

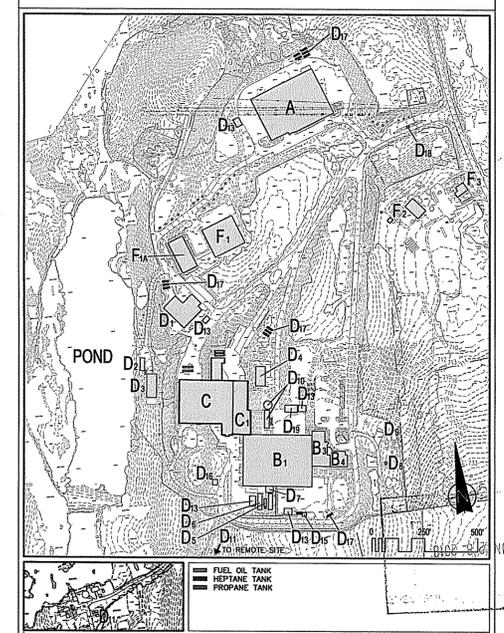
LEGEND:

■ GB FND	GRANITE BOUND FOUND	— PAVEMENT EDGE	⊕ GV	GAS GATE
■ RH FND	RH HIGHWAY BOUND FOUND	— CURB	⊕ GM	GAS METER
⊕ IP FND	IRON PIPE FOUND	— FENCE	⊕ WV	WATER GATE
⊕ IR SET	IRON ROD SET	— WALL, RETAINING	+ 24.50	SPOT ELEVATION
⊕ DH SET	DRILL HOLE SET	— TREE LINE	SMH	SEWER MANHOLE
⊕ STONE WALL	TAX ASSESSOR'S PLAT	— PROPERTY LINE	EXIST.	EXISTING
DB PG	DEED BOOK AND PAGE	— EXISTING CONTOUR	N	NORTH
PB PG	PLAT BOOK AND PAGE	— PROPOSED CONTOUR	S	SOUTH
NF	NOW OR FORMERLY	— UNDERGROUND ELECTRIC	E	EAST
SQ. FT.	SQUARE FEET	— FIRE SUPPLY	W	WEST
AC.	ACRES	— DOMESTIC WATER	CONC.	CONCRETE
U#	UTILITY POLE AND NUMBER	— PROCESSED WATER DRAIN	C	CENTER LINE
---	TRAILS	— PROCESSED WATER SUPPLY	UP	UTILITY POLE
---	APPROXIMATE LIMITS OF 100 YEAR FLOODPLAIN	— PROCESSED WATER RETURN	LP	LIGHT POLE
---	BASED ON FIRM MAP, TOWN OF GLOCESTER, RI	— SANITARY	B	BOLLARD
---	WETLAND EDGE & DELINEATION MARKER	— GAS	CB	CATCH BASIN
---	50' PERIMETER WETLAND	— OVERHEAD WIRES	INV	INVERT
---	100' OR 200' RIVERBANK WETLAND		ELEV.	ELEVATION
---	AREA SUBJECT TO STORM FLOWAGE (ASSF)		MH	MANHOLE
---	STREAM (<10' WIDE)		UNDERGRD.	UNDERGROUND
---	PROJECT LIMITS OF DISTURBANCE		TRF	TRANSFORMER
---	SILT FENCE WITH STRAW BALES		ELEC.	ELECTRIC
---	COMPOST FILTER SOCK		REC.	RECORD MEASUREMENT
			MEAS.	FIELD MEASUREMENT
			CALC.	CALCULATED
			NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988
			S.F.	SQUARE FEET

NOTES:

1. UNDERGROUND UTILITIES DEPICTED HEREON ARE TO BE CONSIDERED APPROXIMATE. ALL UNDERGROUND UTILITIES ARE NOT SHOWN ON THIS MAP.
2. GPS OBSERVATIONS WERE CONDUCTED ON MARCH 30, 2017 AND APRIL 14, 2017. OBSERVATIONS WERE OBTAINED UTILIZING MAINE TECHNICAL SOURCE RTK NETWORK AND STATIC OBSERVATIONS PROCESSED USING NGS BASE OPUS STATIC ONLINE POSITIONING USER SERVICES. GRID BEARINGS ARE RI NAD83, EPOCH 2010 AND ORTHOMETRIC HEIGHT WAS COMPUTED USING GEOID 12B.
3. PORTIONS OF THE SITE OUTSIDE THE PROJECT AREA ARE SUPPLEMENTED WITH AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY COL-EAST INTERNATIONAL LTD. DATED JUNE 1, 2017.
4. SEE BOUNDARY SURVEY FOR WEST GLOCESTER, LLC PREPARED BY NATIONAL SURVEYORS-DEVELOPERS INC. DATED FEBRUARY, 2012.

SITE-KEY PLAN February, 2013



KEY AND BUILDING LEGEND:

A	NATURAL HAZARDS TEST BUILDING	D9	DUST EXPLOSION CHAMBER & VIEWING AREA
B1	BURN AND MATERIALS TEST BUILDING	D10	PROCESS (BLUE) WATER PUMP HOUSE & TANKS
B3	OFFICE AND WESTON BUILDING	D11	REMOTE TEST SITE
B4	MEDIA CENTER	D13	DUMPSTER CANOPY
C	WAREHOUSE BUILDING	D15	HEPTANE PUMP HOUSE
C1	WAREHOUSE CONNECTOR	D16	STILLING BASIN
C2	IGNITABLE LIQUIDS STORAGE BUILDING	D17	PROPANE TANKS
D1	MAINTENANCE AND FITNESS FACILITY	D18	GUARD HOUSE
D2	FIRE PROTECTION (RED) WATER PUMP HOUSE	D19	STORAGE BUILDING
D3	WASTE WATER TREATMENT BUILDING	F1	FIRE PROTECTION LAB
D4	ELECTRICAL HAZARDS LAB	F2	FIRE PROTECTION OFFICE BUILDING
D5	ACECS ELECTRIC CONTROL BUILDING	F3	RECEPTION HOUSE
D6	ACECS STRUCTURE (WSP)		
D7	ACECS TANKS		
D8	EXPLOSIVES STORAGE BOX		

