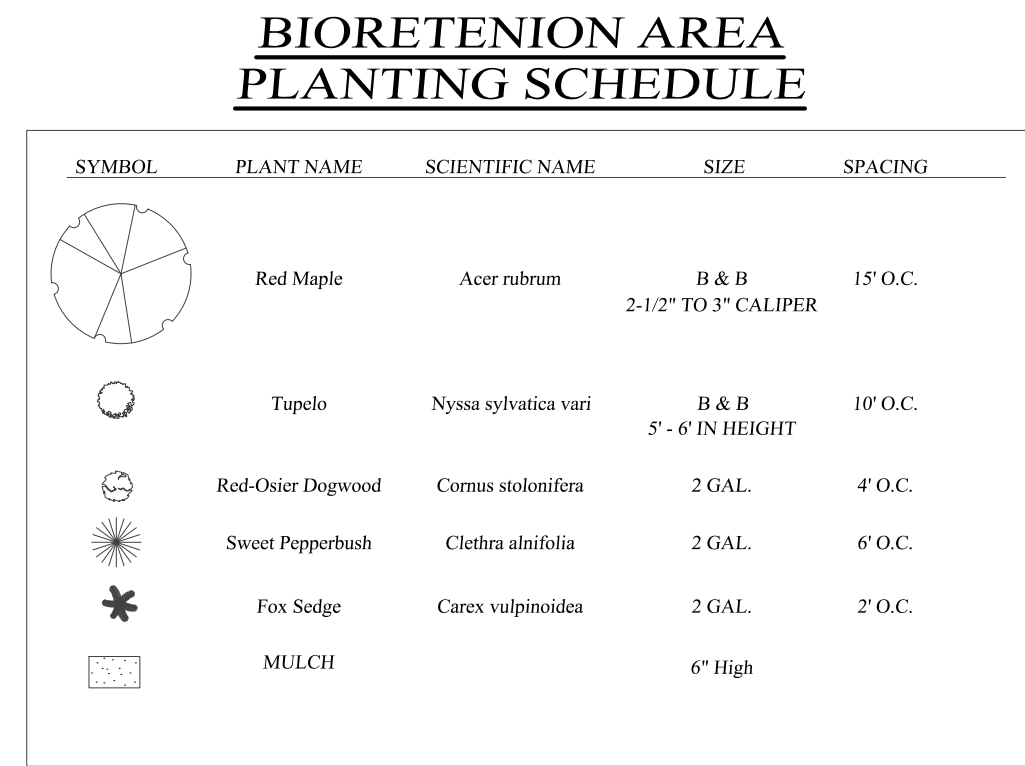
KIRK ROTHER, P.E.
CONSULTING ENGINEER, PLLC

5 St. Stephens Lane, Warwick, NY 10990
(845) 988-0620

DATE	REVISIONS
08-22-18	REV. PER ENGINEER'S COMMENTS
08-01-18	REV. PER ENGINEER'S COMMENTS
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D.O.T. SHEET #	D.E.C. SHEET #	O.C.H.D. SHEET #	SHEET #
N.A.	N.A.	N.A.	12 OF 16
CAD # 04170	PROJECT #	SCALE	
CLUS 1-17	04170.0	AS SHOWN	



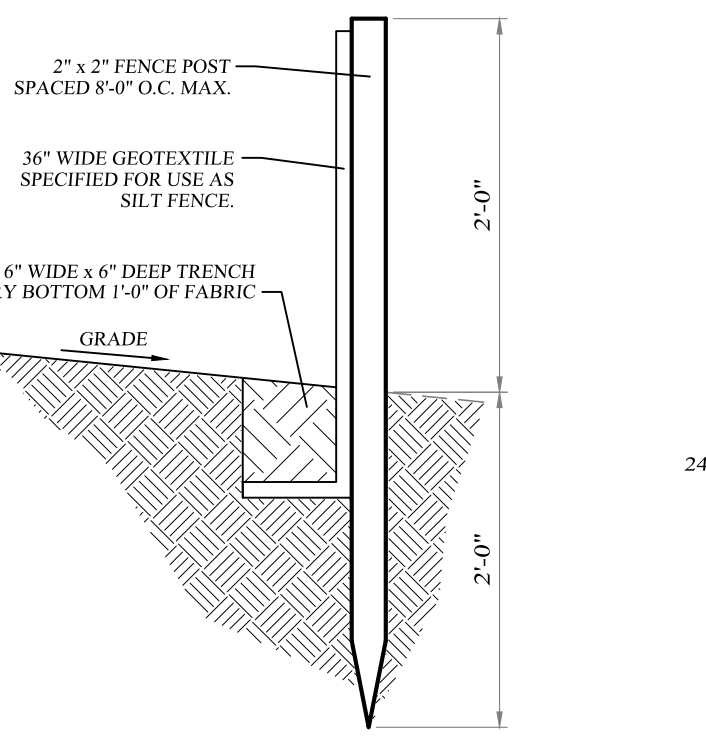
<u>WATER QUALITY TABLE</u>			
WATER QUALITY AREA #	TOTAL TRIBUTARY AREA (AC.)	PROPOSED IMPERVIOUS AREA (AC.)	PROPOSED WATER QUALITY PRACTICE
1	9.51	3.41	BIORETENTION / STREET TREES
2	3.03	1.28	BIORETENTION / STREET TREES
3	1.47	0.57	BIORETENTION / STREET TREES
4	0.50	0.15	RIPARIAN BUFFER
5	0.13	0.06	RIPARIAN BUFFER
6	0.68	0.25	RAIN GARDENS
7	0.05	0.03	UNDISTURBED VEGETATIVE FILTER STRIP



08-22-18	REV. PER ENGINEER'S COMMENTS
08-01-18	REV. PER ENGINEER'S COMMENTS
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03-01-18	INITIAL PREPARATION
DATE	REVISIONS

