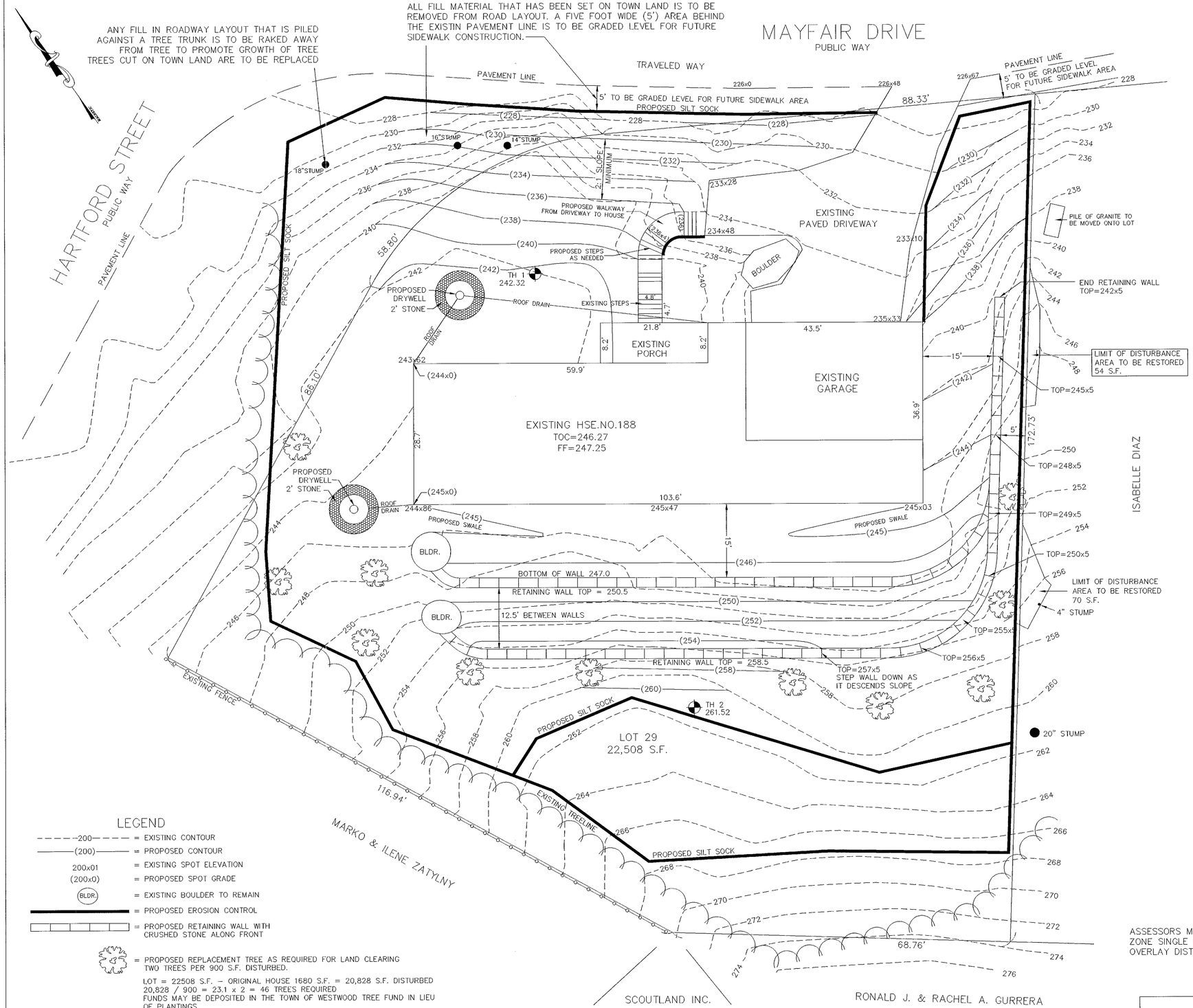


AREA OF DISTURBANCE

TOTAL SITE AREA = 22,508 S.F. 0.52 ACRES
TREE CLEARING = 17,728 S.F. 0.41 ACRES
EXISTING LAND DISTURBANCE = 5683 S.F. 0.13 ACRES
PROPOSED LAND DISTURBANCE = 4280 S.F. 0.10 ACRES

LAND DISTURBANCE IN ROADWAY = 1998 S.F. 0.05 ACRES

MATERIAL TO BE REMOVED

FRONT YARD :
FILL MATERIAL ,TOPSOIL , SUBSOIL AND GRAVEL = 82 C.Y.