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 27 2018 FILE # 18-0167
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

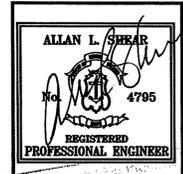
Jonathan D. Wenzel

DRAWING INDEX

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SHEET 5 OF 5	DETAILS

TITLE SHEET

REMOTE TEST SITE MODIFICATIONS
PREPARED FOR
FM GLOBAL RESEARCH CAMPUS
742 REYNOLDS ROAD
WEST GLOCESTER, RHODE ISLAND



CAPUTO AND WICK LTD.
Land Surveying, Civil Engineering,
Environmental Services, Traffic Engineering
and Construction Engineering
1150 PAWTUCKET AVE.
RUMFORD, R.I. 02916-1897
Tel: 401-434-8880 WWW.CWLTD.NET

DATE	JUNE 13, 2018
SHEET	1 OF 5

EXISTING SITE PLAN



ASSESSORS PLAT 3 - LOT 34
ASSESSORS PLAT 5 - LOT 77
OWNER
WEST GLOCESTER LLC
743 REYNOLDS ROAD
GLOCESTER, RI 02814
ZONED "INDUSTRIAL"

WEST GLOCESTER LLC
ASSESSORS PLAT 3, LOT 34

WEST GLOCESTER LLC
ASSESSORS PLAT 5, LOT 77

WEST GLOCESTER LLC
ASSESSORS PLAT 5, LOT 75

WEST GLOCESTER LLC
ASSESSORS PLAT 5, LOT 76

WEST GLOCESTER LLC
ASSESSORS PLAT 4, LOT 74

WEST GLOCESTER LLC
ASSESSORS PLAT 3, LOT 36

WEST GLOCESTER LLC
ASSESSORS PLAT 3, LOT 37

WEST GLOCESTER LLC
ASSESSORS PLAT 2, LOT 33

WEST GLOCESTER LLC
ASSESSORS PLAT 2, LOT 4

WEST GLOCESTER LLC
ASSESSORS PLAT 8A, LOT 10

NF BARBARA N. BATES
PLAT 2, LOT 6

NF BARBARA N. BATES
PLAT 2, LOT 7

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SITE CONSTRUCTION NOTES:

GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL CONFORM WITH THE PROVISIONS OF THE RIDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (AMENDED AUGUST 2015) (RIDOT STANDARDS), AND THE PROJECT SPECIFICATIONS.
- UNDERGROUND UTILITY INFORMATION SHOWN ON THE DRAWINGS HAS BEEN PLOTTED BY THE SURVEYOR FROM RECORD DATA AND MAY NOT BE CORRECT. PRIOR TO ANY EXCAVATION, CONTACT DIG SAFE TO ESTABLISH MORE PRECISE LOCATIONS ON THE GROUND.
- INSTALL 6 INCHES OF LOAM AND SEED IN ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT DESIGNATED FOR ANOTHER SURFACE TREATMENT.
- ALL TOPSOIL, SUBSOIL, TREE ROOTS, LARGE STONES AND ANY OTHER UNSUITABLE MATERIAL SHALL BE STRIPPED FROM THE EXISTING CONDITIONS PRIOR TO THE INSTALLATION OF ANY FILL. MATERIAL SUITABLE FOR USE AS LOAM (TOPSOIL AND SUBSOIL) MAY BE STOCKPILED FOR LATER USE. SEE SITE CONSTRUCTION NOTES.
- ANY DAMAGE TO EXISTING UTILITIES OR PRIVATE PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- ALL CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE STORED AT APPROVED LOCATIONS WITHIN THE SITE. PARKING AND DRIVEWAY AREAS MUST BE MAINTAINED TO AVOID INTERFERENCE WITH VEHICULAR OR PEDESTRIAN USE.
- ALL MATERIALS TO BE HAULED OFF SITE SHALL BE RESPONSIBLY AND LAWFULLY DISPOSED OF IN NONWETLAND LOCATIONS.

GENERAL CONSTRUCTION REQUIREMENTS:

- SOIL EROSION AND SEDIMENT CONTROL SITE MONITORING AND REPORTING SHALL BE AS SPECIFIED ON THESE SITE DRAWINGS AND IN ACCORDANCE WITH APPLICABLE REGULATIONS AND THE SESC PLAN PREPARED FOR THE PROJECT. OBSERVATION REPORT FORM THAT MUST BE USED FOR THE PROJECT.
- ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL NOT OCCUR WITHIN RIVERBANK WETLANDS OR ANY STORM DRAINAGE SYSTEM.
- VEHICLE AND CONCRETE WASHOUT IS PROHIBITED ON PAVED SURFACES. IF REQUIRED ON SITE, CONCRETE WASHOUT LOCATION SHALL BE AS INDICATED ON THESE PLANS AND DETAILS.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL. THIS OPERATION SHALL INCLUDE SWEEPING THE ENTRY ROADWAY AND ALL NONPOROUS PAVED SURFACES LOCATED IN THE SITE AREA AS CONDITIONS WARRANT.
- THE CONTRACTOR SHALL LIMIT OPERATIONS THAT RESULT IN THE GENERATION OF AIRBORNE SEDIMENT. ONLY CLEAN, POTABLE WATER SHALL BE USED TO CONTROL DUST ON EXPOSED SURFACES.