<div>VILLAGE VIEW CLUSTER SUBDIVISION</div> <div>VILLAGE OF WARWICK, ORANGE COUNTY, NEW YORK</div> <div>PROJECT TITLE</div> <div>BIORETENTION AREA DETAILS</div> <div>DRAWING TITLE</div> <div>KIRK ROTHER, P.E. CONSULTING ENGINEER, PLLC 5 St. Stephens Lane, Warwick, NY 10990 (845) 988-0620</div> <div><div>KIRK ROTHER, P.E. N.Y.S. LIC. NO. 079053 DATE</div><div><div>SEAL OF THE TOWN OF WARWICK THIS PLAN WHICH ENGINEER SHALL</div><div>D.O.T. SHEET # N.A. CAD # 04170 CLUS 1-17</div><div>D.E.C. SHEET # N.A. PROJECT # 04170.0</div><div>O.C.H.D. SHEET # N.A. SCALE AS SHOWN</div><div>SHEET # 13 OF 16</div></div></div>				
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FENCE PROPERTIES	MINIMUM VALUE	STANDARD
GRAB TENSILE STRENGTH (LBS)	90	ASTM D1682
ELONGATION AT FAILURE (%)	50	ASTM D1682
MULEN BURST STRENGTH (PSI)	190	ASTM D3786
PUNCTURE STRENGTH (LBS)	40	ASTM D751 (MODIFIED)
SLURRY FLOW RATE (GAL/MIN/SF)	0.3	
EQUILIVENT OPENING SIZE	40-80	US STD SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY (%)	90	ASTM G-26

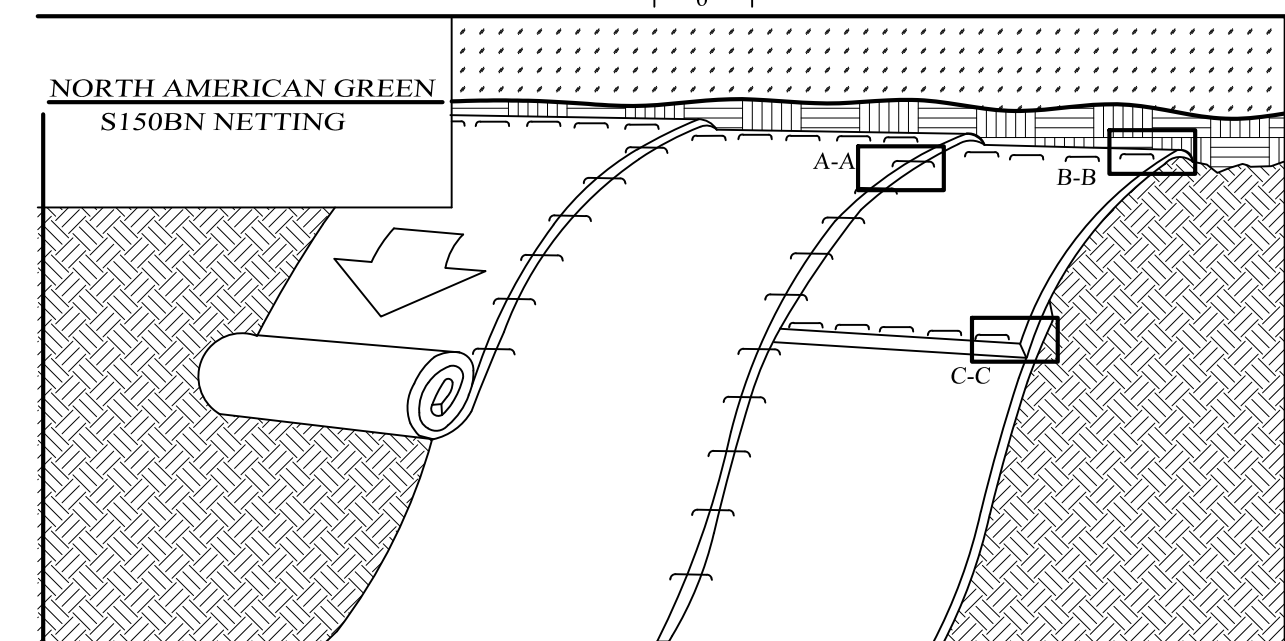
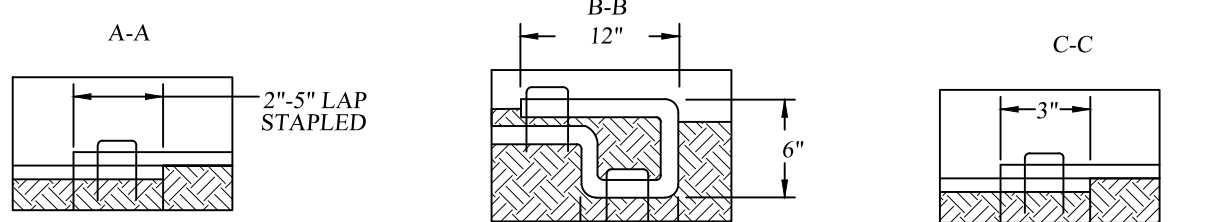


SLOPE STEEPNESS	MAXIMUM FENCE SPACING (FT)
2:1	50
3:1	75
4:1	125
5:1	175
FLATTER THAN 5:1	200

- NOTES:
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED 24" MAX.
 - ALL SILT FENCES SHALL RUN PARALLEL TO THE CONTOUR OF THE LAND
 - ALL SILT FENCING SHALL MEET THE MINIMUM REQUIREMENTS AS STATED UNLESS OTHERWISE NOTED AND APPROVED BY THE BUILDING INSPECTOR AND ENGINEER
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE
 - EVERY 24" AT TOP AND MID SECTION