REAR YARD :
TOPSOIL , SUBSOIL AND GRAVEL = 110 C.Y.
CLEAN MATERIAL , FREE OF DELETERIOUS MATERIAL , MAY BE USED TO REGRADE YARD AREAS AND BACKFILL RETAINING WALLS.
SEE SHEET 2 FOR INFORMATION ON PROPOSED GRADING AND PLANTING

NOTES :

1) SILTATION CONTROL IS TO BE STAKED IN PLACE PRIOR TO EARTH WORK AND IS TO BE MAINTAINED DURING CONSTRUCTION
2) ALL MATERIAL MOVED OFF SITE , OR BROUGHT ON SITE , IS TO BE TRANSPORTED BY WAY OF HARTFORD STREET TO OR FROM HIGH STREET. TRUCKS ARE NOT TO USE MAYFAIR DRIVE DURING EARTH MOVEMENT.
3) ROADS ARE TO BE KEPT CLEAN OF DEBRIS FROM EARTH REMOVAL. ROADS ARE TO BE INSPECTED EACH DAY AND CLEANED AS NEEDED. ANY DAMAGE TO THE ROADWAY PAVEMENT OR CURBING IS TO BE REPAIRED BY OWNER
4) MATERIAL TO BE REMOVED INCLUDES FILL MATERIAL , 3 TO 6 INCHES OF TOPSOIL AS WELL AS ONSITE SUBSOIL AND GRAVEL
CLEAN MATERIAL , FREE OF DELETERIOUS MATERIAL , MAY BE USED TO REGRADE YARD AREAS AND BACKFILL RETAINING WALLS. CLEAN CRUSHED STONE , 3/4" – 1 1/2" IN SIZE IS TO BE USED TO BACKFILL RETAINING WALLS AS SHOWN IN WALL DETAIL ON SHEET 2
5) FRONT AND REAR YARDS ARE TO BE BROUGHT TO WITHIN 2 TO 4 INCHES OF FINAL GRADE A MINIMUM OF 2 INCHES OF CLEAN LOAM IS TO BE SPREAD TO FINAL PROPOSED GRADE. EROSION CONTROL BLANKETS MAY BE NECESSARY ON STEEP SLOPES
6) SEE SHEET 2 FOR NATIVE STEEP SLOPE SEED MIX DETAILS AND RECOMMENDED TREE , SHRUBS AND GROUNDCOVER PLANTS
7) SILTATION CONTROL AND EROSION BLANKETS ARE TO REMAIN IN PLACE UNTIL GROUND COVER PLANTINGS HAVE TAKEN HOLD AND SEED MIX IS GROWING
8) AREAS PREVIOUSLY DISTURBED DURING THE TREE CLEARING PROCESS ON THE LANDS OF DIAZ ARE TO BE RESTORED TO A NATURAL STATE.
2 TREES ON THE LAND OF DIAZ WERE REMOVED DURING TREE CLEARING ; A 4 IN. AND A 20 IN. TREE STUMP WERE FOUND ON DIAZ LAND. REPLACEMENT TREE TYPE AND LOCATION ARE TO BE COORDINATED WITH DIAZ , OR OWNER OF LAND AT PRESENT TIME.
9) AREAS PREVIOUSLY DISTURBED DURING THE TREE CLEARING PROCESS ON THE TOWN LAND IN THE LAYOUT OF HARTFORD STREET ARE TO BE CLEANED OF FILL MATERIAL. ANY FILL MATERIAL THAT IS AGAINST THE TRUNK OF A TREE IS TO BE RAKED AWAY AND LEVELED TO PROMOTE THE HEALTH AND GROWTH OF THE TREE.
10) IN THE AREA ABOVE REAR YARD RETAINING WALLS EXISTING STUMPS ARE TO BE LEFT IN PLACE CLEAN AND REMOVE ANY DEBRIS , SLASH , ETC. TO REVEAL NATIVE SOILS WITHIN THE CLEARED AREA BEFORE SPREADING NATIVE STEEP SLOPE SEED MIX AND PLANTING TREES
11) A MINIMUM OF 2 TREES ARE TO BE PLANTED PER 900 S.F. DISTURBED AREA. FUNDS CAN BE DEPOSITED IN THE TOWN TREE FUND IN LIEU OF PLANTINGS
12) IF A DIFFERENT RETAINING WALL SYSTEM IS USED DOCUMENTATION IS TO BE SUPPLIED TO THE TOWN AND DESIGN ENGINEER FOR COMPARISON.