POROUS PAVEMENT PROTECTION:

- SEDIMENTS SHALL NOT BE ALLOWED TO DEPOSIT ON POROUS PAVEMENT SURFACES BY VEHICLE TRACKING, STORMWATER RUNOFF, FUGITIVE DUST, OR ANY OTHER MEANS.
- CONSTRUCTION EQUIPMENT IS PROHIBITED FROM TRAVERSING THE POROUS PAVEMENT, UNLESS AUTHORIZED BY THE DESIGN ENGINEER AND THE PAVEMENT IS PROPERLY PROTECTED BY DURABLE GEOMEMBRANE, SOFT MATS, OR EQUIVALENT AS APPLICABLE.
- IF SEDIMENTS SHOULD ACCUMULATE ON THE POROUS PAVEMENT, THEN THE CONTRACTOR MUST VACUUM THE AFFECTED PAVEMENT PER MANUFACTURER'S RECOMMENDATIONS.

SOIL STABILIZATION AND SEEDING NOTES:

- SEEDING SHALL OCCUR IMMEDIATELY FOLLOWING FINAL GRADING IN DISTURBED AREAS THAT WILL NOT BE SUBJECT TO FURTHER DISTURBANCE.
- AREAS THAT WILL BE SUBJECT TO FURTHER DISTURBANCE BUT WILL REMAIN IDLE FOR MORE THAN 21 DAYS SHALL BE SEEDED WITH ANNUAL RYE OR OTHERWISE PROTECTED TO PROVIDE TEMPORARY STABILIZATION.
- ALL DISTURBED SLOPES SHALL BE IMMEDIATELY STABILIZED WITH APPROPRIATE METHODS AND MATERIALS AS APPROVED BY THE ENGINEER.
- IF ADVERSE WEATHER CONDITIONS DO NOT ALLOW PROPER GRASS GERMINATION AND GROWTH WHERE REQUIRED DURING THE GROWING SEASON, THEN TEMPORARY MULCHING WITH STRAW OR EQUIVALENT METHOD SHALL BE UTILIZED.
- ALL DISTURBED SURFACES TO BE SEEDED SHALL RECEIVE A MINIMUM OF 6" OF TOPSOIL WITH THE SURFACE FINE GRADED.
- FOR AREAS TO BE HYDROSEED, THE HYDROSEED MIX SHALL CONTAIN AN APPROPRIATE TACIFYING AGENT.
- ALL DISTURBED SOILS EITHER NEWLY CREATED, OR EXPOSED, SHALL BE SEEDED OR PROTECTED PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR. ANY AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15 OF THE SAME YEAR MUST BE STABILIZED BY INSTALLING EROSION CONTROL MATTINGS, OR EQUIVALENT.
- SEED APPLICATION SHALL OCCUR IN ACCORDANCE WITH SUPPLIER SPECIFICATIONS AND RECOMMENDATIONS. RECOMMENDED SEED MIXTURES ARE LISTED BELOW.

SEEDING MATERIALS

SEEDING APPLICATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.

MIXTURE:	% BY WEIGHT:
RED FESCUE	70
KENTUCKY BLUEGRASS	15
PERENNIAL RYEGRASS	15
TOTAL 200 LBS./ACRE	
SEEDING DATES: APRIL 1 - JUNE 15; AUGUST 15 - OCTOBER 15	

MIXTURE:	LBS. / 1,000 S.F.	LBS. / AC.	SEEDING DATES:
ANNUAL RYEGRASS	1.0 - 1.5	40 - 60	1/1 - 6/1
PERENNIAL RYEGRASS	1.0 - 1.5	40 - 60	3/1 - 6/15
SUDAN GRASS	0.1 - 1.0	30 - 40	5/15 - 8/15
MILLET	0.1 - 1.0	30 - 40	5/15 - 8/15
WINTER RYE	3.0	120	1/1 - 6/15 or 10/15 - 12/31
OATS	0.5 - 5.0	26 - 120	3/1 - 6/15
KEEPING COVER GRASS	0.5 - 5.0	15 - 50	5/1 - 7/1

TEMPORARY TREATMENTS SHALL INCLUDE A STRAW, FIBER MULCH OR OTHER PROTECTIVE COVER SUCH AS A MAT OR FIBER COVER (BURLAP, JUTE, EXCELSIOR BLANKET, ETC.) STRAW APPLICATIONS SHOULD BE APPLIED AT 3,000 - 4,000 LBS/AC.

SITE CONSTRUCTION NOTES:

EROSION AND SEDIMENTATION CONTROL NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR PROPER EROSION CONTROL AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE CONTROLS ARE SPECIFIED IN THE CONTRACT DOCUMENTS.
- THE SESC PLAN PREPARED FOR THE PROJECT MUST BE CLOSELY ADHERED TO INCLUDING ALL MONITORING AND REPORTING REQUIREMENTS.
- APPROPRIATE PRECAUTIONS SHALL BE TAKEN TO PREVENT THE TRACKING OF SOIL FROM CONSTRUCTION EQUIPMENT ONTO PAVED SURFACES. THE STONE CONSTRUCTION ENTRANCES SHOWN ON THE PLANS MUST BE PROPERLY INSTALLED AND MAINTAINED. STONE IS TO BE REPLACED WHEN IT BECOMES LADEN WITH SEDIMENT AND LOOSES ITS EFFECTIVENESS.
- ALL PERIMETER EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF EARTHWORK AT THE SPECIFIC AREAS INDICATED ON THE PLANS. ANY TREE AND SHRUB REMOVAL MAY OCCUR PRIOR TO INSTALLATION OF SUCH CONTROLS, BUT NO GRUBBING, STUMP REMOVAL, GRADING, FILLING, OR OTHER SOIL DISTURBANCE SHALL OCCUR PRIOR TO CONTROL INSTALLATION.
- ALL COMPOST FILTER SOCK AND STRAW BALES ARE TO BE INSTALLED IN ACCORDANCE WITH THE DETAILS. STRAW BALES AND SILT FENCE ARE TO REMAIN FIRMLY AND SECURELY TRENCHED AND WELL STAKED. COMPOST FILTER SOCK IS TO REMAIN WELL STAKED AND IN TIGHT GROUND CONTACT.
- ALL PERIMETER EROSION AND SEDIMENTATION CONTROLS MUST BE PROPERLY MAINTAINED AND MUST REMAIN IN PLACE UNTIL SOILS HAVE STABILIZED TO THE SATISFACTION OF THE ENGINEER, OR RIDEM. CONTROLS ARE TO BE INSPECTED WEEKLY AND IMMEDIATELY FOLLOWING ALL PRECIPITATION EVENTS THAT RESULT IN RAINFALL OF 0.25" OR MORE.
- THE ENGINEER RESERVES THE RIGHT TO SPECIFY ADDITIONAL CONTROLS AS CONDITIONS MAY WARRANT. ACCESSIBLE RESERVES OF COMPOST FILTER SOCK, STRAW BALES, STAKES, AND 15" CRUSHED STONE ARE TO BE MAINTAINED ON SITE FOR ROUTINE MAINTENANCE AND IN THE EVENT OF UNANTICIPATED PROBLEMS REQUIRING IMMEDIATE RESPONSE.
- NO EARTHWORK IS TO OCCUR ON THE DOWNGRADIENT SIDE OF PERIMETER EROSION AND SEDIMENTATION CONTROLS UNLESS OTHERWISE SPECIFIED.
- STONES, CONSTRUCTION DEBRIS, LITTER, OR OTHER SUCH MATERIALS SHALL NOT BE DEPOSITED OUTSIDE OF DESIGNATED PROJECT LIMITS.
- ALL EARTHEN MATERIAL SHALL REMAIN AT LEAST ONE FOOT INSIDE OF ALL PERIMETER EROSION CONTROLS. UNDER NO CIRCUMSTANCE SHALL THE EROSION CONTROLS BE COVERED WITH EARTHEN MATERIAL. ANY EARTHEN MATERIAL THAT IS PLACED ON OR AGAINST EROSION CONTROLS SHALL BE IMMEDIATELY REMOVED.
- COMPOST FILTER SOCK OR STRAW BALE CHECK DAMS SHALL BE INSTALLED PERPENDICULAR TO THE PERIMETER CONTROLS AT THE BASE OF SLOPES AT ANY AREA WHERE STORM WATER TRAVELING ALONG THE PERIMETER CONTROLS IS BEGINNING TO SCOUR A CHANNEL DUE TO VELOCITY.
- SOIL STOCKPILES TO REMAIN IDLE MORE THAN 21 CALENDAR DAYS ARE TO BE RINGED WITH EITHER COMPOST FILTER SOCK OR STAKED STRAW BALES AND SEEDED WITH A CONSERVATION GRASS MIX.
- ANY DISTURBED SOILS NOT DESIGNATED FOR OTHER SURFACE TREATMENT ALONG THE SITE PERIPHERY ARE TO BE LOAMED (MIN. 6 INCHES) AND SEEDED IMMEDIATELY FOLLOWING FINAL GRADING.
- ANY TURBID CONSTRUCTION SHALL TURBID STORMWATER BE ALLOWED TO FLOW BEYOND PROJECT LIMITS. IF ANY TURBID STORMWATER SHOULD TRAVEL BEYOND PERIMETER CONTROLS, THEN CORRECTIVE ACTION MUST BE IMPLEMENTED IMMEDIATELY AND THE ENGINEER SHALL BE NOTIFIED. SEE SESC PLAN FOR REPORTING REQUIREMENTS IN THE EVENT THAT TURBID STORMWATER SHOULD ENTER ANY CLOSED DRAINAGE SYSTEM.

STORMWATER TREATMENT SYSTEM NOTES:

- STRIP ALL TOPSOIL, SUBSOIL AND UNSUITABLE MATERIAL, FILL, TREE ROOTS AND STUMPS AND ANY OTHER IMPERVIOUS OR SPECIFIED SOIL IN THE AREA OF THE INFILTRATION TRENCHES. REPLACE WITH GRANULAR GRAVEL BORROW MEETING THE LATEST SPECIFICATIONS OF RIDOT STANDARDS, SECTION M.01.02, AS REQUIRED.
- IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION VARY SUBSTANTIALLY FROM THOSE SHOWN ON THIS PLAN, NOTIFY ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. IF IN DOUBT, ASK.
- ALL STONE USED FOR CONSTRUCTION OF THE INFILTRATION TRENCHES MUST BE DOUBLE WASHED AS SPECIFIED BY OWS, SECTION 32.10. ACTUAL STONE MATERIAL MAY ALSO BE SUBJECT TO APPROVAL BY ENGINEER.
- FILL MEETING THE ABOVE SPECIFICATION MUST BE PLACED ON SCARIFIED, RELATIVELY DRY NATIVE SOIL.
- 6" COMPOST FILTER SOCK SHALL BE INSTALLED AND MAINTAINED ALONG THE PERIMETER OF INFILTRATION TRENCHES FROM THE TIME THE TRENCHES ARE INSTALLED UNTIL THE SURROUNDING SOIL IS PERMANENTLY STABILIZED.

DRAINAGE SYSTEM AND STORMWATER BEST MANAGEMENT PRACTICES - OPERATION & MAINTENANCE NOTES

UPON SITE-WORK COMPLETION, THE CONTRACTOR SHALL CLEAN THE DRAINAGE SYSTEMS AND ALL ASSOCIATED STRUCTURES, REPAIR ANY VEGETATIVE SOIL EROSION AND SEDIMENT CONTROL MEASURES WHERE REQUIRED (GRASS COVER, GROUND COVER, PLANTINGS, ETC.), AND REPAIR OR REMOVE AS APPROPRIATE THE TEMPORARY SOIL EROSION AND SEDIMENT CONTROL DEVICES (STRAW BALES, COMPOST FILTER SOCK, CHECK DAMS, ETC.). AFTER PERMANENT SOIL STABILIZATION HAS OCCURRED TO THE SATISFACTION OF THE OWNER AND THE DESIGN ENGINEER, ALL TEMPORARY CONTROL MEASURES SHALL BE REMOVED BY THE CONTRACTOR.

