

LEGEND

	EXIST	PROP
TOP/BOTTOM CURB ELEVATION	27.65 TC 27.15 BC X	27.65 TC 27.15 BC X
SPOT GRADE w/LEADER	21.25 X	21.25 X
SPOT GRADE	21.25 X	21.25 X
BORING LOCATION	⊕B-1	⊕B-1
TEST PIT LOCATION	⊕TP-1	⊕TP-1
MONITORING WELL	⊕MW-1	⊕MW-1
BENCH MARK	⊕	⊕
DRAIN MANHOLE	⊕DMH	⊕DMH
CATCH BASIN	⊕CB	⊕CB
DOUBLE CATCH BASIN	⊕DCB	⊕DCB
GUTTER INLET	⊕GI	⊕GI
FLARED END SECTION	FES []	FES []
DRAINAGE LINE	—D—	—D—
OVERHEAD WIRE	—OW—	—OW—
WATER LINE	—W—	—W—
GAS LINE	—G—	—G—
UNDERGROUND ELECTRIC	—UE—	—UE—
UNDERGROUND TELEPHONE	—TEL—	—TEL—
CABLE TV	—CATV—	—CATV—
SEWER MANHOLE	⊕SMH	⊕SMH
SEWER LINE	—S—	—S—
WATER GATE	⊕WG	⊕WG
TAPPING SLEEVE, VALVE, & BOX	⊕TSV	⊕TSV
FIRE HYDRANT	⊕FH	⊕FH
WATER METER	⊕WM	⊕WM
WELL	⊕	⊕
GAS GATE	⊕GG	⊕GG
ELECTRIC MANHOLE	⊕EMH	⊕EMH
ELECTRIC BOX	⊕EB	⊕EB
ELECTRIC METER	⊕EM	⊕EM
LIGHT POLE	⊕LP	⊕LP
TELEPHONE MANHOLE	⊕TMH	⊕TMH
UTILITY POLE	⊕UP	⊕UP
HAND HOLE	⊕HH	⊕HH
PULL BOX	⊕PB	⊕PB
PROPERTY LINE	—PL—	—PL—
LIMIT OF DISTURBANCE	—LOD—	—LOD—
EASEMENT	—E—	—E—
ZONING LINE	—ZL—	—ZL—
GRAVEL ROAD	—GR—	—GR—
PAVED ROAD	—PR—	—PR—
SAWCUT	—SC—	—SC—
EGED OF VEGETATION	—EV—	—EV—
CHAIN LINK FENCE	—CLF—	—CLF—
STONE WALL	—SW—	—SW—
RETAINING WALL	—RW—	—RW—

- ### QPA NOTES:
- CONSTRUCTION VEHICLES SHALL AVOID DRIVING OVER QPA AREAS TO THE MAXIMUM EXTENT POSSIBLE.
 - IF QPA SOILS ARE COMPACTED, THEN THE SOIL MUST BE SUITABLE AMENDED, TILLED, AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE TO RESTORE INFILTRATION CAPACITY.
 - THE SLOPE OF THE QPA MUST BE LESS THAN OR EQUAL TO 5.0%.
 - THE QPA MUST BE INSPECTED YEARLY TO ENSURE NO BUILD-UP OF SEDIMENT. IF THERE IS ACCUMULATION OF SEDIMENT, THEN THE SEDIMENT SHALL BE REMOVED AND THE QPA SHALL BE RESTORED.

TEST HOLE DATA

TESTHOLES EVALUATED BY SOIL EVALUATOR, DAVID KALEN, LICENSE D4052 DATE: 10/31/2018

D1 Ap 0"-11" SL Bw 11"-35" SIL 2C 35"-132" VG,COS ESHGWT = 72"	D4 Ap 0"-13" SL Bw 13"-32" SIL C 32"-44" SIL 2C 44"-132" VG,COS ESHGWT = 72"
D2 Ap 0"-12" SL Bw 12"-55" SIL 2C 55"-132" G,COS ESHGWT = 72"	D5 Ap 0"-11" SL Bw 11"-22" SL 2C 22"-132" VG,COS ESHGWT = 72"
D3 Ap 0"-11" SL Bw 0"-28" SL 2C 28"-132" G,COS ESHGWT = 72"	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED AUG 03 2020 FILE # 19-0122
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
Office of Water Resources
JUL 22 2020

