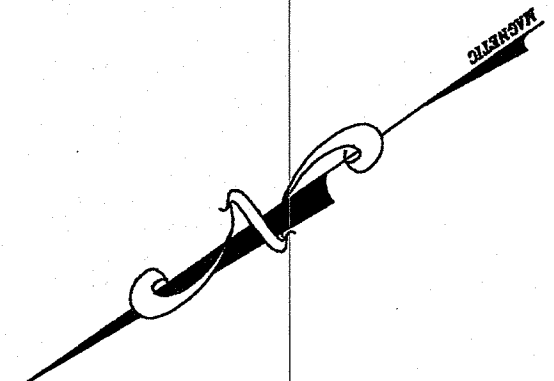
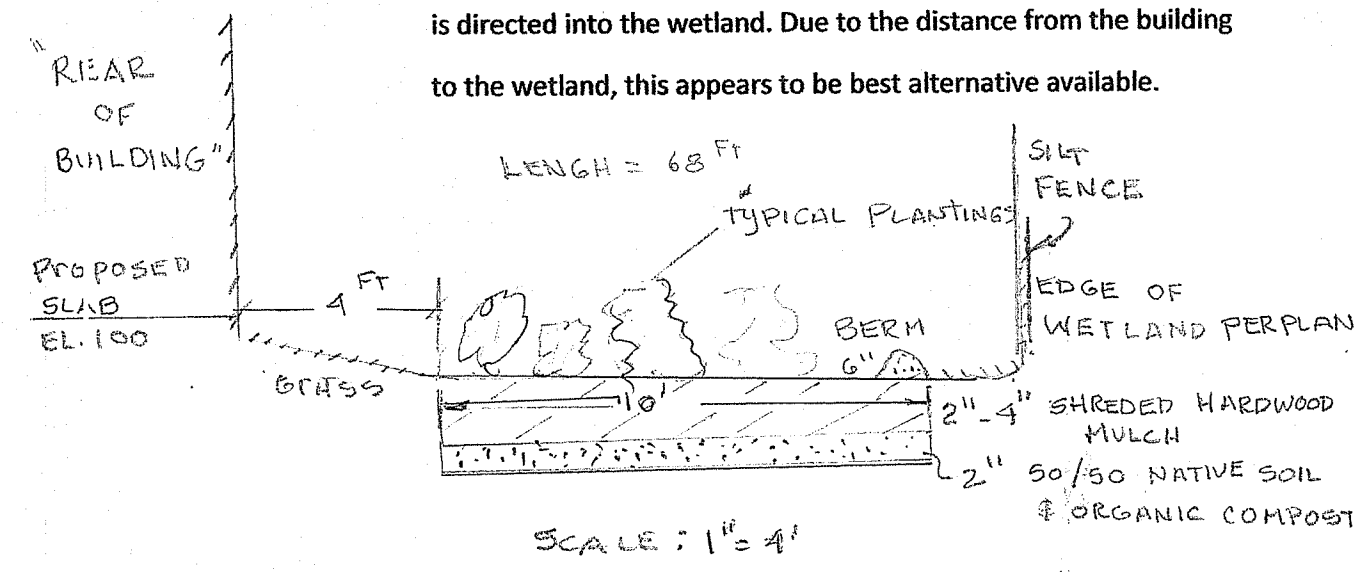


LOCATION MAP



**STORMWATER ANALYSIS**

The proposed addition is 60' x 60' or 3600 sf  
 The building will replace the "existing pavement".  
 The proposed plan shows an additional removal of  
 968 sf of Pavement. This mitigation is to install a 68' x 10'  
 @6" deep rain garden (stormwater volume of about 340 cf).  
 This should handle a 1" rainfall event of 3600/12 = 300 cf as  
 if it were new construction. The natural storm water pattern  
 is directed into the wetland. Due to the distance from the building  
 to the wetland, this appears to be best alternative available.



