

VEGETATIVE OPEN CHANNEL TREATMENTS							
Al	AND PERMISIBLE VELOCITIES						
		PERMISSIBLE VELOCITY					
SLOPE	CHANNEL LINING	(FT/SEC)					
0-5%	REED CANARY GRASS TALL FESCUE KENTUCKY BLUEGRASS	5					
	GRASS- LEGUME MIXTURE RED FESCUE	4 2.5					
	SERICES LESPEDEZA	2.3					
	ANNUAL LESPEDEZA SMALL GRAINS						
5-10%	REED CANARYGRASS TALL FESCUE	4					
	KENTUCKY BLUEGRASS GRASS-LEGUME MIXTURE	3					
GREATER	REED CANARY GRASS	5					
THAN 10%	TALL FESCUE KENTUCKY BLUEGRASS						
	OR						
	8"-12" OF 4"-8"Ø RIP-RAP						

FOR VEGETATED EARTH CHANNELS HAVING PERMANENT TURF REINFORCEMENT MATTING, THE PERMISSIBLE FLOW VELOCITY SHALL NOT EXCEED 8 FT/SEC. TURF REINFORCEMENT MATTING SHALL BE A MACHINE PRODUCED MAT OF NON-DEGRADABLE FIBERS OR ELEMENTS HAVING A UNIFORM THICKNESS AND DISTRIBUTION OF WEAVE THROUGH OUT. MATTING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS WITH APPROPRIATE FASTENERS AS REQUIRED. EXAMPLES OF ACCEPTABLE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO

*NORTH AMERICAN GREEN "C350" OR "P300" *GREENSTREAK "PEC-MAT" *TENSAR "EROSION MAT"

OPEN CHANNEL/SWALE DETAIL

(NOT FOR OCHD REVIEW OR APPROVAL)

LOT #1

DOSING CALCULATIONS

WATER USAGE:

4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK + 100% OF VOLUME OF FORCE MAIN

VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2) \text{ SF x } 128 \text{ LF} = 11.21 \text{ CF}$ VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH $= (3.14) (0.083^2) \text{ SF x } 220 \text{ FT} = 4.75 \text{ CF}$

REQUIRED VOLUME OF DOSE = 11.21 CF + 4.75 CF = 15.96 CFCHANGE IN EFFLUENT ELEVATION DUE TO DOSE:

= VOLUME OF DOSE / AREA REQ. ELEV. CHANGE IN 5'Ø CHAMBER = 15.96CF / (2.5'^2 x 3.14) = .81'

HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL: $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$ = $(440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}/2 \times 3.14)$ = (58.82 CF) / (19.625) = 3 FT

DOSING CALCULATIONS

WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK

+ 100% OF VOLUME OF FORCE MAIN VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2)$ SF x 120 LF = 10.51 CF VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH

 $= (3.14) (0.083^2) \text{ SF x } 168 \text{ FT} = 3.63 \text{ CF}$ REQUIRED VOLUME OF DOSE = 10.51 CF + 3.63 CF = 14.14 CFCHANGE IN EFFLUENT ELEVATION DUE TO DOSE:

= VOLUME OF DOSE / AREA REQ. ELEV. CHANGE IN 5'Ø CHAMBER = 14.14CF / (2.5'^2 x 3.14) = .72' HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL:

 $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$ $= (440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}2 \times 3.14)$ = (58.82 CF) / (19.625) = 3 FT

LOT #6

DOSING CALCULATIONS

WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY REQUIRED DOSE:

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK + 100% OF VOLUME OF FORCE MAIN VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2) \text{ SF x } 160 \text{ LF} = 14.01 \text{ CF}$ VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH $= (3.14) (0.083^2) \text{ SF x } 390 \text{ FT} = 8.43 \text{ CF}$ REQUIRED VOLUME OF DOSE = 14.01 CF + 8.43 CF = 22.44 CF

CHANGE IN EFFLUENT ELEVATION DUE TO DOSE: = VOLUME OF DOSE / AREA REQ. ELEV. CHANGE IN 5'Ø CHAMBER = 22.44CF / $(2.5'^2 \times 3.14) = 1.14'$ = USE 13.7" HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL: $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$