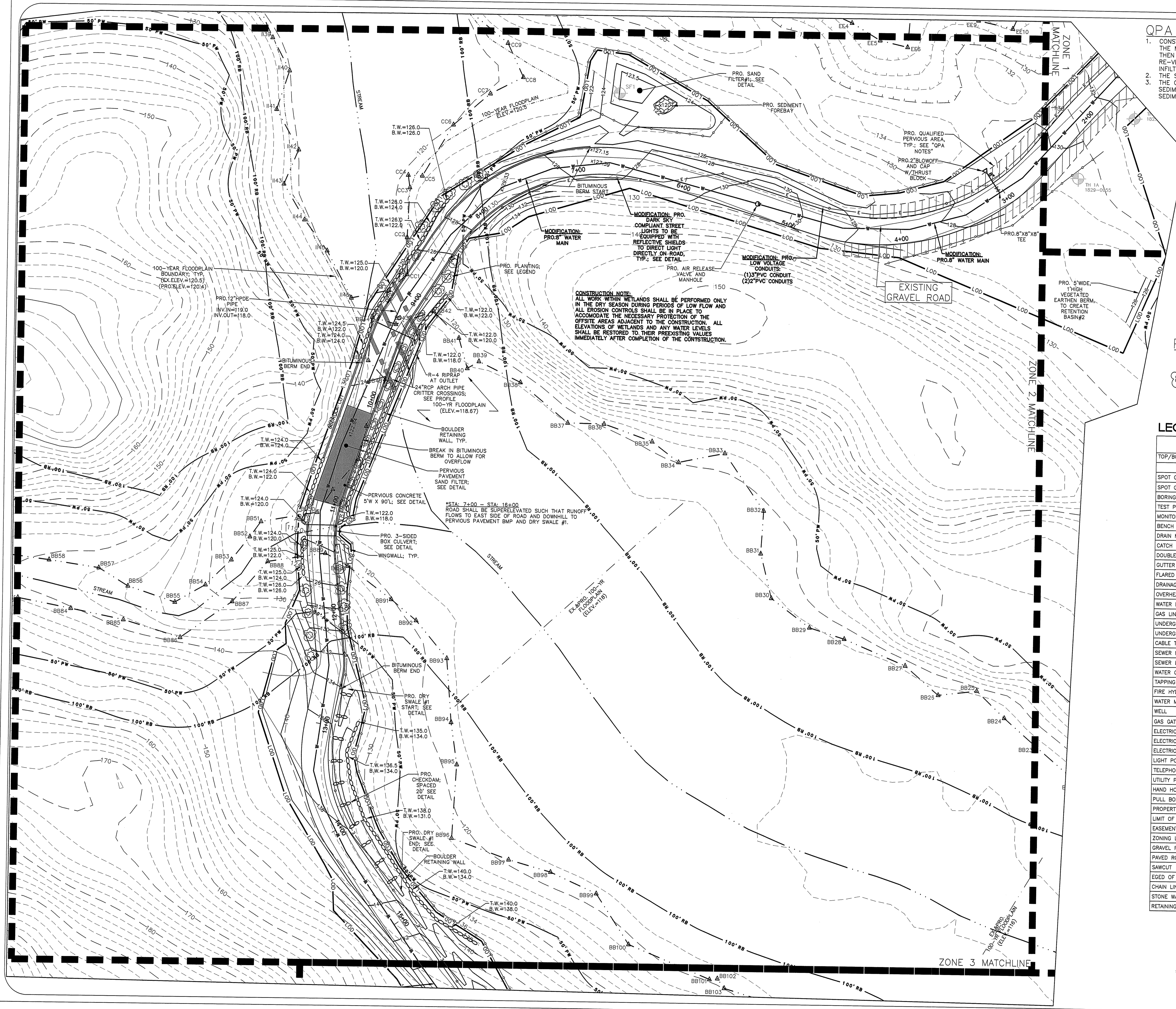
RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
ZONE 1 - GRADING & UTILITY PLAN
A.P. 5B, LOT 38 / A.P. 6B, LOT 2 / A.P. 6B, LOT 4
87 KINGSTOWN ROAD
RICHMOND, RHODE ISLAND
PREPARED FOR: THE PRESERVE AT BOULDER HILLS LLC.
SCALE: AS SHOWN DATE: 04/05/19 SHEET 4 OF 9

REVISIONS:

NO.	DATE	DESCRIPTION	DKM	DKM
1.	12-06-19	RIDEM COMMENTS		
2.	7-13-20	PERMIT MODIFICATION APPLICATION		

REGISTRATIONS:
CARRIGAN ENGINEERING, INC.
CRAIG RICHARD CARRIGAN
REGISTERED PROFESSIONAL ENGINEER

CARRIGAN ENGINEERING, INC.
CIVIL AND ENVIRONMENTAL ENGINEERING
86 BROOK FARM ROAD SOUTH
WAKEFIELD, RI 02879
PHONE: (401) 789-6865



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TEST HOLE DATA

TESTHOLE 1A EVALUATED BY SOIL EVALUATOR, DAVID KALEN, LICENSE D4052
 DATE: 10/31/2018
 TESTHOLE SF1 EVALUATED BY SOIL EVALUATOR, DAVID MANONI, LICENSE D4086
 DATE: 4/3/19

1A SF1
 Ap 0"-8" SL 0"-24" G,FSL
 Bw 8"-21" SIL ESHGWT = 18"
 Bw2 21"-30" SIL
 C 30"-44" SIL
 2C 44"-106" S
 ESHGWT = 70"

PROPOSED PLANTING LEGEND:

- INKBERRY (ILEX GLABRA)
- RHODODENDRON (RHODODENDRON MAXIMUM)

Environmental Management
JUL 22 2020
 Office of Water Resources

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DOUBLE CATCH BASIN	⊕DCB	⊕DCB
GUTTER INLET	⊕GI	⊕GI
FLARED END SECTION	FES	FES
DRAINAGE LINE	D	D
OVERHEAD WIRE	OHW	OHW
WATER LINE	W	W
GAS LINE	G	G
UNDERGROUND ELECTRIC	UOE	UOE
UNDERGROUND TELEPHONE	UTL	UTL
CABLE TV	CATV	CATV
SEWER MANHOLE	⊕SMH	⊕SMH
SEWER LINE	S	S
WATER GATE	WGT	WGT
TAPPING SLEEVE, VALVE, & BOX	TSV	TSV
FIRE HYDRANT	FHY	FHY
WATER METER	WM	WM
WELL	W	W
GAS GATE	GG	GG
ELECTRIC MANHOLE	EMH	EMH
ELECTRIC BOX	EB	EB
ELECTRIC METER	EM	EM
LIGHT POLE	LP	LP
TELEPHONE MANHOLE	TMH	TMH
UTILITY POLE	UP	UP
HAND HOLE	HH	HH
PULL BOX	PB	PB
PROPERTY LINE	PL	PL
LIMIT OF DISTURBANCE	LOD	LOD
EASEMENT	E	E
ZONING LINE	ZL	ZL
GRAVEL ROAD	GR	GR
PAVED ROAD	PR	PR
SAWCUT	SC	SC
EGED OF VEGETATION	EV	EV
CHAIN LINK FENCE	CLF	CLF
STONE WALL	SW	SW
RETAINING WALL	RW	RW

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 87 KINGSTOWN ROAD
 RICHMOND, RHODE ISLAND
 PREPARED FOR: THE PRESERVE AT BOULDER HILLS LLC.
 SCALE: AS SHOWN DATE: 04/05/19 SHEET 5 OF 9