RAIN GARDEN SECTION (MITIGATION) DETAIL

**RAIN GARDEN CONSTRUCTION:**

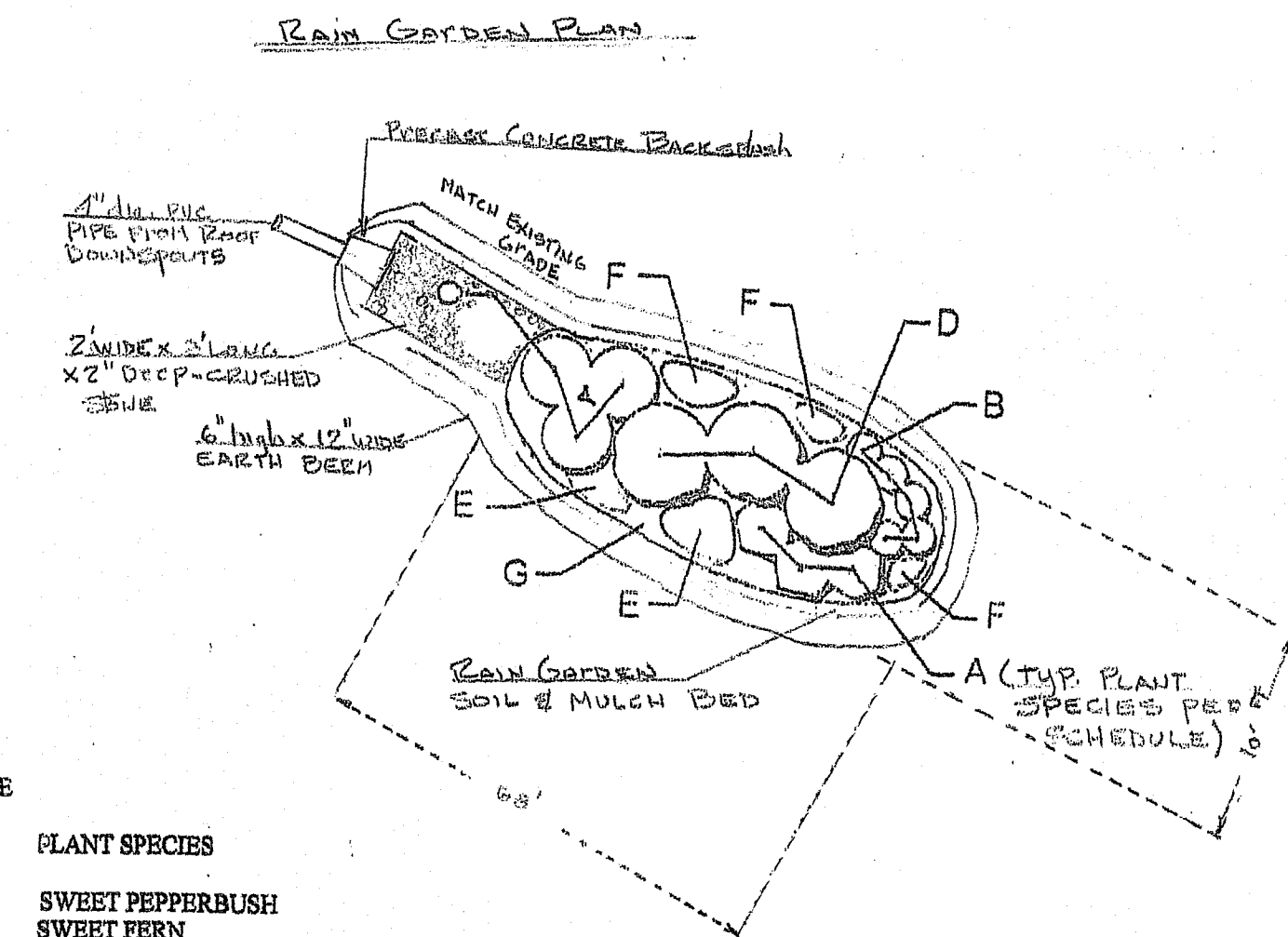
1. A CRUSHED STONE ENTRANCE SHOULD BE INSTALLED AT THE INFLOW TO PREVENT CHANNELING.
2. A BERM TO DETAIN STORMWATER SHOULD BE CONSTRUCTED ALONG THE DOWNHILL SIDE OF THE RAIN GARDEN, PERPENDICULAR TO THE SLOPE OF THE LAWN.
3. BE SURE THAT THE SOIL WITHIN THE RAIN GARDEN AREA DOES NOT BECOME COMPACTED BY CONSTRUCTION ACTIVITIES (I.E. HEAVY MACHINERY). IF SOIL BECOMES SEVERELY COMPACTED IT MAY NEED TO BE TILLED AND AMENDED TO MAINTAIN PROPER DRAINAGE.