= (58.82 CF) / (19.625) = 3 FT

= $(440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}2 \times 3.14)$

LOT #8

DOSING CALCULATIONS

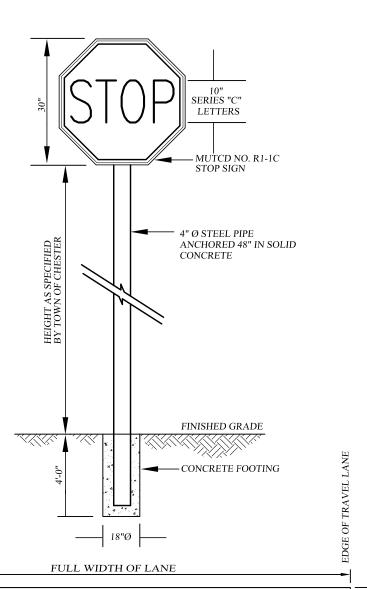
WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK + 100% OF VOLUME OF FORCE MAIN VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2) \text{ SF x } 160 \text{ LF} = 14.01 \text{ CF}$ VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH $= (3.14) (0.083^2) \text{ SF x } 300 \text{ FT} = 6.49 \text{ CF}$ REQUIRED VOLUME OF DOSE = 14.01 CF + 6.49 CF = 20.5 CF

= (58.82 CF) / (19.625) = 3 FT

CHANGE IN EFFLUENT ELEVATION DUE TO DOSE: = VOLUME OF DOSE / AREA REO. ELEV. CHANGE IN 5'Ø CHAMBER = $20.5 \text{ CF} / (2.5'^2 \times 3.14) = 1.04'$

= USE 12" HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL: = $(GAL \times (1 CF / 7.48 GAL)) / (AREA)$ = $(440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}/2 \times 3.14)$

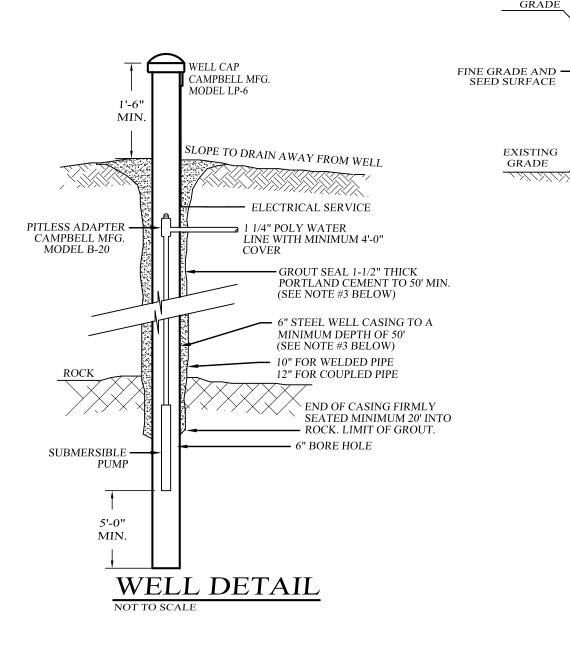


PAINTED STOP BAR

1. INSTALLATION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN SECTION 640 OF NYS DOT STANDARDS AND SPECIFICATIONS, LATEST REVISION. PAVEMENT MARKINGS IN ACCORDANCE WITH SECTION 635 OF NYS DOT STANDARDS 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 #18685. 5. ALL PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE NYS MANUAL OF TRAFFIC CONTROL DEVICES 260.

STOP BAR AND SIGN DETAIL

(NOT FOR OCHD REVIEW OR APPROVAL)



EXISTING

GRADE

BASED ON THE WELL LOG FOR LOT #10.

3. A MINIMUN OF 50' CASING & GROUT SHALL BE PROVIDED UNLESS DOCUMENTED BY THE NYS LISCENSED WELL DRILLER AT THE TIME OF DRILLING THAT THE HIGHEST WATER BEARING FEATURE ENCOUNTERED IS AT A MINIMUM DEPTH OF 50' BELOW GROUND LEVEL

EDITIONS. MINIMUM YIELD SHALL BE 5 GPM 5. INSTALL TOP OF CASING A MINIMUM 24" ABOVE ANY FLOOD LEVEL. 6. SOFTENING OF HARD WATER SHOULD BE CONSIDERED ONLY IF

8. FOOTING DRAINS WITHIN 25 FEET OF A WELL SHALL BE WATERTIGHT. 9. WELLS MUST BE INSTALLED AT LEAST 100 FEET FROM ALL SEPTIC SYSTEMS AND 200 FEET FROM ANY SEPTIC SYSTEM WHICH IS UPHILL FROM THE WELL.