LEGEND

- 200 = EXISTING CONTOUR
- (200) = PROPOSED CONTOUR
- 200x01 = EXISTING SPOT ELEVATION
- (200x0) = PROPOSED SPOT GRADE
- BLDR. = EXISTING BOULDER TO REMAIN
- = PROPOSED EROSION CONTROL
- = PROPOSED RETAINING WALL WITH CRUSHED STONE ALONG FRONT
- = PROPOSED REPLACEMENT TREE AS REQUIRED FOR LAND CLEARING TWO TREES PER 900 S.F. DISTURBED.

LOT = 22508 S.F. – ORIGINAL HOUSE 1680 S.F. = 20,828 S.F. DISTURBED
20,828 / 900 = 23.1 x 2 = 46 TREES REQUIRED
FUNDS MAY BE DEPOSITED IN THE TOWN OF WESTWOOD TREE FUND IN LIEU OF PLANTINGS

ASSESSORS MAP 20 PARCEL 159
ZONE SINGLE RESIDENCE C
OVERLAY DISTRICT WATER RESOURCE PROTECTION DISTRICT
SETBACKS : FRONT 40 FEET
SIDE 20 FEET
REAR 30 FEET

REVISIONS	
DATE	REVISION
FEBRUARY 6 , 2017	REVISE GRADING
MARCH 6 , 2017	REVISE GRADING
APRIL 17 , 2017	ADD DRAINAGE

OWNER & APPLICANT :
TIMOTHY GAGNON
188 MAYFAIR DRIVE
WESTWOOD, MA. 02090

LAND DISTURBANCE MITIGATION PLAN

FOR

188 MAYFAIR DRIVE

IN

WESTWOOD , MA.

SCALE 1" = 10' OCTOBER 24 , 2016

COMMONWEALTH OF MASSACHUSETTS
RALPH I MALOON
CIVIL
NO. 20225
REGISTERED
PROFESSIONAL ENGINEER

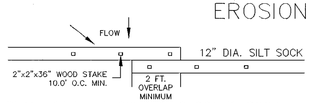
RALPH I. MALOON P.E. — DATE April 17,2017

GRAPHIC SCALE – FEET
0 5 10 20 30 40

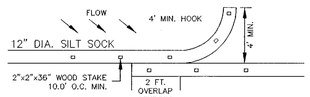
RIM ENGINEERING CO., INC.
P.O. BOX 32 MANSFIELD, MA. 02048
(508) 339–3731 RIMENGINEERING@VERIZON.NET

EROSION CONTROL DETAIL

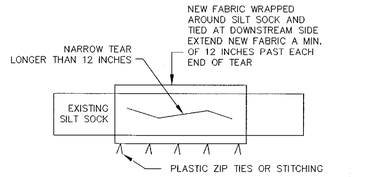
NOT TO SCALE



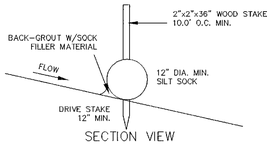
PLAN VIEW – FLOW 45° TO 90° TO SOCK



PLAN VIEW – FLOW LESS THAN 45° TO SOCK



REPAIR DETAIL – TEAR GREATER THAN 12 INCHES



SECTION VIEW

SILT SOCK GENERAL NOTES :

1– SOCK MATERIAL PER STANDARD SPECIFICATIONS. SILT SOCK FILLER SHALL BE COMPOST / MULCH ONLY.
2– WHEN SILT SOCK IS USED ON A PAVED SURFACE CONCRETE BLOCKS ARE TO BE USED TO SECURE SILT SOCK IN PLACE OF STAKING.
3– ACCUMULATED SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT SOCK WHEN IT HAS REACHED A HEIGHT EQUAL TO HALF THE SOCK HEIGHT
4– SMALL HOLES OR NARROW RIPS LESS THAN 12 FEET LONG MAY BE STITCHED CLOSED USING PLASTIC ZIP TIES. LARGER RIPS SHALL BE FIXED PER THE REPAIR DETAIL. HEAVILY DAMAGED SECTIONS SHALL BE REPLACED ENTIRELY. MAINTAIN 2 FEET MINIMUM OVERLAP AT EACH END.