PRIOR TO VACATING THE SITE, THE CONTRACTOR SHALL CONDUCT A FINAL INSPECTION OF ALL DRAINAGE-SYSTEM COMPONENTS IN THE PRESENCE OF THE OWNER. UPON ACCEPTANCE BY THE OWNER, PERPETUAL MAINTENANCE OF THE DRAINAGE SYSTEM WILL BECOME THE RESPONSIBILITY OF FM GLOBAL, EXCEPTING ANY WARRANTIES PROVIDED BY MANUFACTURERS OR BY THE CONTRACTOR IN ACCORDANCE WITH THE PROJECT CONTRACT AND SPECIFICATIONS. THE CONSTRUCTED STORMWATER MANAGEMENT SYSTEMS RELY UPON PROPER MONITORING AND MAINTENANCE TO OPERATE AS DESIGNED AND INTENDED, AND A MONITORING AND MAINTENANCE PROGRAM MUST BE IMPLEMENTED AND REMAIN ON-GOING THROUGHOUT THE LIFE OF THE SYSTEMS. TO PROVIDE A FRAMEWORK FOR AN EFFECTIVE PROGRAM, A DRAINAGE SYSTEM AND STORMWATER BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN (O&M PLAN) DOCUMENT HAS BEEN PREPARED SPECIFICALLY FOR THE PROJECT FOR USE BY THE OWNER. THE O&M PLAN DOCUMENT BECOMES EFFECTIVE IMMEDIATELY UPON PROJECT ACCEPTANCE BY THE OWNER, AND ADHERENCE TO THE DOCUMENT IS THE RESPONSIBILITY OF THE OWNER.

THE ACTIVITIES LISTED BELOW HAVE BEEN INCORPORATED INTO THE O&M PLAN DOCUMENT. THEY ARE NOT DIRECTLY RELATED TO THE CONSTRUCTION PERIOD, EXCEPT UP THROUGH THE PERIOD WHEN DRAINAGE SYSTEMS ARE ACCEPTED BY THE OWNER AT PROJECT COMPLETION. THAT IS, THE CONTRACTOR SHALL MAINTAIN THE OPERATIONAL SYSTEMS IN GOOD WORKING ORDER UNTIL THE MONITORING AND MAINTENANCE RESPONSIBILITIES ARE TRANSFERRED TO THE OWNER. THE MONITORING AND MAINTENANCE OF THE STORMWATER SYSTEMS SHALL BE ADDRESSED AS INDICATED BELOW. THE MONITORING AND MAINTENANCE SCHEDULE SHALL BE CONSIDERED AS A MINIMUM, AND SHALL BE ADJUSTED AS CONDITIONS WARRANT.

MONITORING:

THE DRAINAGE SYSTEMS ARE TO BE MONITORED BY THE OWNER, WHO SHALL DIRECT AN INDIVIDUAL TO ACT AS THE DRAINAGE SYSTEM MANAGER. THIS INDIVIDUAL SHALL KEEP A LOG OF ALL INSPECTIONS, NOTABLE OBSERVATIONS, AND MAINTENANCE ACTIVITIES. THE LOG SHALL BE MADE AVAILABLE TO RIDEM WITHIN TEN (10) DAYS OF ANY WRITTEN REQUEST BY RIDEM. THE O&M PLAN DOCUMENT CONTAINS FORMS FOR THE OWNER'S USE IN RECORDING THE MONITORING AND MAINTENANCE ACTIVITIES PERFORMED.

- INFILTRATION TRENCHES SHALL BE INSPECTED SEMI-ANNUALLY TO ENSURE THAT THEY ARE DRAINING FREELY AND FREE FROM STRUCTURAL DAMAGE.
- POROUS PAVEMENT SHALL BE INSPECTED SEMI-ANNUALLY TO ENSURE THAT IT IS DRAINING FREELY.
- INSPECT POROUS PAVEMENT SURFACES SEMI-ANNUALLY FOR DETERIORATION OR SPALLING. REPAIRS TO THESE AREAS SHALL ONLY BE WITH SIMILAR MATERIALS. STANDARD IMPERVIOUS PAVEMENTS SHALL NOT BE ALLOWED FOR PATCHING IN THESE AREAS.

THE OPERATION AND MAINTENANCE SCHEDULE SHALL CONSIST OF THE FOLLOWING:

- THE ACCESS ROADWAYS AND PARKING AREAS SHALL BE SWEEPED CLEAN ON A SEMI-ANNUAL BASIS TO REMOVE CONTAMINANTS AND SOIL FINES. IT IS PARTICULARLY IMPORTANT TO SCHEDULE SPRING SWEEPING TO REMOVE RESIDUAL SAND RESULTING FROM WINTER SNOW AND ICE REMOVAL OPERATIONS.
- THE POROUS PAVEMENT ROADWAYS SHALL BE SWEEPED CLEAN ON A SEMI-ANNUAL BASIS WITH A HIGH EFFICIENCY VACUUM SWEEPER TO REMOVE CONTAMINANTS AND SOIL FINES. IT IS PARTICULARLY IMPORTANT TO SCHEDULE SPRING SWEEPING TO REMOVE RESIDUAL PARTICULATES. ADJACENT IMPERVIOUS SURFACE ROADWAYS MAY BE SWEEPED BY CONVENTIONAL MEANS AT LEAST TWICE ANNUALLY.
- NO WINTER SANDING SHALL BE ALLOWED ON THE PAVEMENT SURFACES. SALT USE SHALL BE MINIMAL. WHEN NECESSARY TO LOOSEN SOIL ON THE PAVEMENT SURFACE, JET WASHING SHALL BE USED IN COMBINATION WITH VACUUM.
- ALL DAMAGED STRUCTURES SHALL BE REPAIRED PROMPTLY UPON DISCOVERY. THE MATERIALS FOR ANY DRAINAGE STRUCTURE SHALL MATCH THE ORIGINAL DESIGN SPECIFICATIONS.
- IF UPON INSPECTION, EVIDENCE OF HYDROCARBONS (OIL AND GASOLINE) SHOULD BE OBSERVED, THEN STEPS SHALL BE INITIATED IMMEDIATELY TO REMOVE AND LAWFULLY DISPOSE OF THE MATERIAL. THE FULL EXTENT OF THE MATERIAL SHALL BE ASSESSED, AND THE MATERIAL SHALL BE REMOVED FROM ALL AFFECTED AREAS. AT NO TIME SHALL HYDROCARBON-BASED MATERIALS BE ALLOWED TO REMAIN IN ANY STORMWATER MANAGEMENT FEATURE. COORDINATE WITH ENGINEER FOR FURTHER INFORMATION REGARDING SPILL PREVENTION AND AN OVERVIEW OF RESPONSE AND REPORTING REQUIREMENTS IN THE EVENT THAT A SPILL SHOULD OCCUR.
- GRASS ADJACENT TO INFILTRATION TRENCHES SHALL BE MOWED WHEN THE AVERAGE HEIGHT OF THE STAND IS 6" OR GREATER. AFTER MOWING, THE AVERAGE HEIGHT OF THE GRASS WITHIN THE GRASSED STRIP SHALL BE AT LEAST 3". GRASS CLIPPINGS SHALL NOT BE ALLOWED TO ACCUMULATE ON INFILTRATION TRENCH STONE.
- IMPERVIOUS SURFACES CONTRIBUTING TO THE SPECIFIED GPA'S SHALL BE SWEEPED CLEAN OF DEBRIS AND ACCUMULATION OF SILT OR SAND ON A REGULAR BASIS. A SPRING AND FALL CLEANING SCHEDULE IS RECOMMENDED.
- TRASH AND DEBRIS SHALL BE REMOVED FROM THE GPA'S ON AN AS NEEDED BASIS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE GPA'S PRIOR TO FINAL ACCEPTANCE. THEREAFTER, ACCUMULATED SEDIMENT (E.G., SAND FROM ANY WINTER SANDING OPERATIONS) SHALL BE REMOVED FROM THE GPA'S, IF DEEMED NECESSARY BY THE INSPECTOR, AT THE TIME OF SEMI-ANNUAL INSPECTION.
- THE GPA'S SHALL BE INSPECTED AT SEMI-ANNUALLY. ANY BARE SPOTS, COMPROMISED GRASS VIGOR, OR EVIDENCE OF EROSION SHALL BE CORRECTED IMMEDIATELY UPON DETECTION.
- REPLANTING, REGRADING, OR RESEEDING REQUIRED FOR THE GPA'S SHALL BE ACCOMPLISHED PROMPTLY TO ENSURE PROPER FUNCTIONING. WHEN NECESSARY, APPROPRIATE FERTILIZER AND PESTICIDES SHALL BE APPLIED BY A LICENSED PROFESSIONAL AND ONLY AT MINIMAL APPLICATION RATES (TO PREVENT THE CONTAMINATION OF STORMWATER RUNOFF AND GROUNDWATER). TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED DURING MAINTENANCE OPERATIONS IF NECESSARY.
- THE GPA'S SHALL BE MOWED AT LEAST ONCE PER GROWING SEASON, PREFERABLY AFTER MID-AUGUST. GRASS CLIPPINGS SHALL BE REMOVED, AND ANY DAMAGED AREAS SHALL BE REPAIRED. AUTUMN RAKING SHALL BE CONDUCTED AS REQUIRED TO REMOVE ACCUMULATED LEAVES. ANY CLIPPINGS, UNWANTED INVASIVE VEGETATION, OR LEAVES SHALL BE LAWFULLY DISPOSED OF AT AN APPROPRIATE UPLAND LOCATION, OUTSIDE OF ANY REGULATED FRESHWATER WETLAND AREA.
- VEHICLES SHALL BE PREVENTED FROM DRIVING ON THE GPA'S. IF ANY GPA SHOULD BECOME COMPACTED, THEN THE SOIL MUST BE SUITABLY AMENDED, TILLED, AND RE-SEED TO RESTORE INFILTRATION CAPABILITY.

GENERAL MAINTENANCE:

- GRASSED SLOPES SHALL REMAIN WELL STABILIZED WITH CONTINUOUS GRASS COVER OR OTHER DESIGNATED SURFACE TREATMENT TO PREVENT EROSION AND CONSEQUENT SEDIMENT CONTRIBUTIONS TO DRAINAGE STRUCTURES. EXPOSED AREAS SHALL BE RESEED IMMEDIATELY TO STABILIZE EXPOSED SOILS.
- SHOULD PAVEMENT SEAL COATING AND CRACK REPAIR BE REQUIRED, THE USE OF COAL-TAR BASED SEALANTS SHALL BE PROHIBITED (DUE TO HIGH CONTENT OF POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)). THE USE OF ASPHALT-BASED SEALANTS IS ACCEPTABLE.
- TRASH RECEPTACLES SHALL BE SITED THROUGHOUT SITE AND SHALL BE EMPTIED REGULARLY AND FOLLOWING EVENTS.
- THE USE OF FERTILIZERS SHALL BE AVOIDED, OR AT LEAST MINIMIZED, TO MAINTAIN GRASS COVER UNDER LONG-TERM OPERATION OF THE FACILITY. IF NEEDED TO SUSTAIN HEALTHY GRASS COVER, THEN ORGANIC FERTILIZERS SHALL BE APPLIED BY A QUALIFIED, LICENSED PROFESSIONAL AND ONLY TO THE MINIMUM QUANTITIES REQUIRED.