FILTER FABRIC SILT FENCE DETAIL

NOT TO SCALE

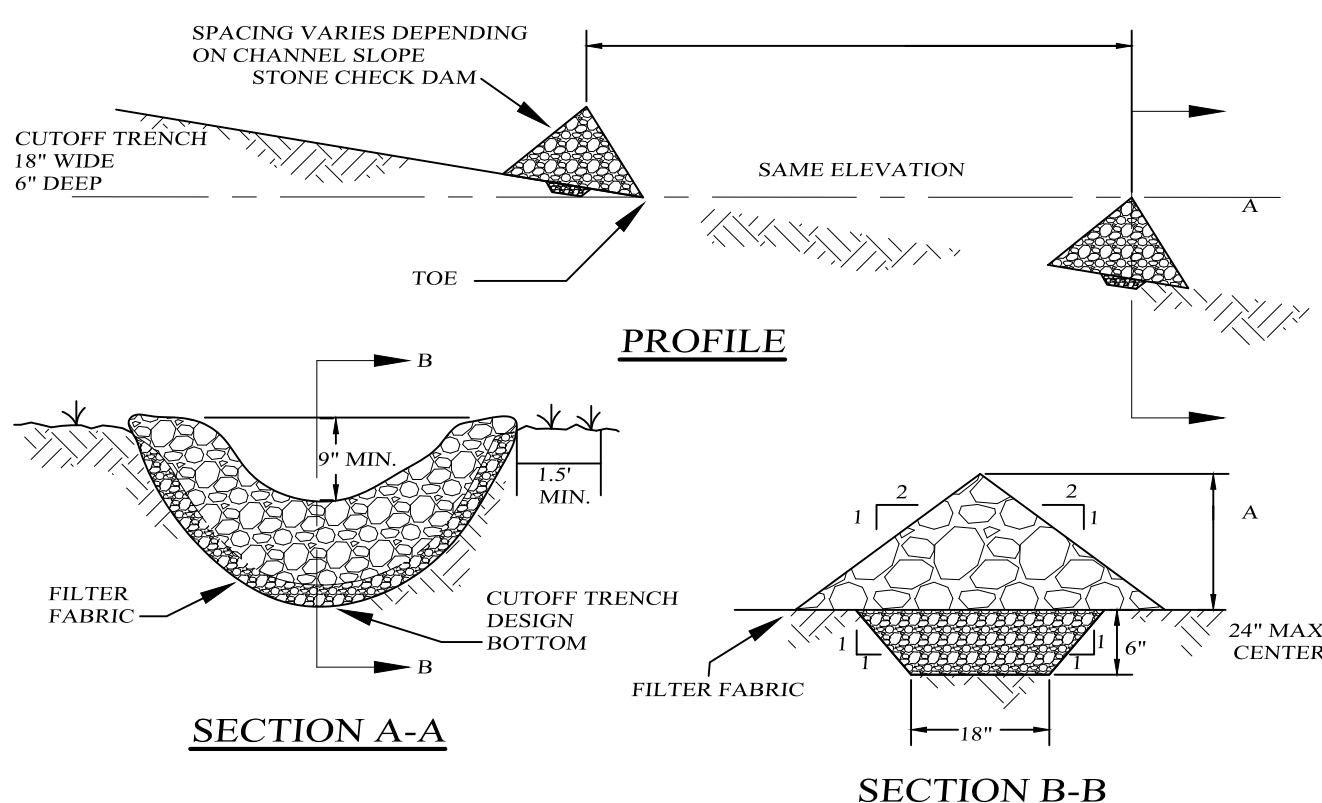


CONSTRUCTION SPECIFICATIONS:

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), 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. A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE ADDED PRIOR TO STABILIZATION.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECPs BACK OVER SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECPs.
 - ROLL THE RECPs (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH APPROXIMATELY 24" x 5" (6 CM x 12.5 CM) OVERLAP DEPENDING ON RECPs TYPE.
 - CONSECUTIVE RECPs SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAP AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECPs WIDTH.
- NOTE:
- IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECPs.

ROLLED EROSION CONTROL MATTING SLOPE STABILIZATION DETAIL

NOT TO SCALE

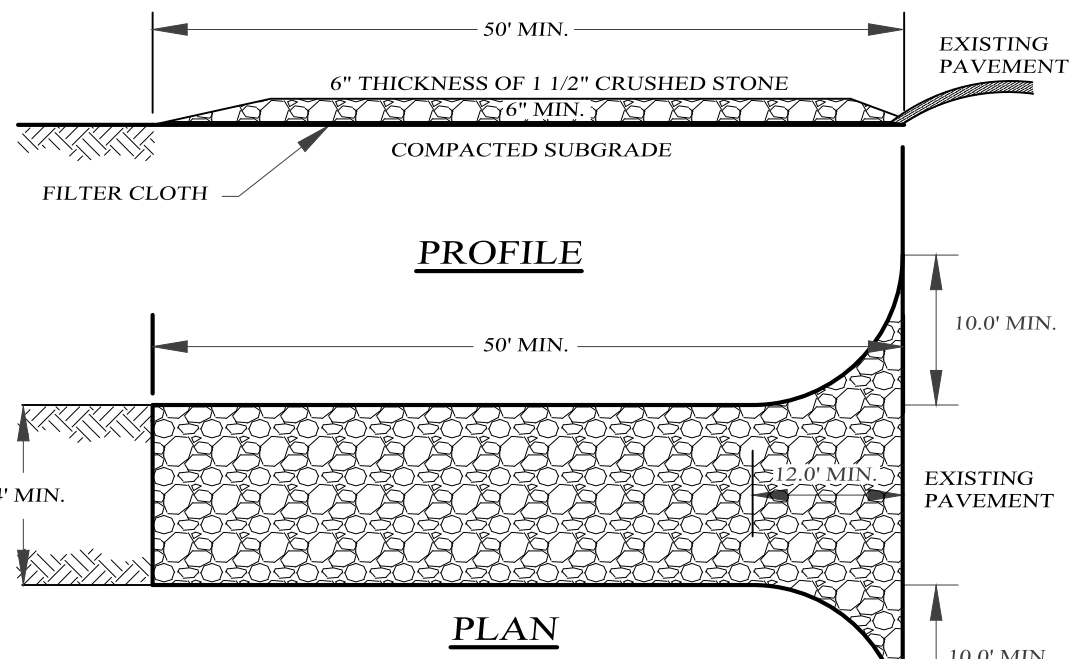


CONSTRUCTION SPECIFICATIONS:

- STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
- SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATION OF THE CREST OF THE DOWN STREAM DAM IS AT THE SAME ELEVATION OF THE TOP OF THE UPSTREAM DAM.
- EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
- PROTECT THE CHANNEL FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
- ENSURE THAT CHANNEL APPEARANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
- MAXIMUM DRAINAGE AREA IS 2 ACRES ABOVE THE CHECK DAM.