EASTCOAST EROSION BLANKETS

443 BRICKER ROAD BERNVILLE , PA 19506
1–800–582–4005 / 1–488–8496 (O) / 1–610–488–8494 (F)
WWW.EROSIONBLANKETS.COM
DISTRIBUTED BY :
PINELANDS NURSERY & SUPPLY
323 ISLAND ROAD COLUBUS , NJ 08022
1–609–291–9486 (P) 1–609–298–8939 (F)
WWW.PINELANDSNURSERY.COM

MATERIALS AND PERFORMANCE SPECIFICATION SHEET ECS–2 DOUBLE NET STRAW ROLLED EROSION CONTROL PRODUCT

DESCRIPTION :

THE ECS–2 IS MADE WITH UNIFORMLY DISTRIBUTED 10 % AGRICULTURAL STRAW AND TWO POLYPROPYLENE NETS SECURELY SEWN TOGETHER WITH DEGRADABLE THREAD. THE TIGHTLY COMPRESSED BLANKETS ARE PLACED INSIDE VENTED BAGS AND INCLUDE A PRODUCT LABEL , CODE AND INSTALLATION GUIDE. THE BLANKETS ARE PALLETIZED FOR EASY TRANSPORTATION.

THE ECS–2 HAS FUNCTIONAL LONGEVITY OF APPROXIMATELY 12 MONTHS , BUT WILL VARY DEPENDING ON SOIL AND CLIMATIC CONDITIONS , AND IS SUITABLE FOR SLOPES 2:1 OR LESS. THE ECS–2 MEETS TYPE 2.0 SPECIFICATION REQUIREMENTS ESTABLISHED BY THE EROSION CONTROL COUNCIL (ECTC) AND FEDERAL HIGHWAY ADMINISTRATION'S (FHWA) FP–03 SECTION 713.17

SEE INCLUDED SUPPLEMENTAL PAPERWORK FOR PRODUCT SPECIFICATIONS

ECR

BRAD HOLMES , PROFESSIONAL WETLAND SCIENTIST #1464 , MA. CERTIFIED ARBORIST #2130
ENVIRONMENTAL CONSULTING & RESTORATION , LLC
P.O. BOX 1319 , PLYMOUTH , AM. 02362 1–617–529–3792
WWW.ECRHOLMES.COM

PROPOSED REVEGETATION DESIGN

1– CLEAN AND REMOVE ANY DEBRIS , SLASH , ETC. TO REVEAL NATIVE SOILS WITHIN THE CLEARED AREAS OF THE SITE.
2–GRUB OUT AND REMOVE EXISTING JAPANESE KNOTTWEED (POLYGONUM CUSPIDATA) VEGETATION ALONG FRONT OF THE PROPERTY FACING MAYFAIR DRIVE. JAPANESE KNOTTWEED IS HIGHLY AGGRESSIVE NON–NATIVE INVASIVE PLANT THAT WILL QUICKLY SPREAD INTO ABUTTING AREAS OF THE SITE. UPON EXCAVATION , THE PLANTS SHOULD BE PLACED IN BAGS AND DISPOSED OF AT A LICENSED FACILITY IN ORDER TO PREVENT OFFSITE CONTAMINATION. THESE PLANTS SHOULD NOT BE DISPOSED OF AT A LANDSCAPE PROCESSING YARD.
3–WHERE FILL SOILS HAVE BEEN USED AND/OR AREAS LACKING TOPSOIL , THESE AREAS SHOULD BE COVERED WITH TWO INCHES (2") OF CLEAN LOAM. EROSION CONTROL BLANKETS MAY BE NECESSARY ON STEEP SLOPES. SEE ATTACHED SAMPLE EROSION CONTROL BLANKET SPECIFICATION SHEET FOR MORE INFORMATION.
4–NEXT ALL EXPOSED SLOPES SHOULD BE PLANTED AND SEEDED TO REVEGETATE THE AREA. ECR RECOMMENDS USING A NATIVE STEEP SLOPE STABILIZATION SEED MIX (SEE SEED MIX PROFILE) THAT IS HAND BROADCAST OVER EXPOSED SOILS AT THE SITE AND GENTLY RAKED INTO THE SOIL. PLANTING OF TREES , SHRUBS AND GROUNDCOVER VEGETATION IS ALSO PROPOSED TO REVEGETATE THE SITE. THE NUMBER , SPACING AND SIZE OF PROPOSED REPLACEMENT VEGETATION IS AT THE DISCRETION OF THE LANDSCAPE CONTRACTOR WHILE TAKING INTO ACCOUNT THE EXISTING VEGETATION , LEDGE OUTCROPS , ETC.
ECR RECOMMENDS THE FOLLOWING REVEGETATION PLANT STOCK :

TREE SPECIES

RED CEDAR	*JUNIPERUS VIRGINIANA*
WHITE PINE	*PINUS STROBUS*
RED OAK	*QUERCUS RUBRA*
WHITE OAK	*QUERCAS ALBA*
SASSAFRAS	*SASSAFRAS ALBIDUM*
FLOWERING DOGWOOD	*CORNUS FLORIDA*