**RAIN GARDEN TREATMENT:**

1. THE BOTTOM OF A RAIN GARDEN SHOULD BE LEVEL TO ENCOURAGE THE EVEN DISTRIBUTION OF STORMWATER AND INCREASE INFILTRATION CAPACITY.
2. RAIN GARDENS SHOULD BE 4 TO 8 INCHES IN DEPTH WITH A 2 - 4 INCH AMENDED SOIL LAYER AND A 2 - 3 INCH LAYER OF NON-DYED AGED SHREDDED HARDWOOD MULCH.
3. THE AMENDED SOIL LAYER OF A RAIN GARDEN SHOULD BE 50/50 MIXTURE OF THE EXCAVATED NATIVE SOILS AND MATURE ORGANIC COMPOST.

**RAIN GARDEN MAINTENANCE NOTES:**

1. RAIN GARDENS SHALL BE INSPECTED FOLLOWING AT LEAST THE FIRST TWO PRECIPITATION EVENTS OF AT LEAST 1.0 INCH TO ENSURE THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER, THE RAIN GARDEN SHALL BE MONITORED AND MAINTAINED TO ASSURE PROPER FUNCTIONING, PLANT GROWTH AND SURVIVAL. PLANTS SHALL BE REPLACED ON AN AS-NEEDED BASIS DURING THE GROWING SEASON.
2. SILT/SEDIMENT SHALL BE REMOVED FROM THE RAIN GARDEN WHEN THE ACCUMULATION EXCEEDS ONE INCH, OR WHEN WATER PONDS ON THE SURFACE OF THE RAIN GARDEN FOR MORE THAN 48 HOURS. THE TOP FEW INCHES OF MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH SOIL MIXTURE AND MULCH.
3. PRUNING OR REPLACEMENT OF WOODY VEGETATION SHALL OCCUR WHEN DEAD OR DYING VEGETATION IS OBSERVED.
4. SOIL EROSION GULLIES SHALL BE REPAIRED WHEN THEY OCCUR.
5. FERTILIZER OR PESTICIDES SHALL NOT BE APPLIED TO PLANTS WITHIN RAIN GARDENS.
6. PERENNIAL PLANTS AND GROUND COVERS SHALL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE VEGETATED GROUND COVER.



**PLANTING SCHEDULE**

LETTER	PLANT SPECIES
A	SWEET PEPPERBUSH
B	SWEET FERN
C	BAYBERRY
D	HIGHBUSH BLUEBERRY
E	BUTTERFLY MILKWEED
F	BLUEFLAG IRIS
G	BEARBERRY

**PROJECT SCOPE**

Excavation of existing pavement and concrete footing installation for a new 60 ft. x 60 ft. metal building for the onsite buses maintenance. Backfilling and new pavement to the building in the front and right side. Installation of a rain garden in the rear as shown on the plan to accept roof runoff without it going onto the pavement to prevent freezing during the winter.

NOTE: DEPICTED UTILITY INFORMATION FROM FIELD SURVEY. CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG-SAFE PRIOR TO ANY EXCAVATION ACTIVITIES.

**NOTES:**

1. THE WETLAND FLAGS SHOWN HEREON WERE DELINEATED BY KATHLEEN MANGAN, WETLAND BIOLOGIST, AND FIELD LOCATED 8/1/19.

**REFERENCES:**

1. TWO TRACTS OF LAND AT WEST KINGSTON IN THE TOWN OF SOUTH KINGSTOWN, R.I., PROPERTY OF WAKEFIELD BRANCH COMPANY SURVEYED AND PLATTED AUG., 1965, A.J. EASTERBROOKS, C.E.