CHECK DAM DETAILS

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

- ENTRANCE SHALL BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC R.O.W.
- A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET WILL BE INSTALLED WHERE A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. THE BLANKET SHALL BE COMPOSED OF 6" DEPTH OF 1 1/2" CRUSHED STONE. SHALL BE AT LEAST 24" x 50" FOR THE ROAD ENTRANCE AND 12" x 25" FOR DRIVEWAYS, AND SHALL BE PLACED ON COMPACTED SUB-GRADE.
- A FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

TEMPORARY SEEDING SPECIFICATIONS

AREAS REMAINING DISTURBED FOR 14 DAYS OR MORE SHALL BE STABILIZED AS FOLLOWS:

SCARIFY SOILS IF COMPACTED, LIME TO pH OF 6.0 IF REQUIRED, FERTILIZE WITH 600 LBS/ACRE 5-10-10 FERTILIZER IF REQ., SEED WITH SPECIES AND RATE SHOWN BELOW, MULCH WITH HAY OR STRAW AT A RATE OF 2 TONS/ACRE, ANCHOR MULCH WITH NETTING OF WOOD FIBER OR JUTE IF STEEP SLOPE OR HIGH POTENTIAL FOR EROSION.

APPLICATION RATE
RYEGRASS (ANNUAL OR PERENNIAL) (USE WINTER RYE IF SEEDING IN OCT.-NOV.)
30 LBS/ACRE (0.7 LBS/1000 SF)

PERMANENT SEEDING MIXTURES

SPECIES	APPLICATION RATE
MODERATE TO STEEP SLOPES AND LOW MAINTENANCE AREAS	
EMPIRE BIRDSFOOT TREFOIL	8 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
5 LBS/ACRE	
SPECIES	APPLICATION RATE
GENERAL RECREATION AREAS AND LAWNS	
SUNNY SITES (WELL, MODERATELY WELL, AND SOMEWHAT POORLY DRAINED SOILS)	
65% KENTUCKY BLUEGRASS BLEND	85-114 LBS/ACRE
20% PERENNIAL RYEGRASS	26-35 LBS/ACRE
15% FINE FESCUE	19-26 LBS/ACRE
SUNNY DROUGHTY SITES (SOMEWHAT TO EXCESSIVELY DRAINED SOILS)	
65% FINE FESCUE	114-143 LBS/ACRE
15% PERENNIAL RYEGRASS	26-33 LBS/ACRE
20% KENTUCKY BLUEGRASS BLEND	33-44 LBS/ACRE

- SITE PREPARATION**
- INSTALL NEEDED WATER AND EROSION CONTROL MEASURES AND BRING AREA TO BE SEED TO DESIRED GRADES USING A MINIMUM OF 4" OF TOPSOIL.
 - PREPARE SEED BED BY LOOSENING SOIL TO A DEPTH OF 4-6 INCHES.
 - LIME TO A pH OF 6.5.
 - FERTILIZE PER SOIL TESTS, OR, IF FERTILIZER IS TO BE APPLIED BEFORE SOIL TESTS, APPLY 850 POUNDS OF 5-10-10 OR EQUIVALENT PER ACRE (20 LBS./1000 SQ. FT.).
 - INCORPORATE LIME AND FERTILIZER IN TOP 2-4 INCHES OF SOIL.
 - SMOOTH. REMOVE ALL STONES OVER 1" IN DIAMETER, STICKS AND FOREIGN MATTER. FIRM SEED BED.
 - APPLY SEED PER PERMANENT SEEDING SPECIFICATIONS.

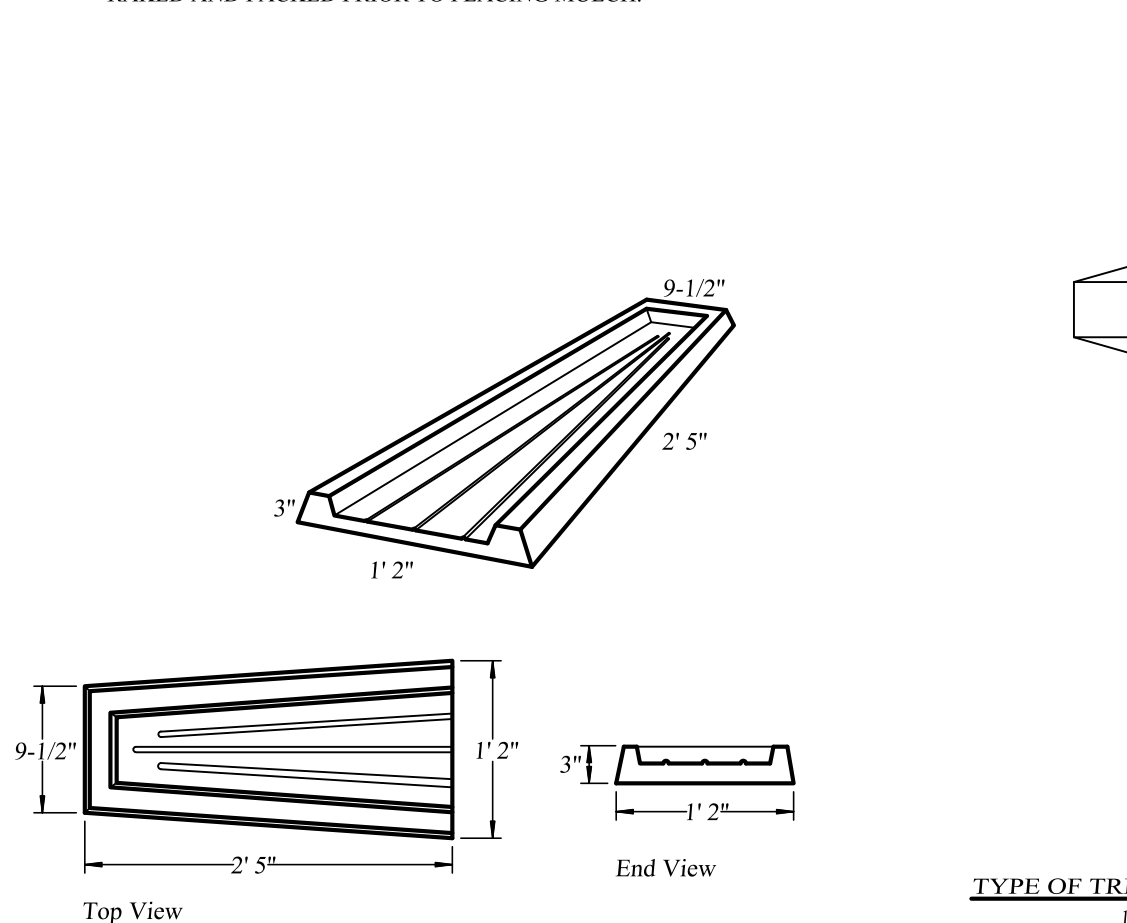
SLOPE STABILIZATION, SEEDING METHOD & MULCHING

SLOPES OF 4:1 OR GREATER (HORIZONTAL-VERTICAL)