SHRUB SPECIES

MOUNTAIN LAUREL	*KALMIA LATIFOLIA*
WITCH HAZEL	*HAMAMELIS VIRGINIANA*
LOWBUSH BLUEBERRY	*VACCINIUM ANGUSTIFOLIUM*
SWEET PEPPERBUSH	*CLETHRA ALNIFOLIA*
BLACK HUCKLEBERRY	*GAYLUSSACIA BACCATA*

GROUNDCOVER PLANT SPECIES

BEARBERRY	*ARCTOSTAPHYLOS UVA–URSI*
SWEET FERN	*COMPTONIA PEREGRINA*
CHECKERBERRY	*GAULTHERIA PROCUMBENS*
PENNSYLVANIA SEDGE	*CAREX PENNSYLVANICA*
CREEPING JUNIPER	*JUNIPERUS HORIZONTALIS*

ERNST SEEDS

8884 MERCER PIKE MEADVILLE , PA 16335
1–800–873–3321 WWW.SALES@ERNSTSEED.COM

NATIVE STEEP SLOPE MIX W/ANNUAL RYEGRASS

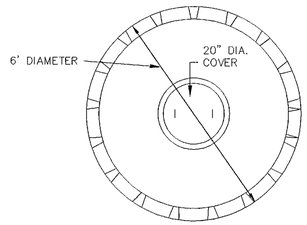
MIX COMPOSITION :

28.7 % SORGHASTRUM NUTANS , PA ECOTYPR (INDIANGRASS , PA ECOTYPE)
20.0 % LOLIUM MULTIFLORUM (LPERENNE VAR. ITALICUM) (ANNUAL RYEGRASS)
10.0 % ELYMUS VIRGINICUS , PA ECOTYPE (VIRGINIA WILDREY , PA ECOTYPE)
8.0 % ANDROPOGON GERARDII , 'NIAGRA' (BIG BLUESTEM , 'NIAGRA')
7.8 % TRIDENS FLAVUS (PURPLETOP)
7.0 % ELYMUS CANADENSIS (CANADA WILDRYE)
4.2 % SCHIZACHYRIUM SCOPARIUM (ANDROPOGON SCOPARIUS) , FORT INDIANTOWN GAP–PAECOTYPE (LITTLE BLUESTEM , FORT INDIANTOWN GAP – PA ECOTYPE)
3.0 % AGROSTIS PERENNANS ,ALBANY PINE BUSH–NY ECOTYPE (AUTUMN BENTGRASS , ALBANY PINE BUSH – NY ECOTYPE)
3.0 % PANICUM VIRGATUM , 'SHAWNEE' (SWITCHGRASS ,'SHAWNEE')
2.5 % ECHINACEA PURPUREA (PURPLE CORNFLOWER)
2.0 % CHAMAECRISTA FASCICULATA (CASSIA F.) PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE)
1.0 % COREOPSIS LANCEOLATA (LANCELEAF COREOPSIS)
1.0 % RUDBECKIA HIRTA , COASTAL PLAIN NC ECOTYPE (BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE)
0.7 % LESPEDEZA VIRGINICA , VA ECOTYPE (SLENDER LESPEDEZA , VA ECOTYPE)
0.5 % MONARDA FISTULOSA , FORT INDIANTOWN GAP–PA ECOTYPE (WILD BERGAMOT , FORT INDIANTOWN GAP–PA ECOTYPE)
0.3 % LIATRIS SPICATA (MARSH (DENSE) BLAZING STAR (SPIKED GAYFEATHER)

CONNECT ALL ROOF DOWNSPOUTS TO THE DRY WELL WITH 6" PVC PIPE AT A MINIMUM 1% SLOPE

E.F.SHEA

NEW ENGLAND CONCRETE PRODUCTS , INC.



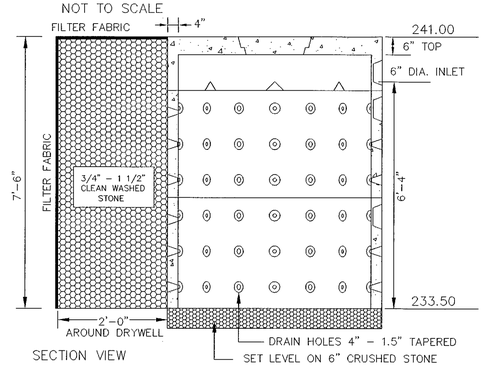
PLAN VIEW

	ITEM NO.	WEIGHT
1200 GALLON	DW–1200SDW STANDARD	7400 LB.
3' STACKABLE	DW–3SS	2008 LB.