1. THE ANTICIPATED WELL DEPTH IS 500 FEET BASED ON THE WELL LOG

FOR LOT #10. 2. THE ANTICIPATED DEPTH OF OVERBURDEN IS APPROXIMATILY 52'

4. WELL CONSTRUCTION SHALL CONFORM TO NYS HEALTH DEPARTMENT RURAL WATER SUPPLY STANDARDS AND AWWA A100, LATEST

EXCESSIVE HARDNESS IS FOUND. (GREATER THAN 150 MG/L). 7. THE LOCATION OF WELLS AND SEPTIC FIELDS SHALL NOT BE CHANGED.

LOT #5

DOSING CALCULATIONS

WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK + 100% OF VOLUME OF FORCE MAIN

VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2) \text{ SF x } 128 \text{ LF} = 11.21 \text{ CF}$ VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH

 $= (3.14) (0.083^2) \text{ SF x } 60 \text{ FT} = 1.29 \text{ CF}$ REQUIRED VOLUME OF DOSE = 11.21 CF + 1.29 CF = 12.50 CF CHANGE IN EFFLUENT ELEVATION DUE TO DOSE:

= VOLUME OF DOSE / AREA REQ. ELEV. CHANGE IN 5'Ø CHAMBER = 12.50CF / $(2.5^{\circ}/2 \times 3.14) = .64^{\circ}$ HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$

 $= (440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}/2 \times 3.14)$ = (58.82 CF) / (19.625) = 3 FT

LOT #7

DOSING CALCULATIONS

WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK + 100% OF VOLUME OF FORCE MAIN VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2)$ SF x 168 LF = 14.71 CF VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH $= (3.14) (0.083^2) \text{ SF x } 240 \text{ FT} = 5.19 \text{ CF}$ REQUIRED VOLUME OF DOSE = 14.71 CF + 5.19 CF = 19.93 CFCHANGE IN EFFLUENT ELEVATION DUE TO DOSE: = VOLUME OF DOSE / AREA

REQ. ELEV. CHANGE IN 5'Ø CHAMBER = 19.93CF / $(2.5'^2 \times 3.14) = 1.0'$ HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL: $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$ = $(440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}2 \times 3.14)$ = (58.82 CF) / (19.625) = 3 FT

LOT #9

DOSING CALCULATIONS

WATER USAGE: 4 BEDROOM HOUSE @ 110 GAL/DAY/BDRM = 440 GALLONS/DAY

+ 100% OF VOLUME OF FORCE MAIN VOLUME OF PIPE NETWORK = PI X RADIUS^2 X LENGTH $= (3.14) (0.167^2) \text{ SF x } 128 \text{ LF} = 11.21 \text{ CF}$ VOLUME OF FORCE MAIN = PI X RADIUS^2 X LENGTH

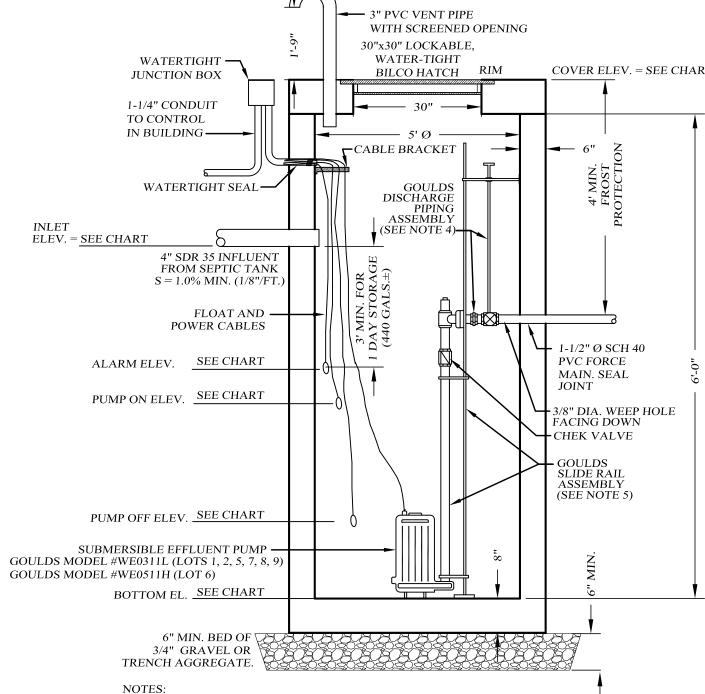
= $(440 \text{ GAL} / 7.48 \text{ GPCF}) / (2.5^{\circ}/2 \times 3.14)$