SLOPES SHALL BE HYDROSEEDING WITH THE MIXTURES AND RATES INDICATED IN THE PERMANENT SEEDING MIXTURE SCHEDULE. STRAW OR HAY MULCH SHALL BE APPLIED AT A RATE OF 2 TONS/ACRE. STRAW OR HAY MULCH SHALL BE ANCHORED WITH BioD-Mesh60 NETTING AS MANUFACTURED BY ROLANKA INTERNATIONAL OR APPROVED EQUIVALENT. NETTING TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

GENTLE SLOPES AND FLAT AREAS

AREAS SHALL BE SEED BY HYDROSEEDING OR BROADCASTING WITH THE MIXTURES AND RATES INDICATED ON THE PERMANENT SEEDING MIXTURE SCHEDULE. HYDROSEEDING AREAS SHALL BE MULCHED WITH A WOOD FIBER MULCH APPLIED AT A RATE OF 500 LBS/ACRE. BROADCAST AREAS SHALL MULCHED WITH HAY OR STRAW AT A RATE OF 2 TONS/ACRE. AREAS SEED BY BROADCASTING SHALL BE LIGHTLY RAKED AND PACKED PRIOR TO PLACING MULCH.

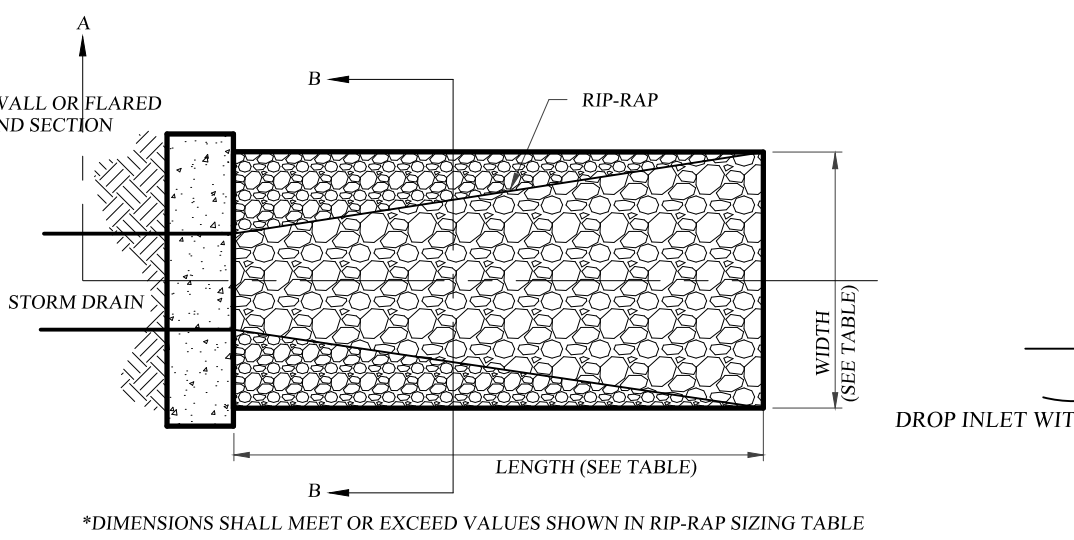


NOTE:

AS MANUFACTURED BY WOODARD'S CONCRETE MODEL SSB OR APPROVED EQUAL.

CONCRETE SPLASH PAD DETAIL

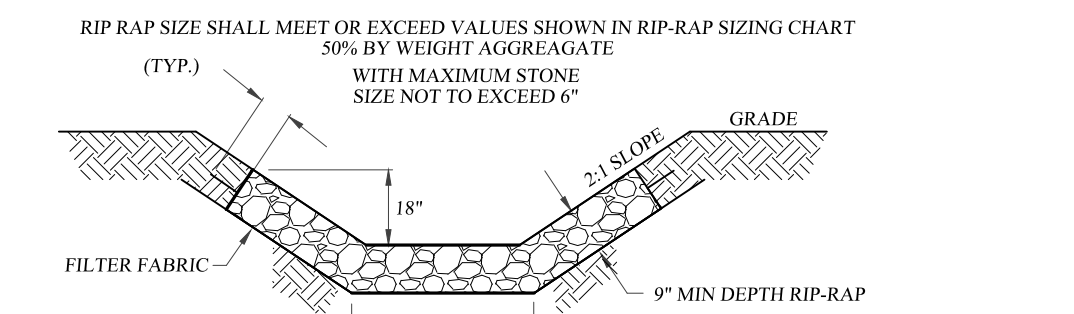
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

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- A FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

SECTION A-A



SECTION B-B RIP-RAP OUTLET DETAIL

NOT TO SCALE

OUTLET SIZING TABLE

OUTLET	LENGTH	TOP WIDTH	BOTTOM WIDTH
F.E.S. 1	10'	7.5"	18.5"
F.E.S. 2	10'	4.5"	11.5"
F.E.S. 3	12"	6"	14"
F.E.S. 4	10'	4.5"	11.5"
F.E.S. 5	10'	7.5"	18.5"
F.E.S. 6	20"	9"	23"
F.E.S. 7	10'	7.5"	18.5"
F.E.S. 8	10'	4.5"	11.5"

RYEGRASS (ANNUAL OR PERENNIAL)
(USE WINTER RYE IF SEEDING IN OCT.-NOV.)