NOTES :
1– CONCRETE 4,000 PSI MINIMUM AFTER 28 DAYS
2– AVAILABLE IN H20 LOADING
3– CAPACITY INCREASES IN INCREMENTS OF 500 GALLONS FOR EACH 3' SECTION ADDED

DRY WELL CYLINDRICAL 1200 GALLON STACKABLE

NOT TO SCALE

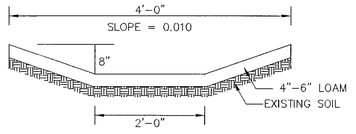


SECTION VIEW

133.86 C.F. STORAGE

SWALE DETAIL

NOT TO SCALE



ASSESSORS MAP 20 PARCEL 159
ZONE SINGLE RESIDENCE C
OVERLAY DISTRICT WATER RESOURCE PROTECTION DISTRICT
SETBACKS : FRONT 40 FEET
SIDE 20 FEET
REAR 30 FEET

OWNER & APPLICANT :

TIMOTHY GAGNON
188 MAYFAIR DRIVE
WESTWOOD, MA. 02090

LAND DISTURBANCE MITIGATION PLAN

FOR

188 MAYFAIR DRIVE

IN

WESTWOOD , MA.

SCALE 1" = 20' OCTOBER 24 , 2016

COMMONWEALTH OF MASSACHUSETTS
RALPH I MALOON CIVIL NO. 20225
REGISTERED PROFESSIONAL ENGINEER

RALPH I. MALOON P.E. DATE April 17, 2017

GRAPHIC SCALE – FEET

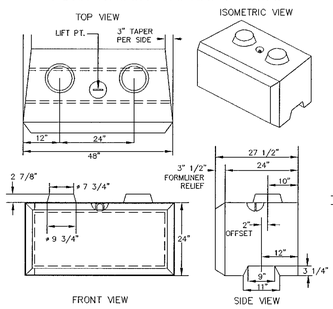
0 5 10 15 20 40 60 80

REVISIONS	
DATE	REVISION
FEBRUARY 6 , 2017	REVISE GRADING
MARCH 6 , 2017	REVISE GRADING
APRIL 17 , 2017	ADD DRAINAGE

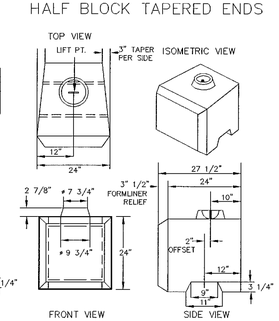
DETAILS FROM WOODARD'S CONCRETE PRODUCTS , INC.
BULLVILLE , NY 10915 800–735–3471

CONCRETE MIN. STRENGTH ?: 4,000 PSI AT 28 DAYS
REINFORCEMENT : FIBER , #4 BAR / ASTM A615
AIR ENTRAINMENT : 6 %
WEIGHT = 1600 LBS. (2' x 4' MIDDLE BLOCK)

FULL BLOCK TAPERED ENDS



HALF BLOCK TAPERED ENDS

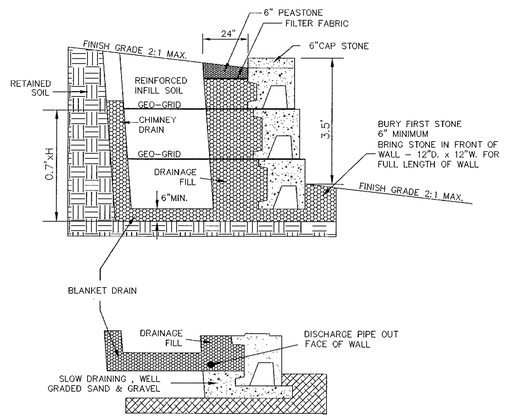


FOOTING DESIGN – CASE 3

CASE 3 – GROUNDWATER TABLE NEAR BOTTOM OF WALL OR POSSIBLE LATERAL FLOW INTO REINFORCED INFILL SOIL AND RETAINED SOIL ON SEASONAL BASIS

BLOCK RETAINING WALL DETAIL

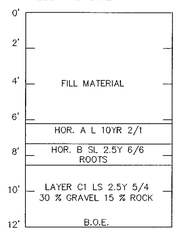
NOT TO SCALE



SOIL LOGS

NOT TO SCALE

T.H. 1 03/30/17
ELEV.=242.32



FALLING HEAD TEST CALCULATIONS

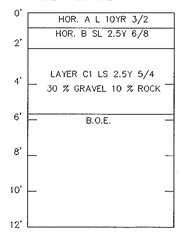
TIME TO 37 % OF PIPE = 107.5 MINUTES = 8850 SECONDS

$\frac{PI \times 0.33}{11 \times 8850} = \frac{1.036725576}{97350} = 0.00010649$

0.00010649 / 2 = 0.000005325 C.F.S./S.F.