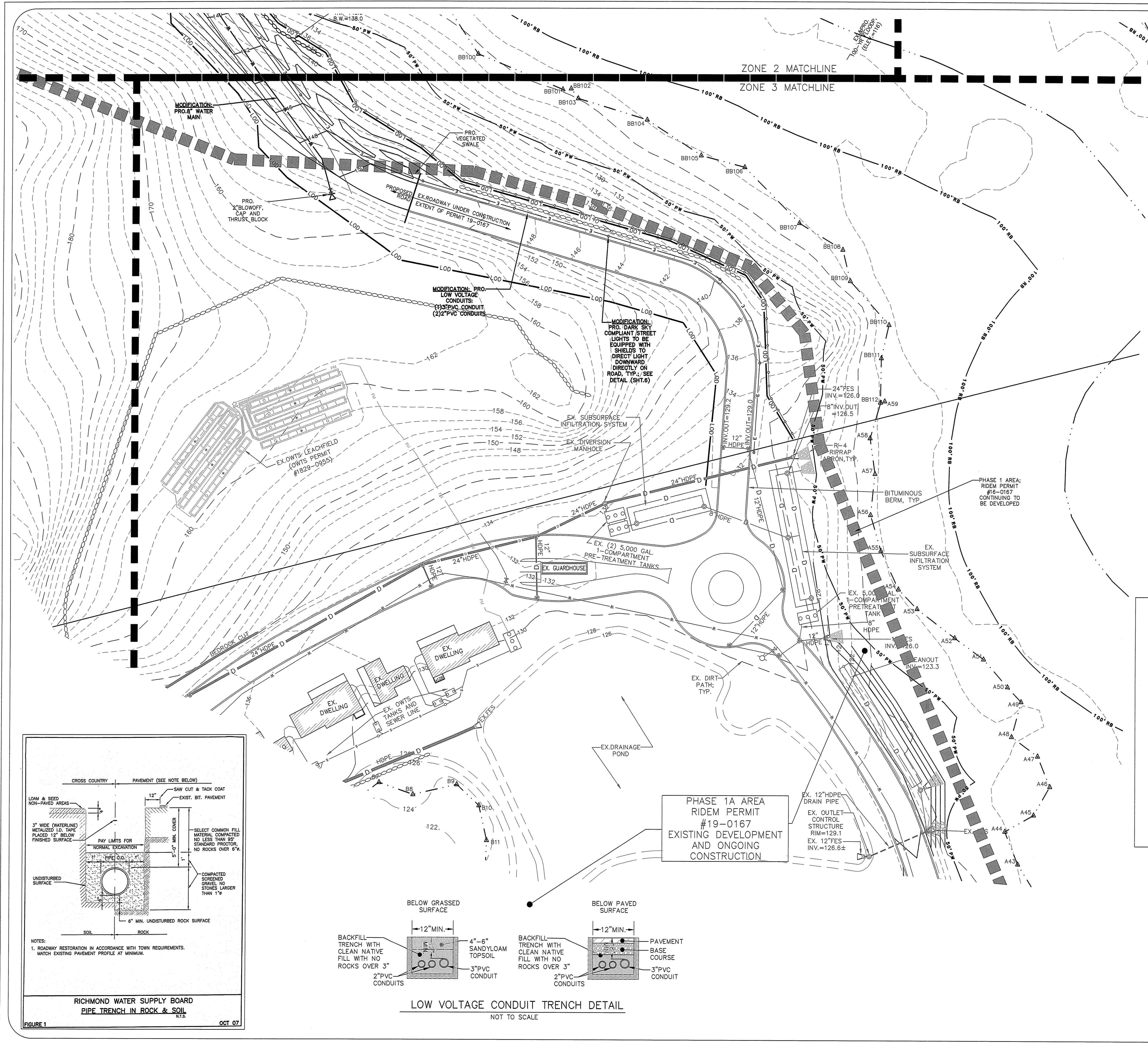
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 REGISTERED PROFESSIONAL ENGINEER

CARRIGAN ENGINEERING, INC.
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 86 BROOK FARM ROAD SOUTH
 WAKEFIELD, RI 02879
 PHONE: (401) 789-6865



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GUTTER INLET	GI	GI
FLARED END SECTION	FES	FES
DRAINAGE LINE	D	D
OVERHEAD WIRE	OW	OW
WATER LINE	W	W
GAS LINE	G	G
UNDERGROUND ELECTRIC	UE	UE
UNDERGROUND TELEPHONE	UT	UT
CABLE TV	CTV	CTV
SEWER MANHOLE	SMH	SMH
SEWER LINE	S	S
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TAPPING SLEEVE, VALVE, & BOX	TSV	TSV
FIRE HYDRANT	FH	FH
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Environmental Management
JUL 22 2020
Office of Water Resources