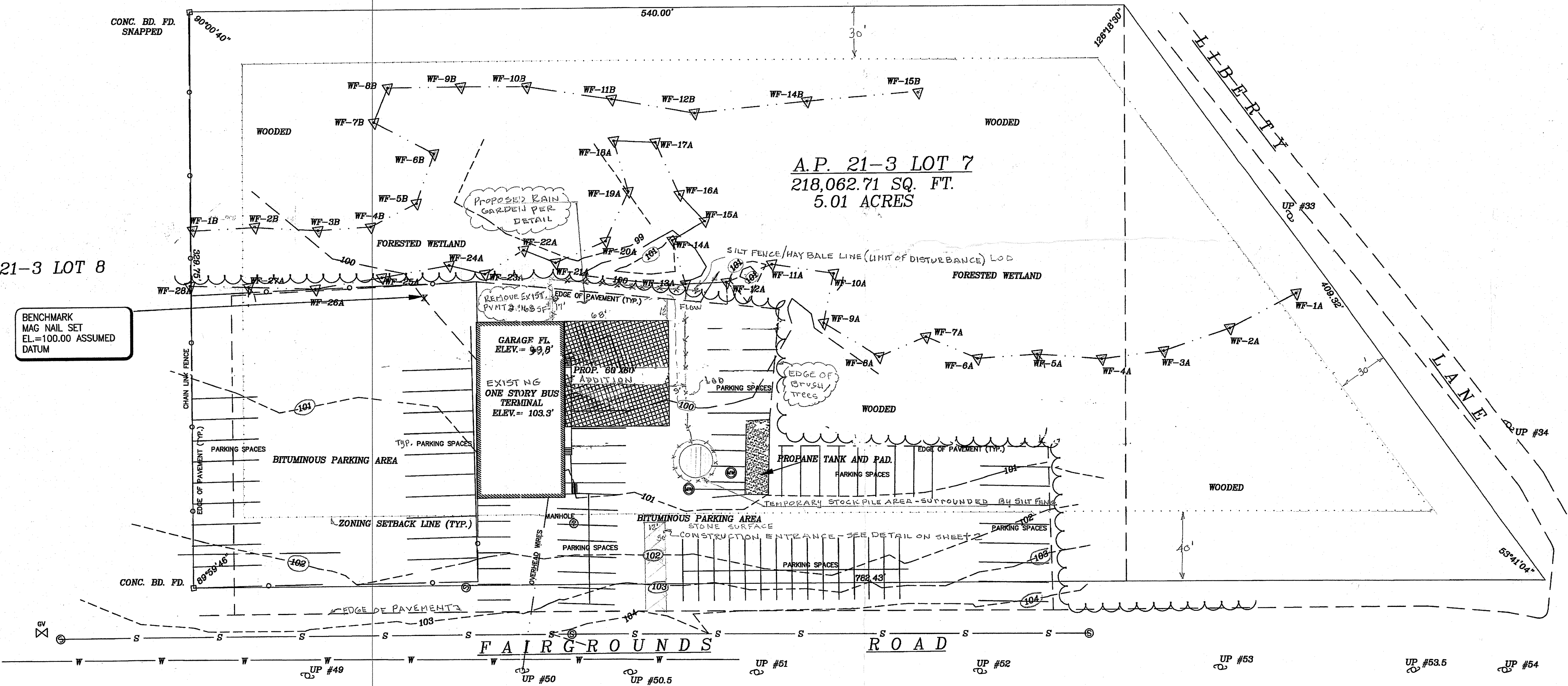
**ZONING - INDUSTRIAL 1**

MINIMUM AREA X SQ. FT.  
 MINIMUM FRONTAGE X FEET  
 MINIMUM SETBACK REQUIREMENTS  
 FRONT 40 FEET  
 SIDE 30 FEET  
 REAR 30 FEET

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED FEB 13 2024 FILE # 19-0345  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Kathy C. Freeman*

A.P. 21-3 LOT 8

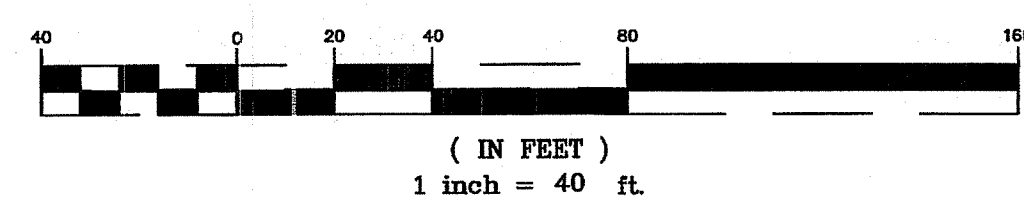
A.P. 21-3 LOT 7  
 218,062.71 SQ. FT.  
 5.01 ACRES