0.000005325 x 43,200 = 0.2300 IN / HR

T.H. 2 03/30/17
ELEV.=261.52



FALLING HEAD TEST CALCULATIONS

TIME TO 37 % OF PIPE = 8.3 MINUTES = 498 SECONDS

$\frac{PI \times 0.33}{11 \times 498} = \frac{1.036725576}{5478} = 0.00189253$

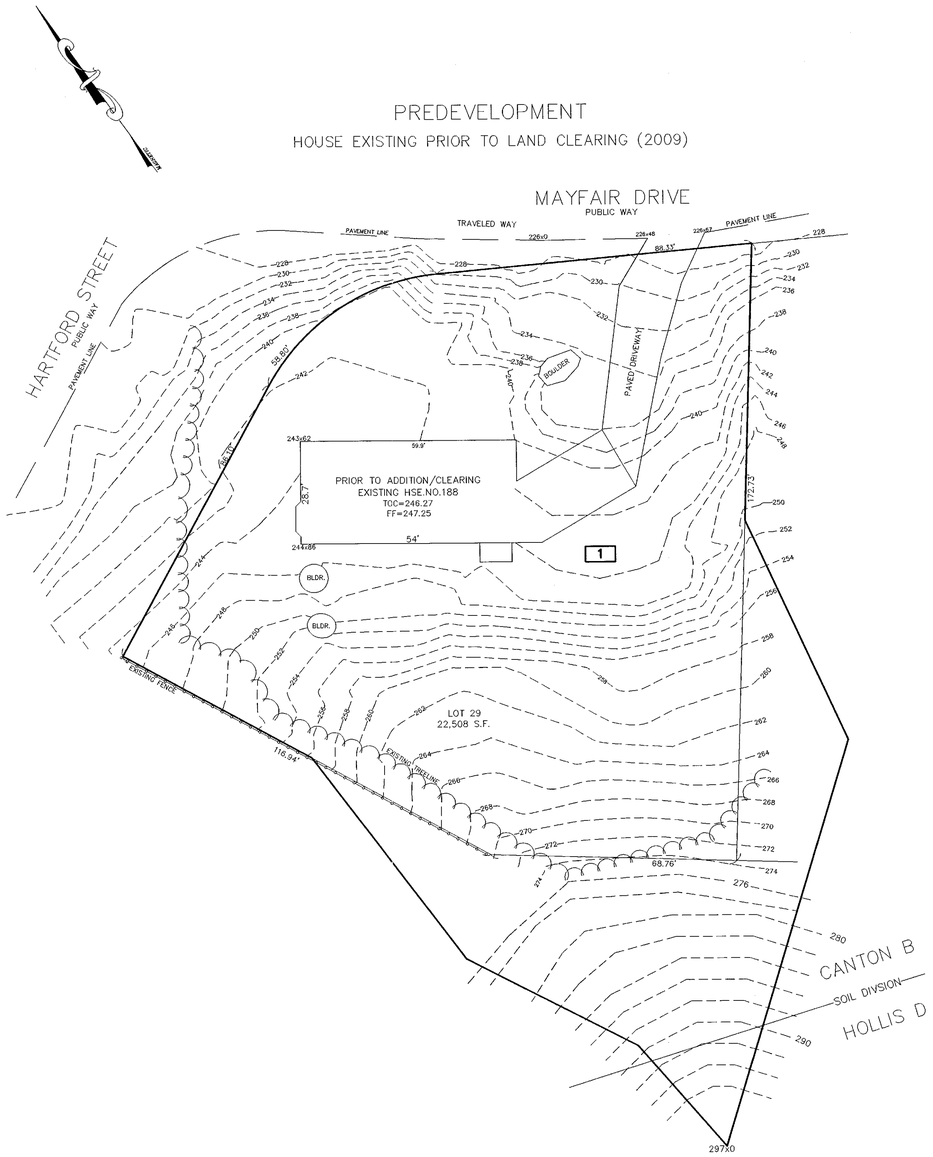
0.00189253 / 2 = 0.000094627 C.F.S./S.F.