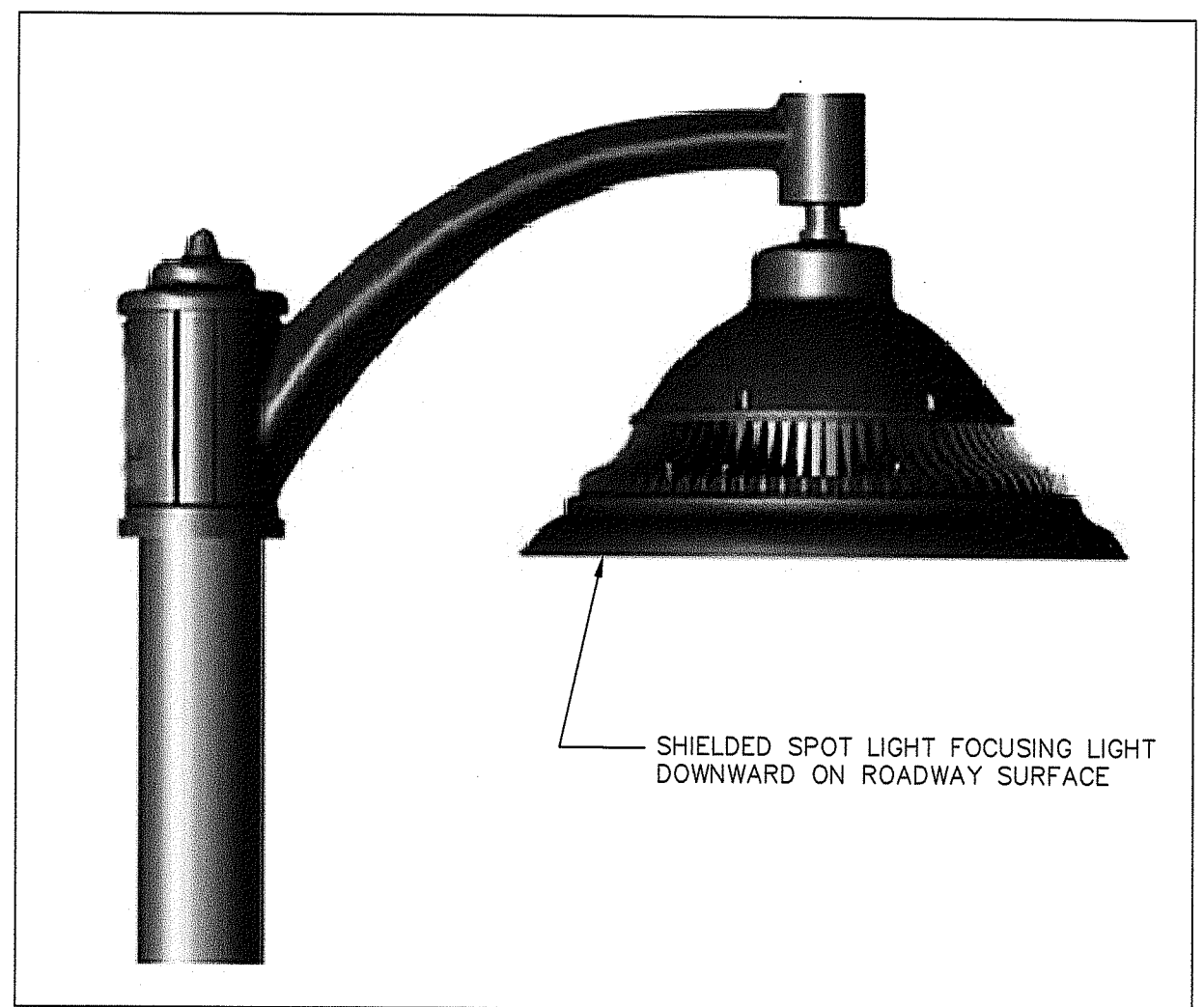
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SCALE: AS SHOWN DATE: 04/05/19 SHEET 6 OF 9

REVISIONS:

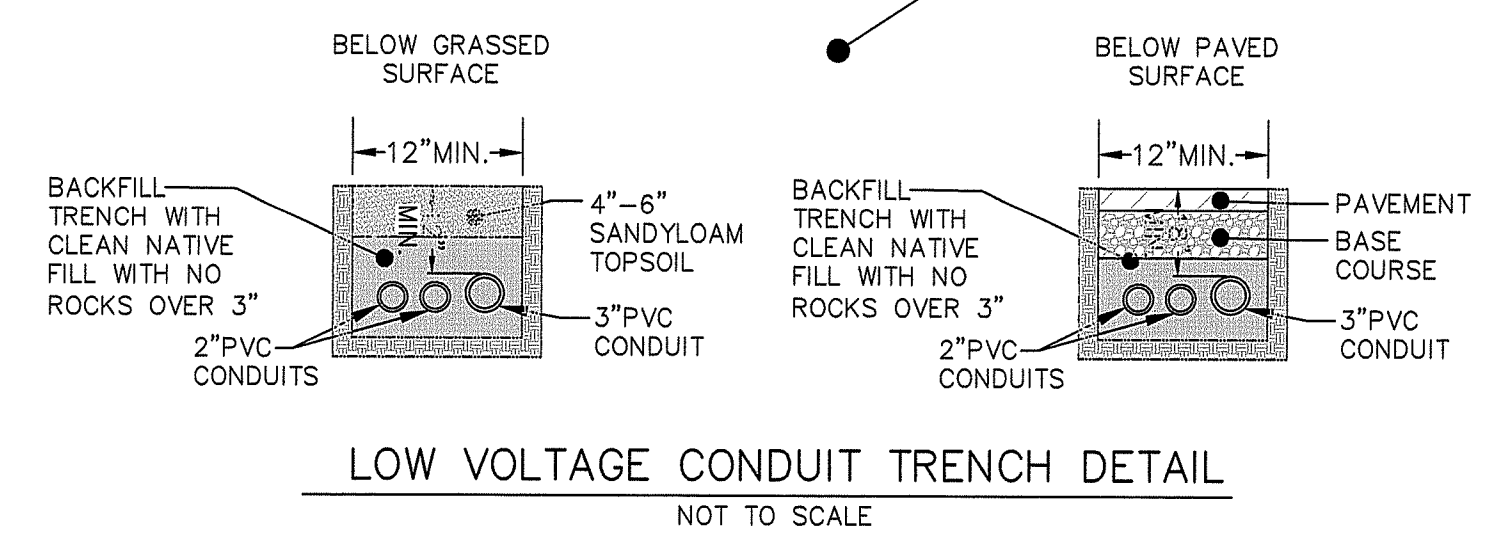
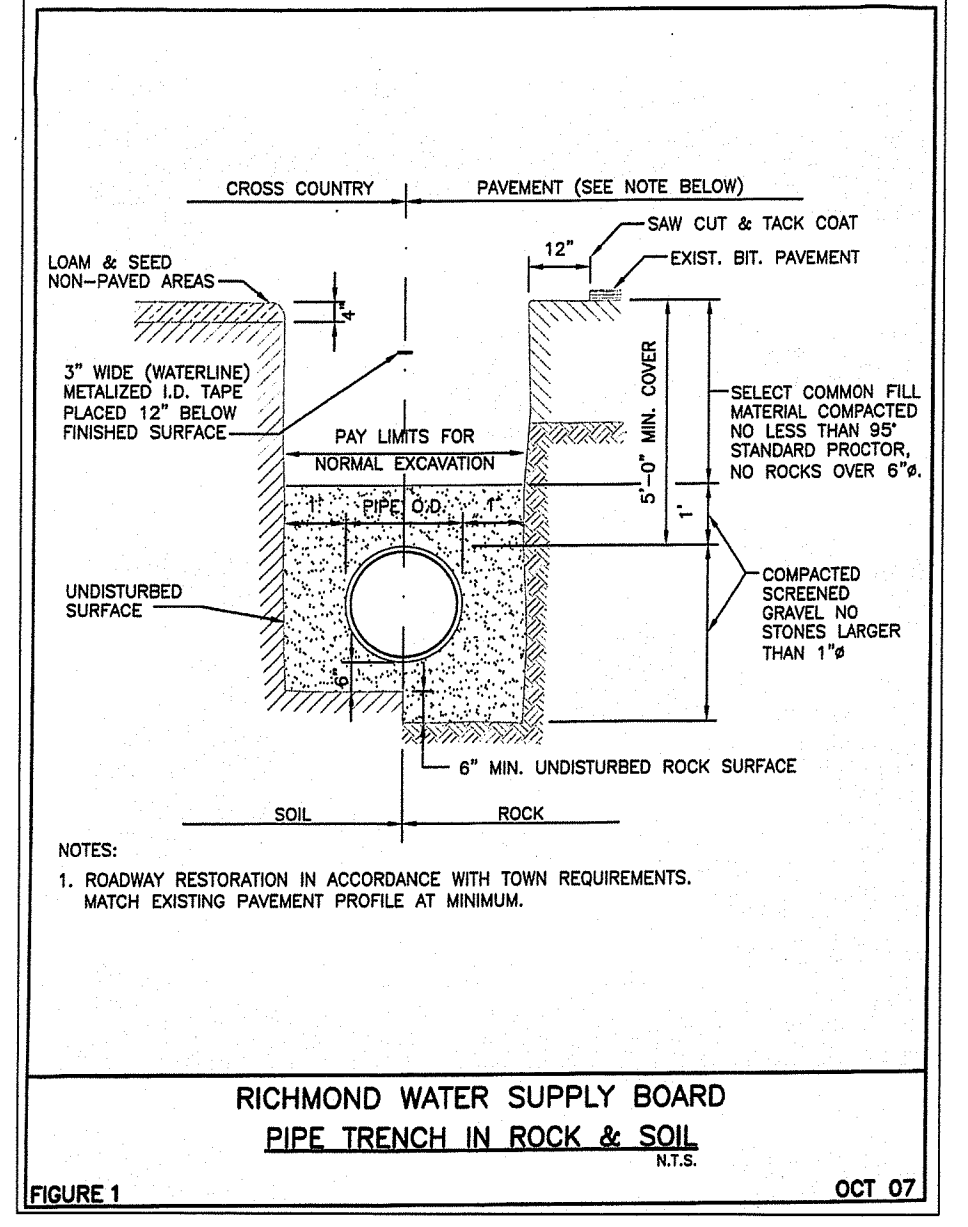
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ASTOR BELL SINGLE PENDANT STREET LIGHT (PT301)
OR APPROVED EQUAL
NOT TO SCALE