= (58.82 CF) / (19.625) = 3 FT

VOLUME OF DOSE = 100% OF VOLUME OF PIPE NETWORK

 $= (3.14) (0.083^2) \text{ SF x } 245 \text{ FT} = 5.30 \text{ CF}$ REQUIRED VOLUME OF DOSE = 11.21 CF + 5.30 CF = 16.51 CFCHANGE IN EFFLUENT ELEVATION DUE TO DOSE:

= VOLUME OF DOSE / AREA REO. ELEV. CHANGE IN 5'Ø CHAMBER = 16.51CF / $(2.5'^2 \times 3.14) = 0.84'$ HEIGHT REQUIRED FOR 1 DAY RESERVE = 440 GAL: $= (GAL \times (1 CF / 7.48 GAL)) / (AREA)$



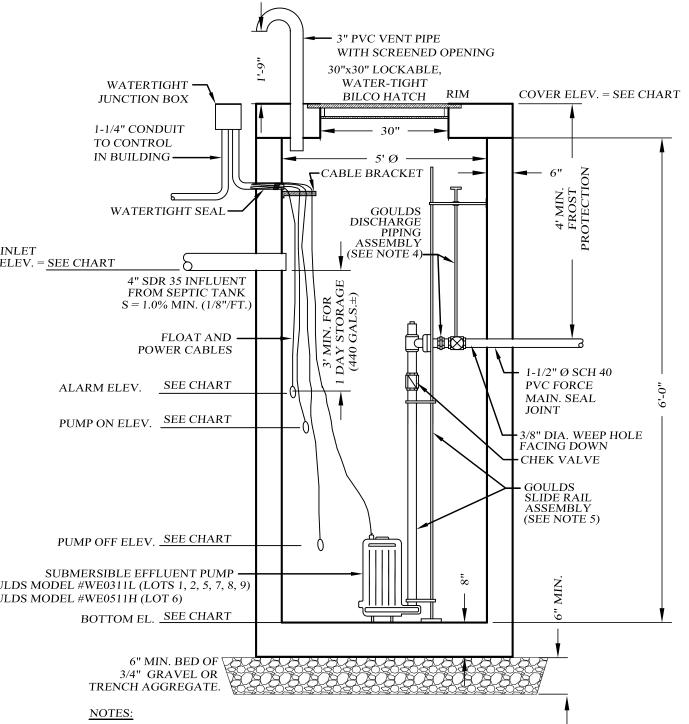
1. PUMP STATION BASE, BARREL AND FLAT TOP TO BE PRECAST CONCRETE, AS MANUFACTURED BY FORT MILLER, PRECAST CONCRETE SALES CO. OR EQUAL. CONCRETE AND REINFORCEMENT PER ASTM C478-85A.

2. HIGH WATER ALARM SHALL BE ELECTRONICALLY INTERLOCKED WITH THE WELL PUMP TO PREVENT WATER USAGE UNTIL THE HIGH WATER ALARM STATUS HAS

3. AUDIBLE HIGH WATER ALARM SHALL BE LOCATED WITHIN THE DWELLING. 4. DISCHARGE PIPING ASSEMBLY GOULDS MODEL #H20S INCLUDING UNION, PIPE NIPPLES AND GATE VALVE WITH EXTENSION, FOR USE WITH 2" DISCHARGE PUMPS. INSTALL PER MANUFACTURER SPECIFICATION.

5. SLIDE RAIL ASSEMBLY GOULDS MODEL A10-20 COMPRISING SLIDE RAIL, WALL BRACKET, DISCONNECT, PUMP BRACKET, BASE PLATE, LIFTING CABLE, CHECK VALVE AND DISCHARGE PIPING. INSTALL PER MANUFACTURERS SPECIFICATION.