30 LBS/ACRE
(0.7 LBS/1000 SF)

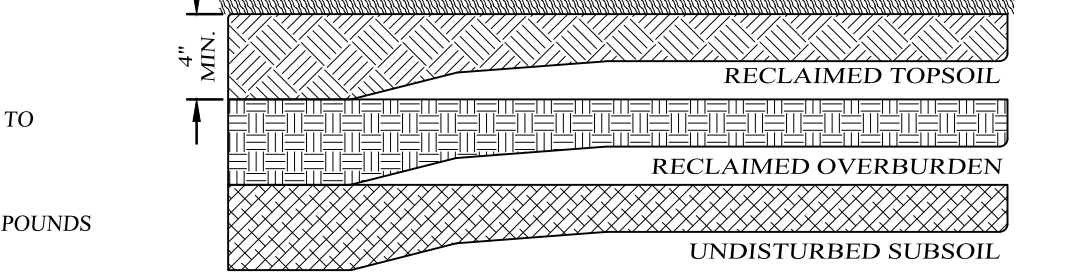
80% SHADE TOLERANT KENTUCKY BLUEGRASS BLEND

70% ROUGH BLUEGRASS

20% PERENNIAL RYEGRASS

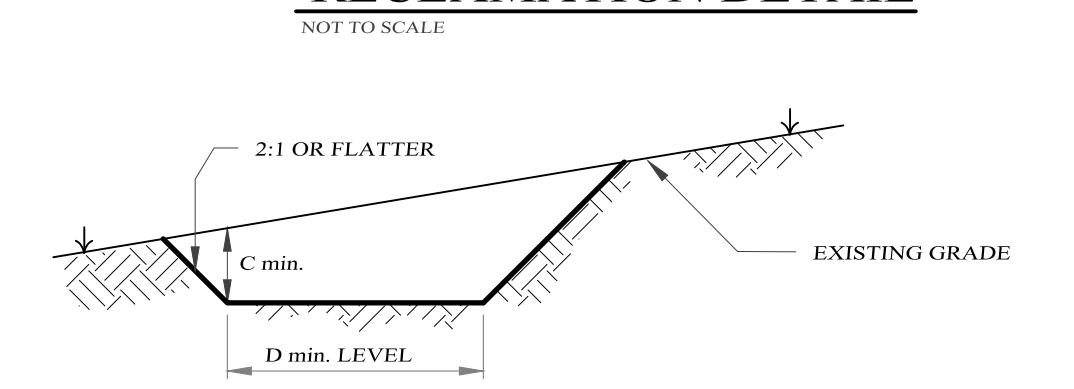
SHADY WET SITES (SOMEWHAT POOR TO POORLY DRAINED SOILS)

80% SHADE TOLERANT KENTUCKY BLUEGRASS BLEND

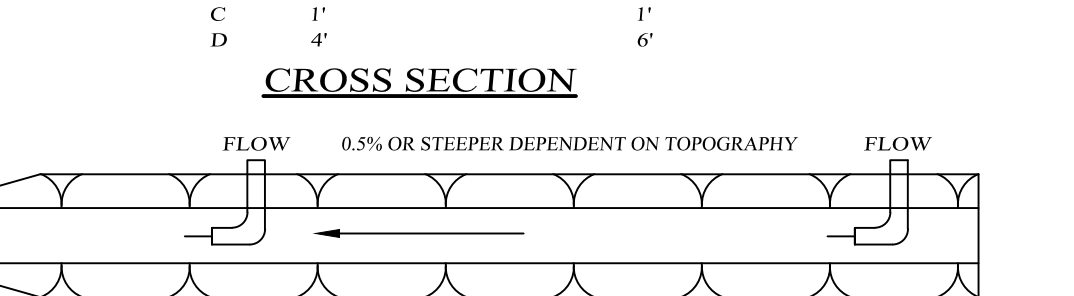


RECLAMATION DETAIL

NOT TO SCALE



CROSS SECTION



PLAN VIEW

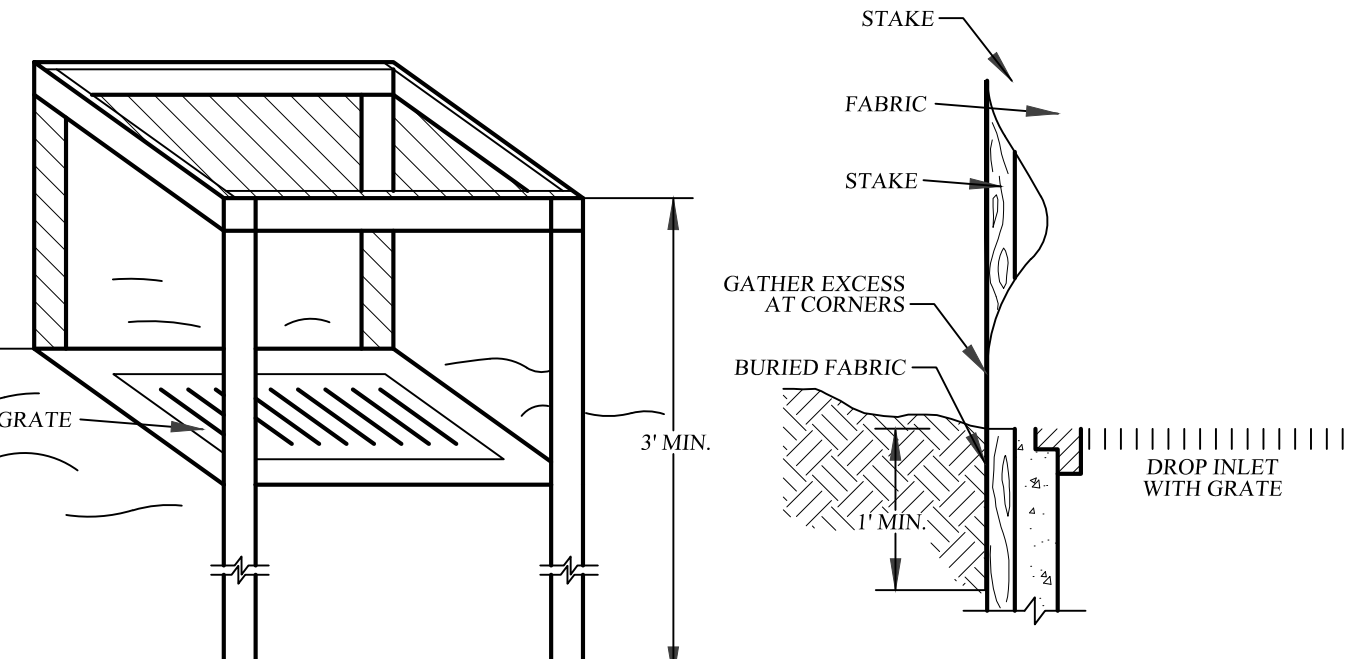
- CONSTRUCTION SPECIFICATIONS:**
- ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
 - DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
 - DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
 - ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBSTRUCTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
 - THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER REGULARITIES WHICH IMPED NORMAL FLOW.
 - ALL FILLS ARE TO BE MECHANICALLY COMPACTED.
 - ALL EARTH REMOVED AND NOT NEEDED SHALL BE PLACED AS NOT TO INTERFERE WITH THE FUNCTIONING OF THE SWALE.
 - REFER TO CHART FOR STABILIZATION OF FLOW CHANNEL.
 - PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (S AC OR LESS)	B (S AC-10 AC)
1.	0.5-1.0	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2.	1.1-1.5	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELISOR
3.	1.6-2.0	SEED WITH JUTE OR EXCELISOR-SD	LINED RIP-RAP 4-8"
4.	2.1-3.0	LINED 4-8" RIP-RAP	RECYCLED CONCRETE EQUIVALENT