PHASE 1A AREA
RIDEM PERMIT
#19-0167
EXISTING DEVELOPMENT
AND ONGOING
CONSTRUCTION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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RIDEM WETLAND PERMIT APPLICATION PLAN PHASE 2

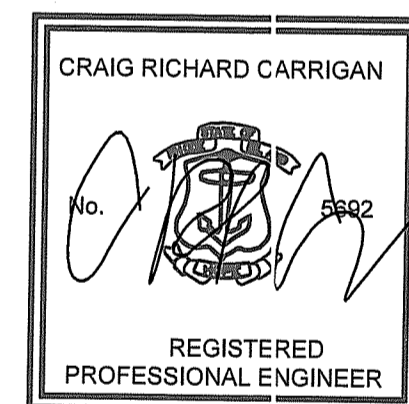
THE PRESERVE AT BOULDER HILLS, LLC & MTM DEVELOPMENT CORPORATION

87 KINGSTOWN ROAD
A.P. 5B, LOT 38
RICHMOND, RHODE ISLAND

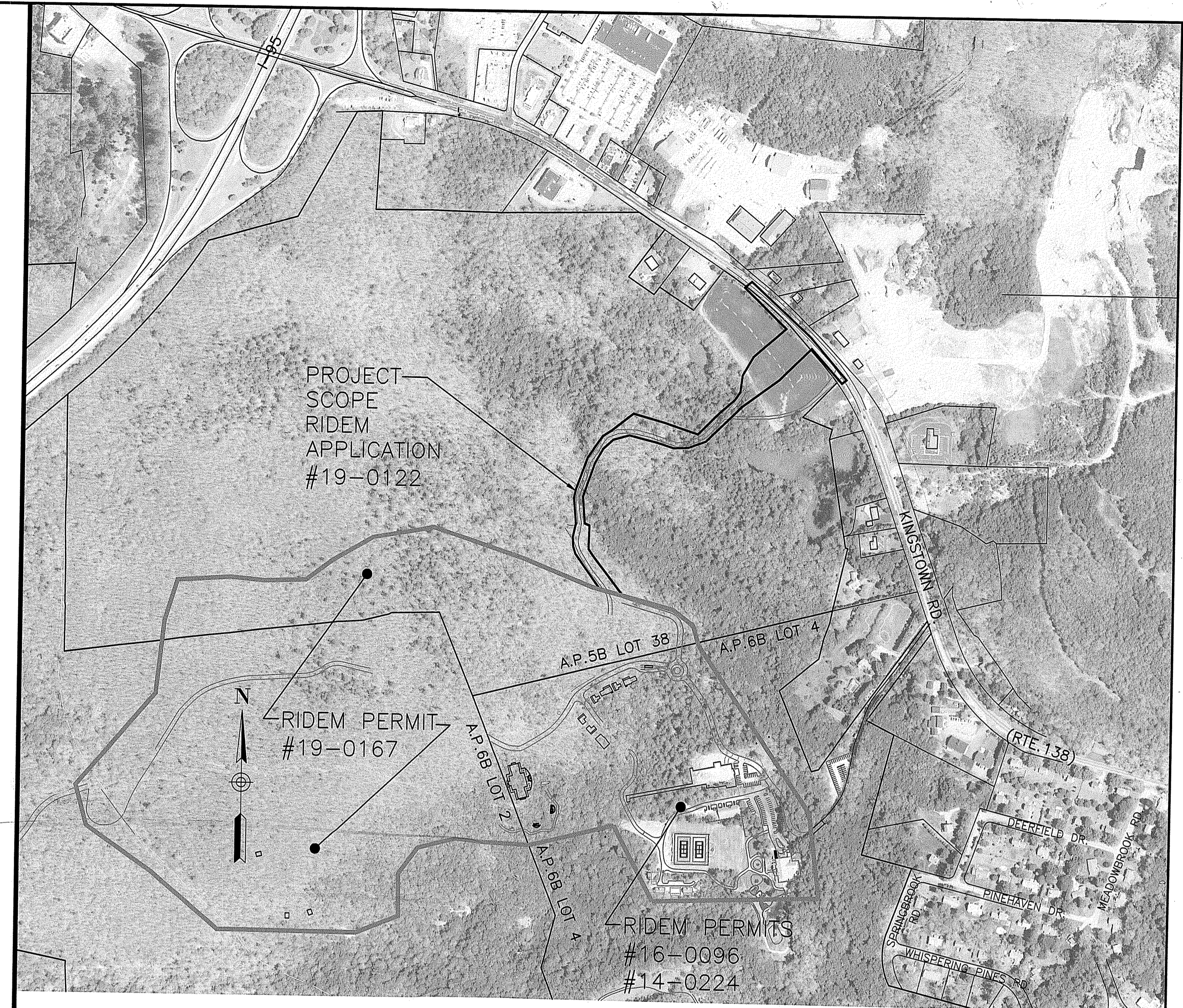
ISSUED FOR PERMITTING

PREPARED FOR
THE PRESERVE AT BOULDER HILLS, LLC

DATE: APRIL 5, 2019
REVISED: 12-06-19



CARRIGAN ENGINEERING, INC.
CIVIL AND ENVIRONMENTAL ENGINEERING
86 BROOK FARM ROAD SOUTH
WAKEFIELD, RI 02879
PHONE: (401) 789-6865



LOCATION MAP
SCALE: 1"=400'