> SIMPLEX RESIDENTIAL PUMP CHAMBER DETAIL



WATER CONDITIONER DETAIL (IF REQUIRED)

	LOT #1	LOT #2	LOT #5	LOT #6	LOT #7	LOT #8	LOT #9
COVER ELEV.	434.5	439	423	421.8	419.7	418	418
INLET ELEV.	433	437.5	421.5	420.3	418.2	416.5	416.5
ALARM ELEV.	430	434.7	418.5	417.3	415.2	413.5	413.5
PUMP ON ELEV.	429.7	434.4	418.2	417	414.9	413.2	413.2
PUMP OFF ELEV.	428.89	433.68	417.52	416	413.9	412.2	412.36
BOTTOM ELEV.	427.8	432.3	416.3	415.1	413	411.3	411.3

-10" NYS DOT TYPE 2 SUBBASE (ITEM 4) CONFORMING TO NYS DOT SECTION 304 SUBBASE SPECIFICATIONS TYPICAL 24' ROAD CROSS SECTION W/O CURB

FIRM, UNYIELDING SUBGRADE

— 3" NYS DOT ITEM #403.13 TYPE 3 HOT MIX ASPHALTIC BINDER COURSE

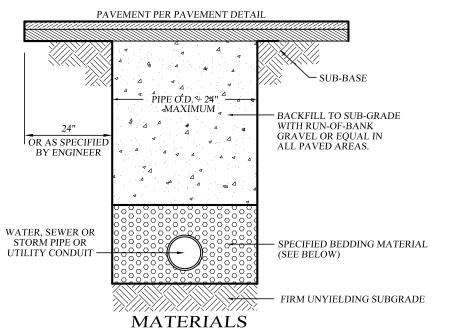
2" NYS DOT ITEM 403.16 TYPE 6 HOT MIX ASPHALTIC CONCRETE TOP COURSE

- 24' WIDE PAVED, CURBED ROAD --

—12' TRAVEL LANE—

-12' TRAVEL LANE —

(OUTSIDE STATE R.O.W.) SEE SHEET #5 FOR TYPICAL SECTION WITHIN STATE R.O.W. (NOT FOR OCHD REVIEW OR APPROVAL)



PIPE ZONE BACKFILL MATERIAL:

AS APPROVED BY SOILS ENGINEER.

2. SEWER MAINS: 1/4" CHRUSHED STONE

1. WATER MAINS: ON-SITE MATERIAL FREE OF STONE,

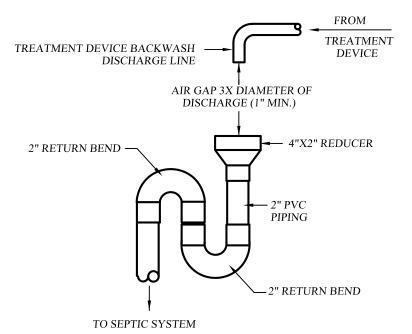
CROSS SECTION (NOT FOR OCHD REVIEW OR APPROVAL)

PIPE BEDDING AND BACKFILL

GRAVEL, AS APPROVED BY SOILS ENGINEER. CLAY FOREIGN MATERIAL OR FROZEN EARTH

DETAIL

(NOT FOR OCHD REVIEW OR APPROVAL)

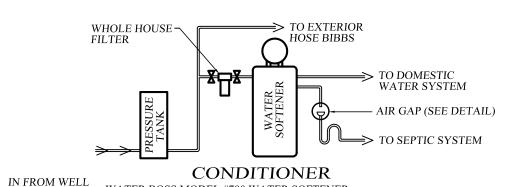


PIPE ZONE BEDDING MATERIAL:

1. WATER MAINS: SAND OR RUN-OF-BANK

2. SEWER MAINS: 1/4" CHRUSHED STONE.

AIR GAP DETAIL



AS MANUFACTURED BY WATERBOSS, 4343 S. HAMILTON ROAD, GROVEPORT, OHIO, 43125 BACKWASH REGENERATION WATER USE: 25 GALLONS, HIGH CAPACITY SETTING SEPTIC SYSTEMS HAVE BEEN DESIGNED TO ACCOMMODATE 25 GALLONS PER DAY BACKWASH