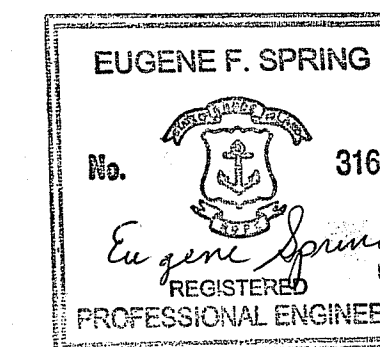
**LEGEND**

- UTILITY POLE
- WETLAND FLAGS BY KATHY MANGAN
- CONCRETE MONUMENT FOUND
- EDGE OF PAVEMENT
- WATER LINE
- SEWER LINE
- SILT FENCE/HAY BALE
- EXISTING GRADE
- NO PROPOSED GRADE CHANGE
- GAS LINE (RELOCATE)

**GRAPHIC SCALE**



SURVEY, TOPOGRAPHY, LIMITED UTILITY  
 AND WETLAND FLAGGING LOCATION BY  
 DANIEL HARRINGTON, PLS



SHEET 2 TITLED "SOIL EROSION CONTROL PLAN & DETAILS."

DATE 09/10/19	PROJECT NO. 1	WETLAND PRELIMINARY DETERMINATION PLAN 45 FAIRGROUNDS ROAD A.P. 21-3 LOT 7 IN SOUTH KINGSTOWN, RI FOR KAD REALTY LLC
SCALE 1"=40'	DRAWING NO. 1	
DESIGNED BY D.F.H.	DRAWN BY D.F.H.	DRAINAGE CALCULATIONS & RAIN GARDEN DESIGN BY EUGENE SPRING, PE 142 HAMPTON WAY, WAKEFIELD, R.I. 02879 401-284-1323; CELL: 401-226-3246
CHECKED BY D.F.H.	SHEET NO. 1	
SHEET 1 OF 2		

**SOIL STABILIZATION & PLANTING PROGRAM**

ACCEPTABLE PLANTING MATERIALS: LOAM-THE MATERIALS TO BE FURNISHED SHALL CONSIST OF LOOSE, FRIABLE, SANDY LOAM OR LOAM TOPSOIL FREE OF A MIXTURE OF SUBSOIL, REFUSE, STUMPS, ROOTS, ROCKS, BRUSH, WEEDS AND OTHER MATERIAL WHICH WILL PREVENT THE FORMATION OF A STABLE SEED BED.

SEED MIXTURE-ALL LEGUME SEED SHALL BE INOCULATED WITHIN 24 HOURS BEFORE MIXING AND PLANTING WITH THE APPROPRIATE INOCULUM FOR EACH VARIETY. ALL INOCULA SHALL BE FRESH AND SHALL BE USED WITHIN THE DATE LIMIT PRESCRIBED BY THE MANUFACTURER.

FOR RELATIVELY FLAT SLOPES

MIX	% WEIGHT
RED FESCUE-CHEWING'S PENNLAWN OR CREEPING	70
KENTUCKY BLUEGRASS	15
COLONIAL BENTGRASS - ASTORIA OR EXETER	5
PERENNIAL RYEGRASS	10

-SEEDING RATE - 100 LBS PER ACRE

FOR STEEP SLOPES 3:1 OR GREATER

MIX	% WEIGHT
RED FESCUE - PENNLAWN OR CREEPING	75
PERENNIAL RYEGRASS	5
COLONIAL BENTGRASS - ASTORIA OR EXETER	5
BIRDSFOOT TREFLOIL - EMPIRE	15