TEMPORARY DIVERSION SWALE DETAIL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

- FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
- CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
- STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
- SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM OF 18" DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
- FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
- A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW STABILITY.

FILTER FABRIC DROP INLET PROTECTION

NOT TO SCALE

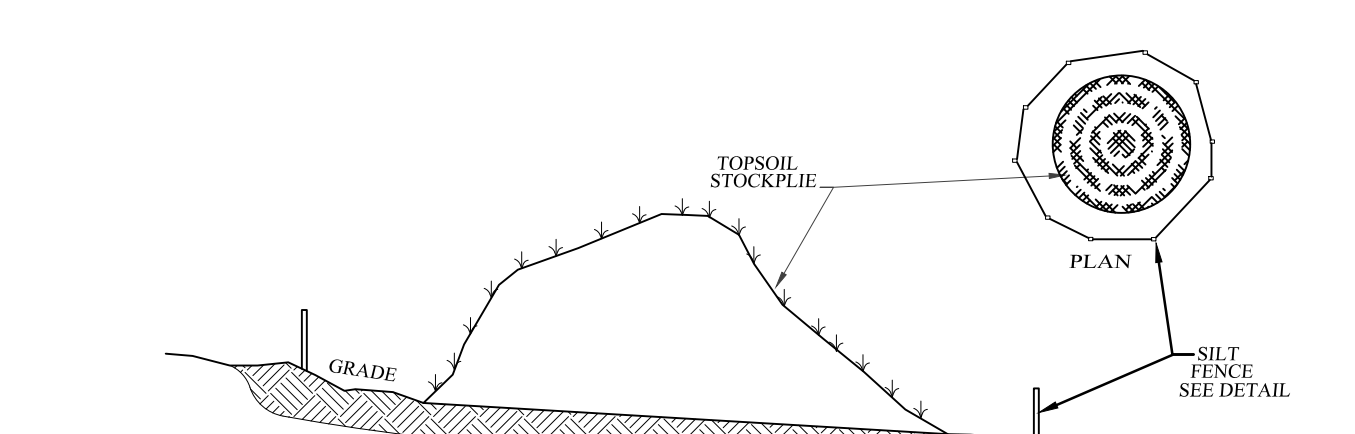


CONSTRUCTION AND MAINTENANCE SPECIFICATIONS:

- SEE PLAN FOR CONCRETE WASHOUT AREA (C.W.A.) INSTALLATION LOCATION.
- AN UNLINED C.W.A. SHALL NOT BE INSTALLED WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY, OR WITHIN 1,000' OF ANY WELLS OR DRINKING WATER. IF SEPARATION REQUIREMENTS CANNOT BE MET, OR IF HIGHLY PERMEABLE SOILS EXIST WITHIN THE SITE, THE C.W.A. MUST BE INSTALLED WITH AN IMPERMEABLE LINER (6 MIL. MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE-GROUND STORAGE AREA SHOULD BE USED.
- THE C.W.A. SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON THE SITE.
- THE C.W.A. SHALL INCLUDE A FLAT SUBSURFACE PIT (8' x 8' MIN.). SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE A MINIMUM OF 3' DEEP.
- A BERM SHALL SURROUND THE SIDES AND BACK OF THE C.W.A. AND SHALL HAVE A MINIMUM HEIGHT OF 1'.
- THE VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARD THE C.W.A.
- SIGNS SHALL BE PLACED AT THE C.W.A. AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE C.W.A. TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCT.
- THE C.W.A. SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN THE PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE C.W.A. SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- UPON REMOVAL OF THE C.W.A. THE DISTURBED AREA SHALL BE COVERED IN TOPSOIL, SEEDDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

CONCRETE WASHOUT AREA DETAIL

NOT TO SCALE



TOPSOIL STOCKPILE DETAIL

NOT TO SCALE

- NOTES:
- TOPSOIL STOCKPILE TO BE SEED AS PER THE TEMPORARY SEEDING SPECIFICATIONS.
 - SILT FENCE TO BE INSTALLED DOWN GRADIENT OF STOCKPILE.

CONSTRUCTION SPECIFICATIONS:

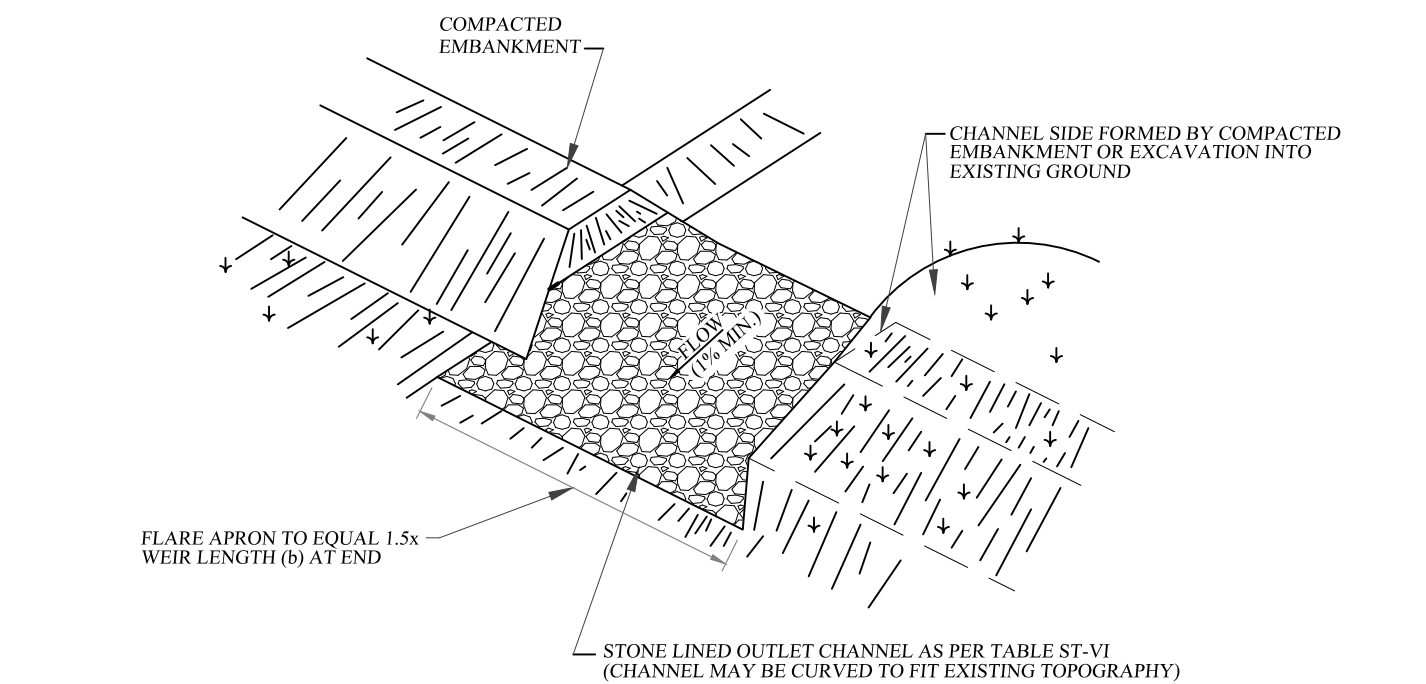
- ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
- DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
- DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
- ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBSTRUCTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
- THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER REGULARITIES WHICH IMPED NORMAL FLOW.
- ALL FILLS ARE TO BE MECHANICALLY COMPACTED.
- ALL EARTH REMOVED AND NOT NEEDED SHALL BE PLACED AS NOT TO INTERFERE WITH THE FUNCTIONING OF THE SWALE.
- REFER TO CHART FOR STABILIZATION OF FLOW CHANNEL.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (S AC OR LESS)	B (S AC-10 AC)
1.	0.5-1.0	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2.	1.1-1.5	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELISOR
3.	1.6-2.0	SEED WITH JUTE OR EXCELISOR-SD	LINED RIP-RAP 4-8"
4.	2.1-3.0	LINED 4-8" RIP-RAP	RECYCLED CONCRETE EQUIVALENT

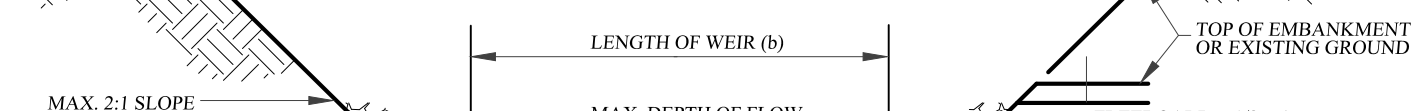
TEMPORARY DIVERSION SWALE DETAIL

NOT TO SCALE

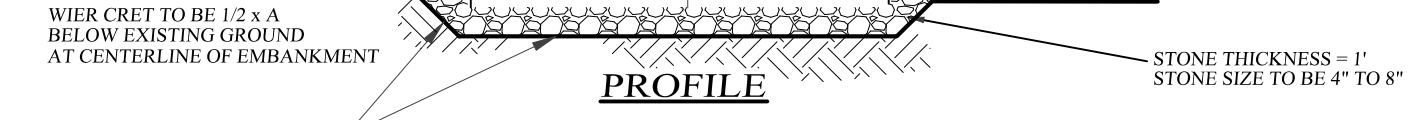


PERSPECTIVE VIEW

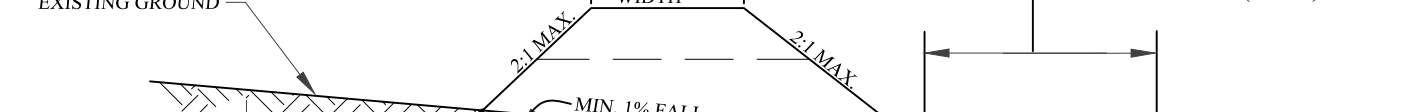
TOP OF COMPACTED EMBANKMENT
MIN. 1' ABOVE TOP OF STONE LINING
MAX. 5' ABOVE EXIST. GROUND AT CENTER LINE



PROFILE



CROSS SECTION



RIPRAP OUTLET SEDIMENT TRAP

NOT TO SCALE

MAX. DRAINAGE AREA = 15 ACRES

SEDIMENT TRAP CRITERIA

TRAP #1	TRAP #2	TRAP #3
TRAP TYPE	RIP RAP OUTLET SEDIMENT TRAP	
DRAINAGE AREA	6+ ACRES	7.5+ ACRES
STORAGE REQUIRED	21,600 cu. ft.	27,000 cu. ft.
STORAGE PROVIDED	22,500 cu. ft.	28,000 cu. ft.
DIMENSIONS 4" AVE. WATER HT.	50' x 90'	40' x 140'
DEPTH BELOW BASE OF WEIR (AVG.)	4"	4"
CHANNEL DEPTH	1.5'	1.5'
WEIR LENGTH	5'	5'
EMBANKMENT HEIGHT	5'	5'

CONSTRUCTION SPECIFICATIONS:

- THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
- THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTRAL LINE OF EMBANKMENT.
- ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
- ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED HEIGHT OF EMBANKMENT.
- STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE WEIR CREST.
- FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN 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.
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND SHALL BE REPAIRED AS NEEDED.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
- THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES.

VILLAGE VIEW

VILLAGE OF WARWICK, ORANGE COUNTY, NEW YORK

PROJECT TITLE

EROSION CONTROL

DETAILS SHEET

DRAWING TITLE

KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