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OFFICE OF WATER RESOURCES
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

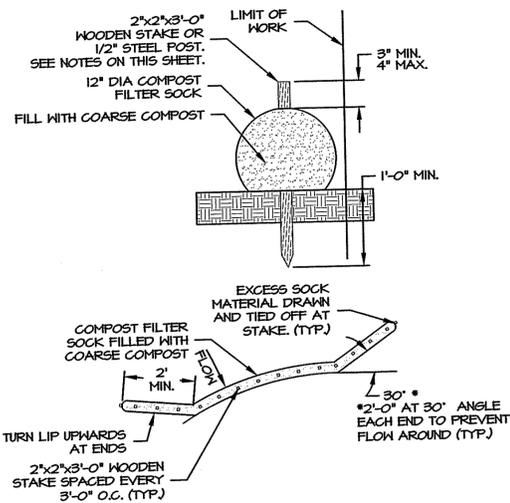
Signature

NOTES

REMOTE TEST SITE MODIFICATIONS
PREPARED FOR
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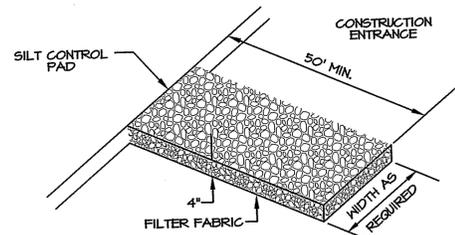
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GENERAL NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF AND SEDIMENT PER THESE NOTES AND COMPOST FILTER SOCK DETAILS, PLANS, AND SHEET.
2. FOR DITCH APPLICATIONS, MINIMUM INSTALLED HEIGHT OF SINGLE SOCK NOMINALLY. SOCKS ARE PLACED PERPENDICULAR TO FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP SIDE SLOPE TO TOP OF BANK OR MAXIMUM 3 FEET ABOVE INSTALLED HEIGHT. FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.
3. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM TILLS ARE OBSERVED.
4. REMOVAL SHALL BE ACCOMPLISHED BY CUTTING SOCK OPEN AND SPREADING THE FILL MATERIAL ON THE SITE. ALL NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED. FILTER SOCKS APPLIED IN DITCHES SHALL BE COMPLETELY REMOVED ONCE VEGETATION IS ESTABLISHED.

COMPOST FILTER SOCK
NOT TO SCALE



MATERIALS SIZE			
SQUARE MESH SIEVES	2" CRUSHED STONE OR GRAVEL	ASTM C-33 NO.2	ASTM C-33 NO.3
	% FINER	% FINER	% FINER
2-1/2 INCHES	100	90-100	100
2 INCHES	95-100	85-100	90-100
1-1/2 INCHES	30-55	0-15	-
1-1/4 INCHES	0-5	-	0-15
1 INCH	-	0-5	-
3/4 INCH	-	-	0-5
1/2 INCH	-	-	-
3/8 INCH	-	-	-

NOTE:
SILT CONTROL PAD TO BE INSTALLED AND MAINTAINED IN CONFORMANCE WITH STANDARDS SET FORTH IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (1994 EDITION).

TEMPORARY SILT CONTROL PAD
NOT TO SCALE

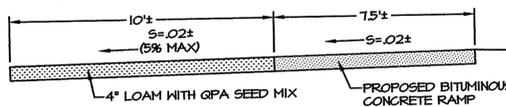
NOTES:

1. PREVENT VEHICLES FROM DRIVING ON THE "QUALIFYING PERVIOUS AREA". IF THE "QUALIFYING PERVIOUS AREA" BECOMES COMPACTED, THE SOIL MUST BE SUITABLY AMENDED, TILLED, AND RE-VEGETATED TO RESTORE INFILTRATION CAPACITY.
2. INSPECT THE "QUALIFYING PERVIOUS AREA" AT LEAST YEARLY TO REMOVE ANY DEPOSITED SEDIMENT (E.G. SAND FROM WINTER SANDING OPERATIONS), ADDRESS ANY PONDING, EROSION, AND REPLANT ANY VEGETATION THAT HAS DIED.