FOR SOD WATERWAYS, DRAINAGE DITCHES & DRAINAGE BASINS

MIX	% BY WEIGHT
CREEPING RED FESCUE	50
TALL FESCUE OR RED CANARYGRASS*	50

\* USE REED CANARYGRASS WHERE MOWING IS NOT REQUIRED

THE ACCEPTABLE PLANTING SEASON SHALL BE BETWEEN APRIL 15 AND OCTOBER 15. CONTRACTOR SHOULD COORDINATE, ON ALL DISTURBED AREAS. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF FOUR (4) INCHES OF LOAM ON AREAS UP TO 10% IN GRADE. ALL OTHER AREAS OVER 10% SHALL RECEIVE A MINIMUM OF SIX (6) INCHES OF LOAM

REFERENCE IS HEREBY MADE TO THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, PUBLISHED BY THE SOIL CONSERVATION SERVICE. THE GUIDELINES SHOWN THEREIN SHOULD BE INCORPORATED INTO THE CONSTRUCTION PRACTICES ON THE SITE.

**EROSION CONTROL PROGRAM**

PRIOR TO START OF CONSTRUCTION, HAYBALES, SILT FENCES AND OTHER SPECIFIED EROSION CONTROL FENCES SHALL BE IN PLACE

CRITICAL AREAS SUCH AS WETLAND AREAS, BUFFERS, SLOPES AND STREAMS SHALL BE PROTECTED AS PER APPROVED PLANS AND, IN THE PRESENCE OF WETLANDS, THE CONDITIONS OF THE ASSENT ORDER SHALL BE ADHERED TO.

**SEDIMENTATION CONTROL PROGRAM**

ALL EXPOSED SLOPES, INCLUDING STOCKPILES OF MATERIAL, SHALL RECEIVE TEMPORARY SEDIMENTATION AND EROSION CONTROL. THIS WILL INCLUDE LOAMING AND SEEDING, MULCHING, HAYMATS, ETC., TO STABILIZE THE AREA.

ALL DRAINAGE STRUCTURES SHALL BE SURROUNDED BY HAYBALES TO PREVENT INFILTRATION OF SEDIMENTS.

SHOULD SEDIMENTS ENTER A CRITICAL AREA, (WETLAND, BUFFER ZONE, ABUTTING PROPERTY, ETC.) THE CONTRACTOR SHALL IMMEDIATELY CLEAN AND RESTORE THE AFFECTED AREA.

**GENERAL NOTES**

- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY THE STATE AND THE MUNICIPALITY IN WHICH WORK IS BEING PERFORMED PRIOR TO THE START OF ANY WORK.
- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DOCUMENT EXISTING CONDITIONS OF SURROUNDING PROPERTIES AND TO MAINTAIN THE INTEGRITY OF THE SAME. ANY DAMAGE TO AND THE COST OF REPAIR OF UTILITIES, ROADWAYS, STRUCTURES AND SURROUNDING PROPERTY SHALL BE FULLY BORNE BY THE CONTRACTOR.
- ALL WORKMANSHIP AND MATERIALS SHALL MEET OR EXCEED THE LATEST STANDARDS OF THE MUNICIPALITY AND THE LATEST STATE STANDARDS AND SPECIFICATIONS PUBLISHED FOR ROAD AND BRIDGE CONSTRUCTION.
- CONTACT DIG-SAFE AND UTILITY COMPANIES FOR EXACT ON-SITE LOCATION OF EXISTING UNDERGROUND UTILITIES AT LEAST FORTY-EIGHT HOURS PRIOR TO START OF CONSTRUCTION.
- ALL CONTRACTOR SHALL ADHERE TO ALL CONDITIONS OF CONSTRUCTION APPROVALS AND SHALL KEEP A COPY OF ALL APPROVALS ON SITE DURING CONSTRUCTION. CONTRACTOR SHALL READ ALL APPROVALS PRIOR TO START OF CONSTRUCTION AND SHALL CLARIFY ANY QUESTIONS BEFOREHAND WITH THE SITE ENGINEER AND MUNICIPALITY.

MATERIAL SIZE	
SQUARE MESH SIEVES	RIDOT 2" CRUSHED STONE
2-1/4 INCHES	100
2 INCHES	90 - 100
1-1/2 INCHES	30 - 55
1-1/4 INCHES	0 - 25
1 INCH	0 - 5

NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. CRUSHED STONE SHALL CONFORM TO THE REQUIREMENTS OF M.01.09 OF THE R.I. STANDARD SPECIFICATIONS.  
 3. LENGTH SHALL BE 50 FT MINIMUM IN SAND AND GRAVEL AREAS OR 100 FT MINIMUM IN SILT AND CLAY AREAS. LENGTH MAY BE REDUCED IF TRAVEL LENGTH IS LESS.

TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES  
**CONSTRUCTION ACCESS ENTRANCE**  
 NO. BY DATE  
 WAB - J.R. Schu 12-6-10  
 TOWN ENGINEER DIRECTOR OF PUBLIC SERVICES ISSUE DATE  
 TSK STANDARD D-9.9

NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT AS CALLED FOR ON PLANS.  
 3. AT APPROXIMATE 100'-0" INTERVALS A BALE OF HAY IS TO BUTT PERPENDICULARLY.

TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES  
**BALED HAY EROSION CHECK**  
 NO. BY DATE  
 WAB - J.R. Schu 12-6-10  
 TOWN ENGINEER DIRECTOR OF PUBLIC SERVICES ISSUE DATE  
 TSK STANDARD D-9.1

NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. 2"x2"x4'-6" (MAX.) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.  
 3. 1"x1"x4'-6" (MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.  
 4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES  
**SILT FENCE DETAIL**  
 NO. BY DATE  
 WAB - J.R. Schu 12-6-10  
 TOWN ENGINEER DIRECTOR OF PUBLIC SERVICES ISSUE DATE  
 TSK STANDARD D-9.2

NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 207 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. TO BE USED IN LOCATIONS WHERE THE EXISTING GROUND SLOPES IN TOWARD THE EMBANKMENT OR IN DRAINAGE DITCHES AS CALLED FOR ON PLANS.  
 3. THE BALES ARE TO BE EMBEDDED A MINIMUM OF 3" INTO THE EXISTING GROUND, HIGHWAY SLOPE OR DITCH SECTION.  
 4. POINTS "A" SHOULD BE AT A HIGHER ELEVATION THAN POINTS "B".

TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES  
**BALED HAY DITCH AND SWALE EROSION CHECK**  
 NO. BY DATE  
 WAB - J.R. Schu 12-6-10  
 TOWN ENGINEER DIRECTOR OF PUBLIC SERVICES ISSUE DATE  
 TSK STANDARD D-9.4

NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. STD. 9.1.0 IS INSTALLED "TIGHT" AGAINST SILT FENCE. THOROUGHLY COMPACT EXCAVATED SOILS BACK INTO TRENCH AFTER INSTALLATION OF EROSION CONTROL DEVICE. SILT FENCE FABRIC SHALL NOT BE SILT. STD. 9.1.0 POST SHALL BE DRIVEN THROUGH SILT FENCE FABRIC. 2"x2"x4'-6" (MAX.) OAK POST FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.  
 3. 1"x1"x4'-6" (MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.  
 4. SILT FENCE AND BALED HAY SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES  
**BALED HAY EROSION CHECK AND SILT FENCE COMBINED**  
 NO. BY DATE  
 WAB - J.R. Schu 12-6-10  
 TOWN ENGINEER DIRECTOR OF PUBLIC SERVICES ISSUE DATE  
 TSK STANDARD D-9.3

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED FEB 13 2020 FILE # 19-0345  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PROJECT: NEW BUILDING CONSTRUCTION  
 REFERENCED PLAN(S):  
 APPROVED PERMITS:  
 SITE LOCATION: 45 FAIRGROUND'S ROAD  
 ASSESSOR'S PLAT 21-3 LOT 7  
 TOWN OF SOUTH KINGSTOWN  
 OWNER KAD REALTY  
 OWNER ADDRESS 503 SOUTH STREET  
 OWNER PHONE NUMBER NEW BRITAIN CT 06051  
 CONTRACTOR ANGELO PASQUAZZI  
 CONTRACTOR'S ADDRESS 581 ATLANTIC AVE WEST  
 CONTRACTOR'S PHONE #  
 ENGINEER EUGENE SPRING  
 ENGINEER'S ADDRESS 142 HAMPTON WAY WAVEBELL RI 0288  
 ENGINEER'S PHONE NUMBER 401-226-3246