0.000094627 x 43,200 = 4.0878864 IN / HR

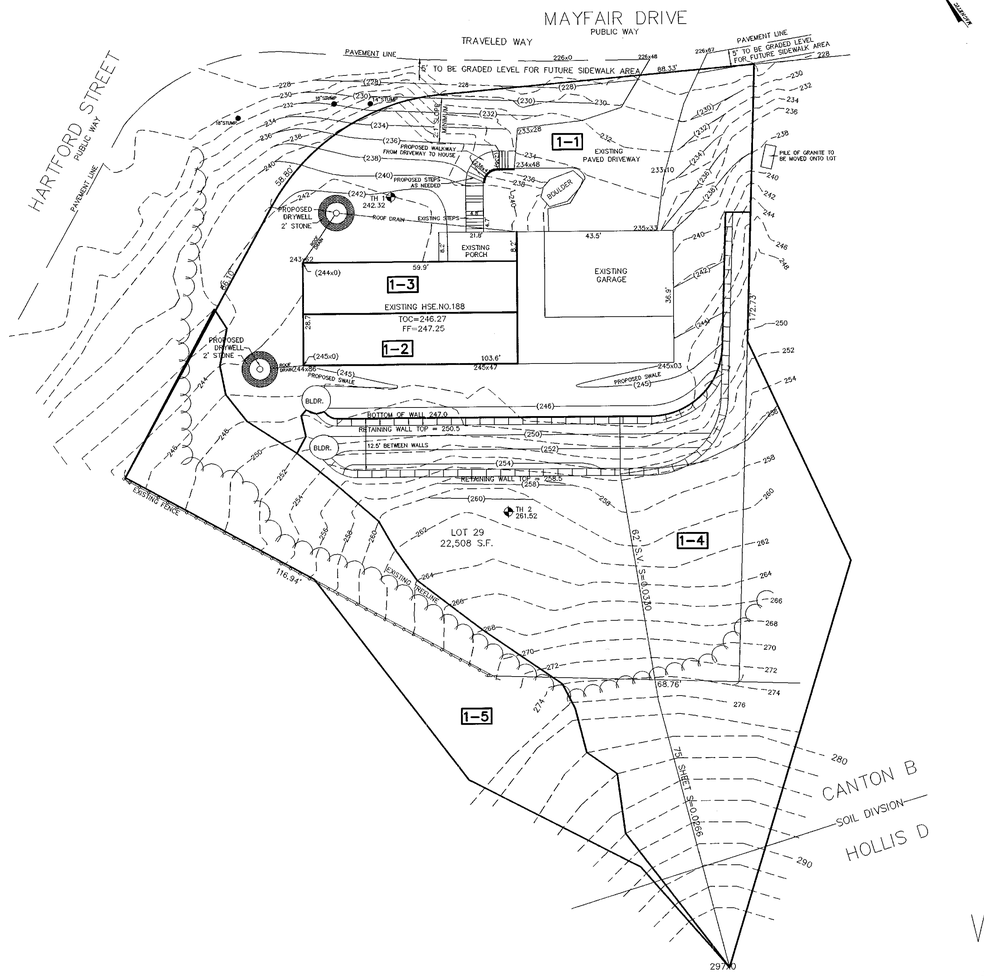
RIM ENGINEERING CO., INC.
P.O. BOX 32 MANSFIELD, MA. 02048
(508) 339–3731 RIMENGINEERING@VERIZON.NET

PREDEVELOPMENT

HOUSE EXISTING PRIOR TO LAND CLEARING (2009)



POSTDEVELOPMENT



LEGEND

- 200 = EXISTING CONTOUR
- (200) = PROPOSED CONTOUR
- 200x01 = EXISTING SPOT ELEVATION
- (200x0) = PROPOSED SPOT GRADE
- BLDR. = EXISTING BOULDER TO REMAIN
- = DRAINAGE DIVISION LINE
- 1-2 = DRAINAGE AREA

ASSESSORS MAP 20 PARCEL 159
ZONE SINGLE RESIDENCE C
OVERLAY DISTRICT WATER RESOURCE PROTECTION DISTRICT
SETBACKS : FRONT 40 FEET
SIDE 20 FEET
REAR 30 FEET

REVISIONS	
DATE	REVISION

OWNER & APPLICANT :
TIMOTHY GAGNON
188 MAYFAIR DRIVE
WESTWOOD, MA. 02090

DRAINAGE STUDY
FOR
188 MAYFAIR DRIVE
IN
WESTWOOD , MA.

SCALE: 1" = 20' APRIL 17 , 2017

COMMONWEALTH OF MASSACHUSETTS
RALPH I MALOON CIVIL NO. 20225 REGISTERED PROFESSIONAL ENGINEER

RALPH I. MALOON P.E. — DATE: April 17, 2017

GRAPHIC SCALE – FEET
0 10 20 40 60 80

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P.O. BOX 32 MANSFIELD, MA. 02048
(508) 339-3731 RIMENGINEERING@VERIZON.NET