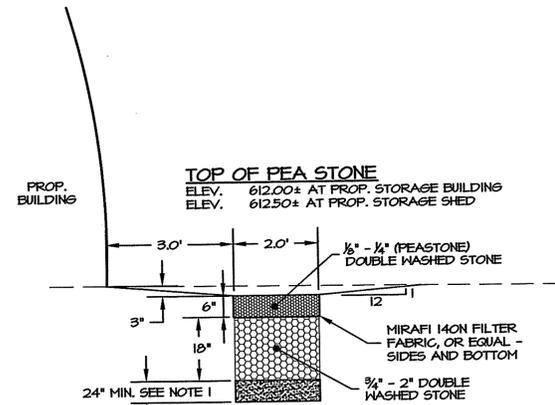
SEEDING REQUIREMENTS

MIXTURE	% BY HEIGHT
RED FESCUE	30
KENTUCKY BLUEGRASS	10
PERENNIAL RYEGRASS	20
LITTLE BLUESTEM	20
TIMOTHY	20

TOTAL SEEDING RATES: 200 LBS./ACRE
SEEDING DATES: APRIL 1 - JUNE 15;
 AUGUST 15 - OCTOBER 15

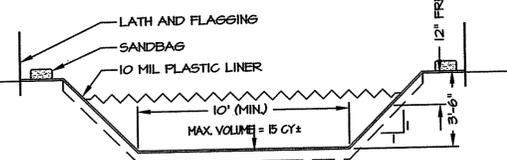
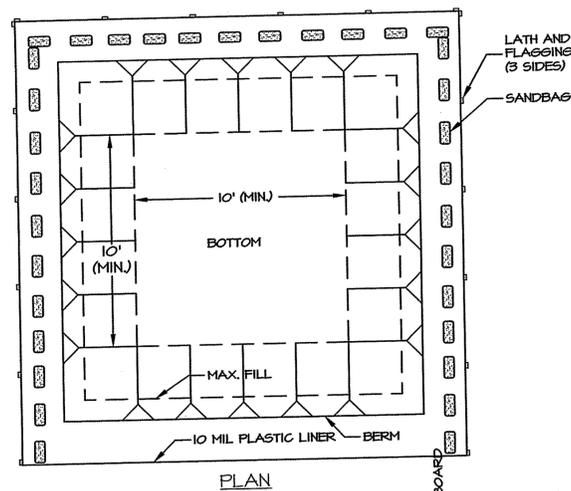


SECTION
QUALIFYING PERVIOUS AREA DETAIL
NOT TO SCALE



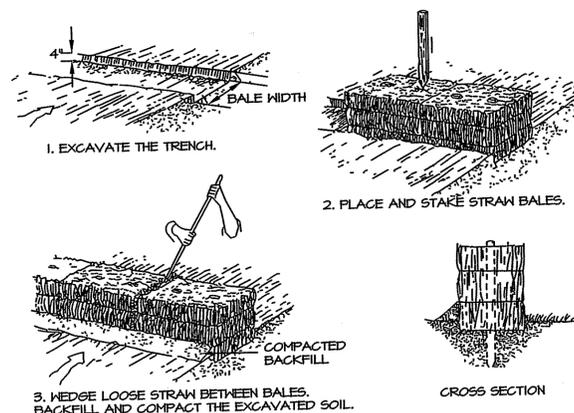
- NOTES:**
1. REMOVE ALL TOPSOIL AND SUBSOIL WITHIN LIMITS OF INFILTRATION TRENCH. REPLACE WITH BANK RUN GRAVEL CONTAINING LITTLE TO NO FINES TO WITHIN 24" OF FINISHED GRADE.
 2. INSTALL JUTE NETTING OR EQUIVALENT IN 3" GRASS STRIP BETWEEN PROPOSED BUILDING AND PROPOSED 2' WIDE INFILTRATION TRENCH IMMEDIATELY FOLLOWING SEEDING.
 3. REMOVE TOP 6" OF PEASTONE AND FILTER FABRIC WHEN INFILTRATION OF RUNOFF SLOWS DUE TO CLOGGING. IF THIS DOES NOT IMPROVE INFILTRATION, REMOVE ALL STONE, AND GRAVEL IF NECESSARY, AND REPLACE AS DETAILED.
 4. PROVIDE 4" LOAM AND GRASS SEED TO DISTURBED AREAS AROUND THE PERIMETER OF THE INFILTRATION TRENCH. PROTECT THE PERIMETER OF INFILTRATION TRENCH FROM EROSION WITH 8" COMPOST FILTER SOCK UNTIL PERMANENT GRASS IS WELL ESTABLISHED.
 5. GRASS ADJACENT TO INFILTRATION TRENCHES SHALL BE MOWED WHEN AVERAGE HEIGHT OF THE STAND IS 6" OR GREATER. AFTER MOWING, THE AVERAGE HEIGHT OF THE GRASS WITHIN THE GRASSED STRIP SHALL AT LEAST BE 3". GRASS CLIPPINGS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE INFILTRATION TRENCH STONE.

INFILTRATION TRENCH DETAIL
SCALE 1"=2'-0"

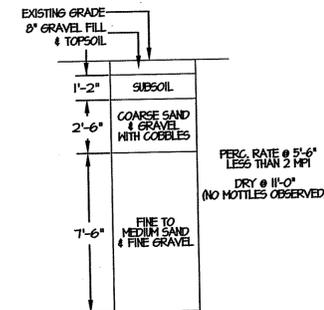


- NOTES:**
1. LINER SEAMS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 2. WASHOUT TO BE LOCATED AT LEAST 50' FROM WETLAND EDGE, OPEN DRAINAGE CHANNELS, DOWNSTREAM CATCH BASINS AND OTHER SENSITIVE AREAS.
 3. SOIL BASE SHALL BE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE PLASTIC LINER.
 4. PLASTIC LINER MATERIAL SHALL BE A MINIMUM 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

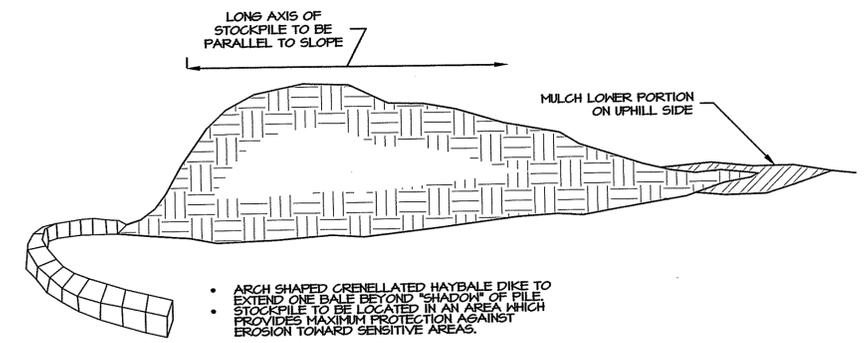
CONCRETE WASHOUT DETAIL
SCALE 1"=4'



STRAW BALE DETAIL



SOIL OBSERVATION HOLE PROFILE
NOT TO SCALE



TEMPORARY STOCKPILE
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