WATER BOSS MODEL #700 WATER SOFTENER

THE INSTALLATION IS OPTIONAL AND IS ONLY TO BE CONSIDERED IF WELL HARDNESS PROVES TO BE IN EXCESS OF 150 mg/L, OR IRON LEVELS ARE IN EXCESS OF 0.3 MG/L (MAXIMUM CONTAMINANT LEVEL). REMOVING HARDNESS AND/OR IRON BY ION EXCHANGE INCREASES THE SODIUM CONTENT OF WATER AT A RATE OF 46 mg/L OF SODIUM FOR EACH 100 mg/L (6 GRAINS/gal.) OF HARDNESS REMOVED. IF INSTALLED, IT MUST BE ACCORDING TO THIS APPROVED

PUMP CHAMBER ELEVATION CHART

LOT #1	LOT #2	LOT #5	LOT #6	LOT #7	LOT #8	LOT #9
434.5	439	423	421.8	419.7	418	418
433	437.5	421.5	420.3	418.2	416.5	416.5
430	434.7	418.5	417.3	415.2	413.5	413.5
429.7	434.4	418.2	417	414.9	413.2	413.2
428.89	433.68	417.52	416	413.9	412.2	412.36
427.8	432.3	416.3	415.1	413	411.3	411.3
	434.5 433 430 429.7 428.89	434.5 439 433 437.5 430 434.7 429.7 434.4 428.89 433.68	434.5 439 423 433 437.5 421.5 430 434.7 418.5 429.7 434.4 418.2 428.89 433.68 417.52	434.5 439 423 421.8 433 437.5 421.5 420.3 430 434.7 418.5 417.3 429.7 434.4 418.2 417 428.89 433.68 417.52 416	434.5 439 423 421.8 419.7 433 437.5 421.5 420.3 418.2 430 434.7 418.5 417.3 415.2 429.7 434.4 418.2 417 414.9 428.89 433.68 417.52 416 413.9	434.5 439 423 421.8 419.7 418 433 437.5 421.5 420.3 418.2 416.5 430 434.7 418.5 417.3 415.2 413.5 429.7 434.4 418.2 417 414.9 413.2 428.89 433.68 417.52 416 413.9 412.2



TOWN OF BLOOMING GROVE APPROVAL

DRIVEWAY FINISHED GRADE

12' MIN. (INDIVIDUAL LOTS)

6" MIN. BASE OF R.O.B. GRAVEL.

SHALE, ITEM 4, OR EQUIVALENT.

SECTION

RESIDENTIAL DRIVEWAY DETAIL

PERFORATED UNDERDRAIN

STA. 7+00 TÒ ENĎ OF SWALES

THIS SHEET SHALL BE CONSIDERED INCOMPLETE AND INVALID UNLESS ACCOMPANIED BY SHEETS NUMBER 1 THRU 10 IN THE SET OF 10.

CHESTERDALE **ESTATES**

TOWN OF CHESTER, ORANGE COUNTY, NEW YORK PROJECT TITLE

WATER SUPPLY & SITE DETAILS

06-02-16	REV. PER BLOOMING GROVE WORKSHOP	
11-12-15	REV. PER H.D. COMMENTS & J.S.I.	KIRK ROTHER, P.
03-24-15	REV. FOR H.D. SUBMITTAL	·
06-12-13	REV. PER SOILS TEST RESULTS	CONSULTING ENGINEER, PLLC
05-01-12	REVISE LOT #1 LOCATION	5 Saint Stephens Lane, Warwick NY 10990
02-20-12	FINAL CLUSTER DESIGN	(845) 988-0620
11-18-09	REV. PER TOWN ENG. COMMENTS	(073) 980-0020
03-03-08	GENERAL REV.	

03-03-0 06-14-06 INITIAL PREPARATION KIRK ROTHER, P.E. N.Y.S. LIC. NO. 079053 REVISIONS D.O.T. SHEET # D.E.C.. SHEET # O.C.H.D. SHEET # SHEET #

DRAWING TITLE

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO A DOCUMENT BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUBDIVISION 8 OF 10 2 OF THE NEW YORK STATE EDUCATION LAW. REPRODUCTIONS OF THIS PLAN WHICH CAD # PROJECT # DO NOT BEAR THE ORIGINAL SEAL OF A LICENSED PROFESSIONAL ENGINEER SHALL BE CONSIDERED INVALID. AS SHOWN 04182 SP 04182.0