LIST OF DRAWINGS

1. TITLE SHEET
2. EXISTING CONDITIONS SHEET
3. PROJECT SCOPE PLAN
4. ZONE 1: GRADING & UTILITY PLAN
5. ZONE 2: GRADING & UTILITY PLAN
6. ZONE 3: GRADING & UTILITY PLAN
7. WETLAND CROSSING PROFILE PLAN
8. DETAIL SHEET - 1
9. DETAIL SHEET - 2

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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PROJECT DATA

ASSESSORS REFERENCE: A.P. 5B LOT 38
A.P. 6B LOT 2
A.P. 6B LOT 4

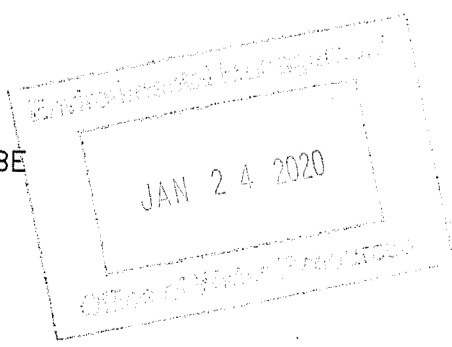
STATE PERMITS: RHODE ISLAND DEPT. OF TRANSPORTATION PHYSICAL ALTERATION PERMIT #190307
RHODE ISLAND DEPT. OF ENVIRONMENTAL INSIGNIFICANT ALTERATION PERMIT #19-0167

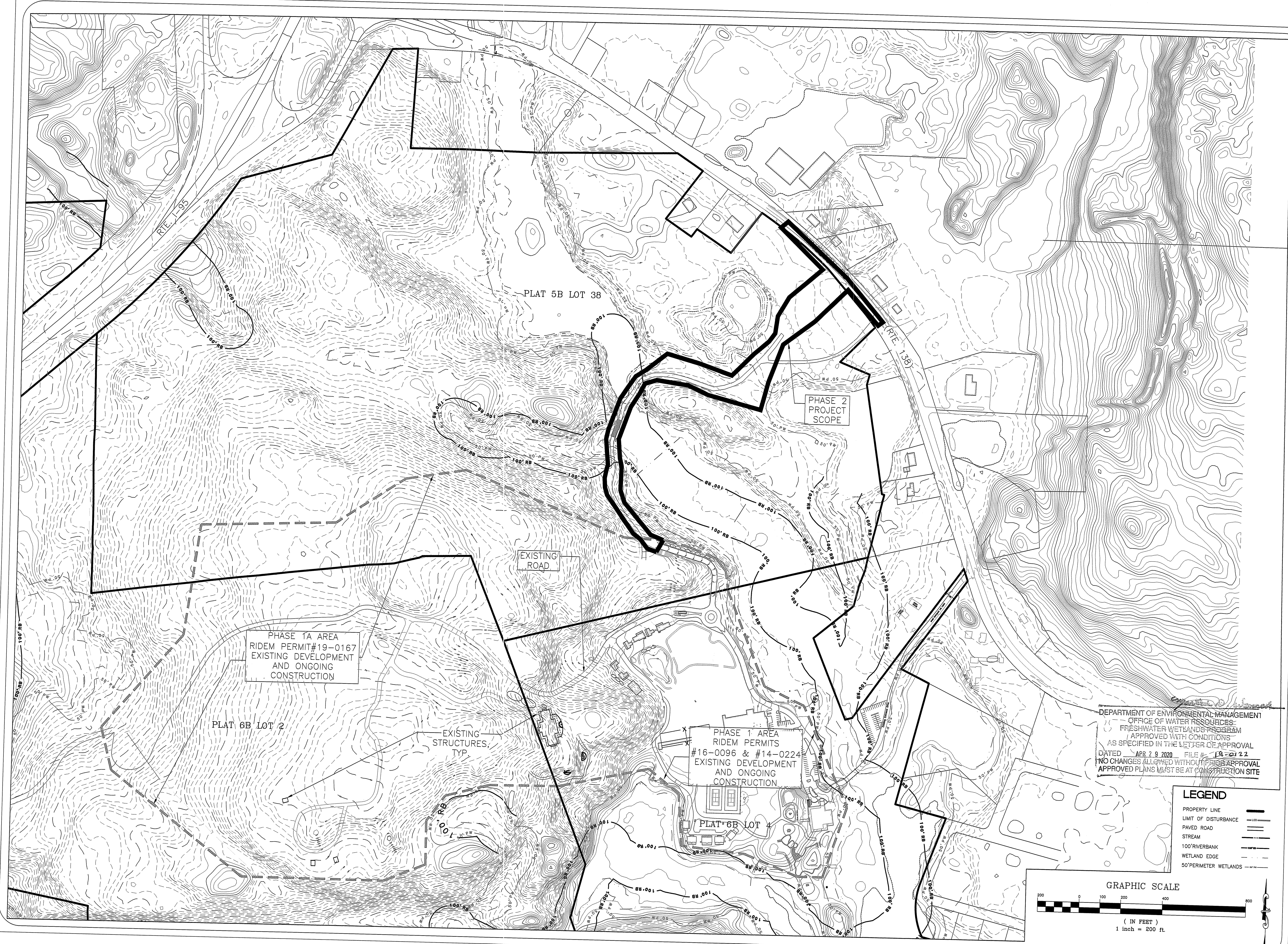
REFERENCES:

1. PROPERTY LINE INFORMATION OBTAINED FROM SURVEY PLANS TITLED "SV-1 EXISTING CONDITIONS SURVEY LIMITED CONTENT PERIMETER SURVEY PREPARED FOR THE PRESERVE AT BOULDER HILLS III, LLC KINGSTOWN ROAD PLAT 5B LOT 38 RICHMOND, RHODE ISLAND", "SV-4 EXISTING CONDITIONS LIMITED CONTENT PERIMETER SURVEY PROPERTY OF CASTLE RESIDENCES, LLC ROUTE 95 PLAT 6B LOT 2 RICHMOND, RHODE ISLAND", AND "SV-5 EXISTING CONDITIONS LIMITED CONTENT PERIMETER SURVEY PREPARED FOR THE PRESERVE AT BOULDER HILLS, LLC & MTM DEVELOPMENT PLAT 6B LOT 4 87 KINGSTOWN ROAD RICHMOND, RHODE ISLAND" ALL PLANS DATED APRIL 18, 2018 AND PREPARED BY CHERENZIA & ASSOCIATES, LTD.
2. ROUTE 138 EDGE OF PAVEMENT, SPOT GRADES, AND EXISTING UTILITY POLES AND HYDRANTS OBTAINED BY SURVEY PERFORMED IN DECEMBER, 2018 BY EAST GREENWICH SURVEYORS.
3. EXISTING WATERLINE INFORMATION WITHIN STATE RIGHT OF WAY OBTAINED FROM PLAN TITLED "CONSTRUCTION AS-BUILT ROUTE 138 WATER TRANSMISSION MAIN EXTENSION PLAN STA. 0+00 TO 23+65", DWG. NO. C-1 SHEET 2 OF 9 DATED 03/2011.
4. EXISTING 2-FOOT CONTOURS OUTSIDE OF SURVEYED AREA OBTAINED FROM RIGIS LIDAR DATA.

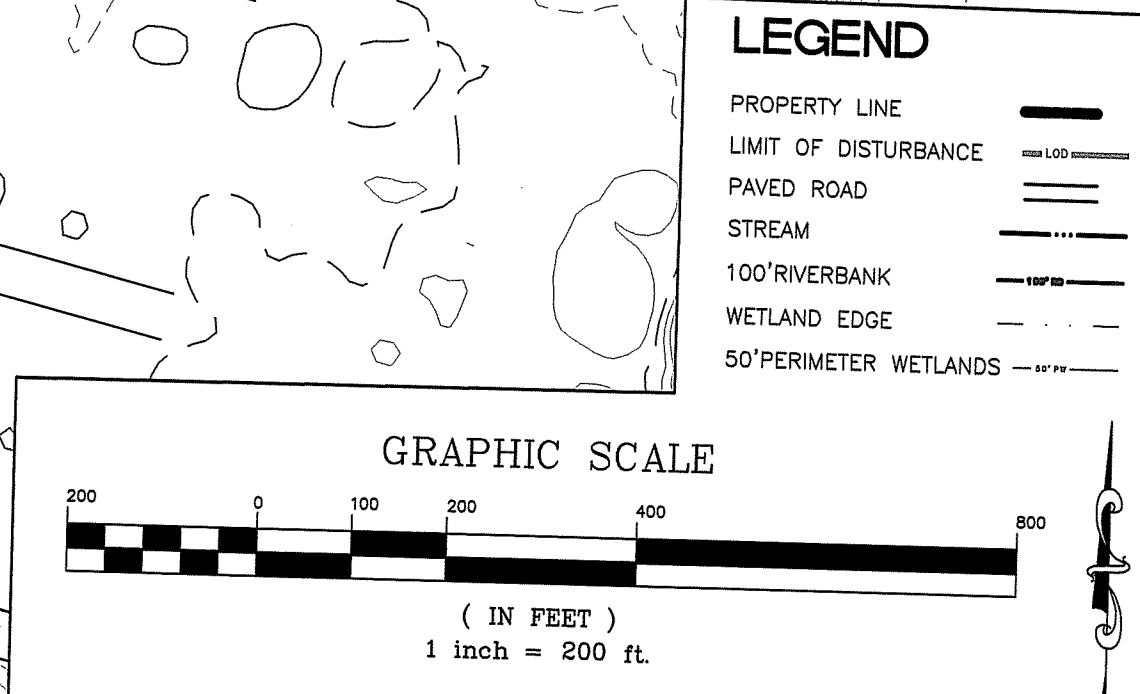
GENERAL NOTES:

1. ALL PLANS AND IMPROVEMENTS CONFORM TO ALL EXISTING AND AMENDED STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARD OF REGISTRATION OF PROFESSIONAL ENGINEERS AND BOARD OF REGISTRATION OF LAND SURVEYORS.
2. ONLY PLANS STAMPED ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION.
3. THE LOCATION AND ELEVATION FOR ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ANY CROSSINGS OF PROPOSED UTILITIES AND EXISTING UTILITIES. ANY DISCREPANCIES IN THE LOCATION OF ANY UTILITY SHOWN OR ENCOUNTERED DURING CONSTRUCTION SHALL BE REPORTED TO MTM DEVELOPMENT CORPORATION, 87 KINGSTOWN RD, RICHMOND, RHODE ISLAND 02898; (401) 539-4653.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY DIG-SAFE (1-800-344-7233) A MINIMUM OF 72 WORKING HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO THE START OF ANY EXCAVATION WORK. THE NAME OF THE COMPANY PERFORMING THE EXCAVATION MUST BE SUPPLIED TO DIG-SAFE, IF IT IS DIFFERENT FROM THE CALLER.
5. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF ALL EXISTING UTILITIES, STRUCTURES, AND ABUTTING PROPERTIES. THE COST OF ANY REPAIR OR REPLACEMENT OF DAMAGED ITEMS SHALL BE BORNE BY THE CONTRACTOR.
6. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH MUTCD 2009 LATEST REVISION.

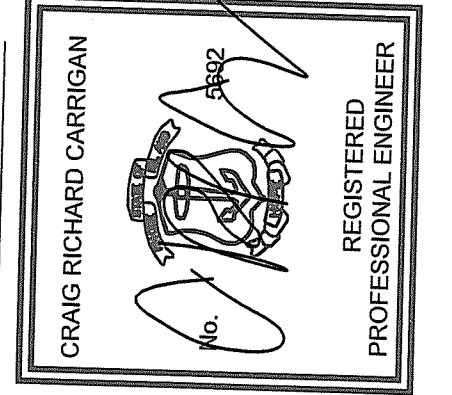




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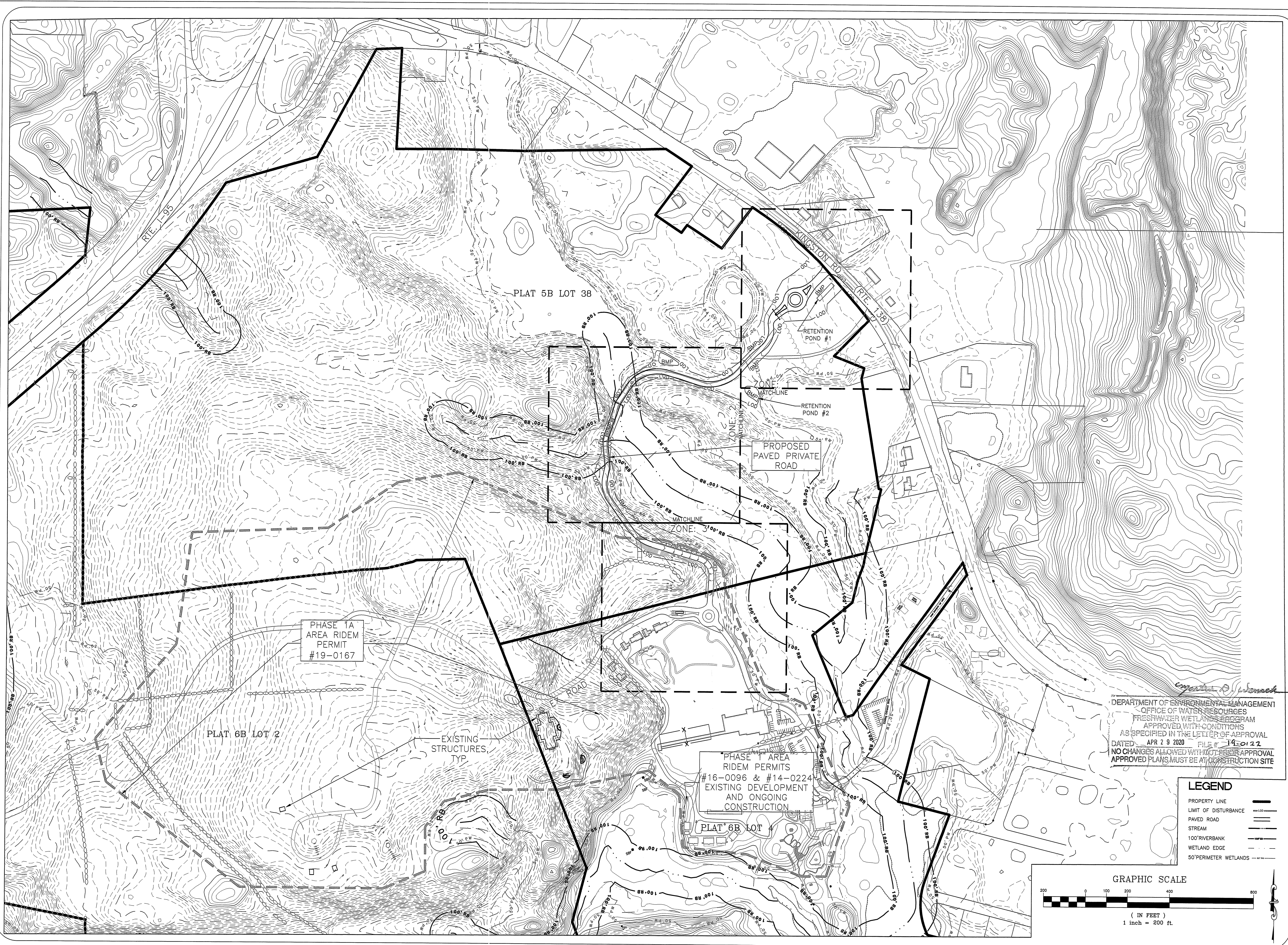


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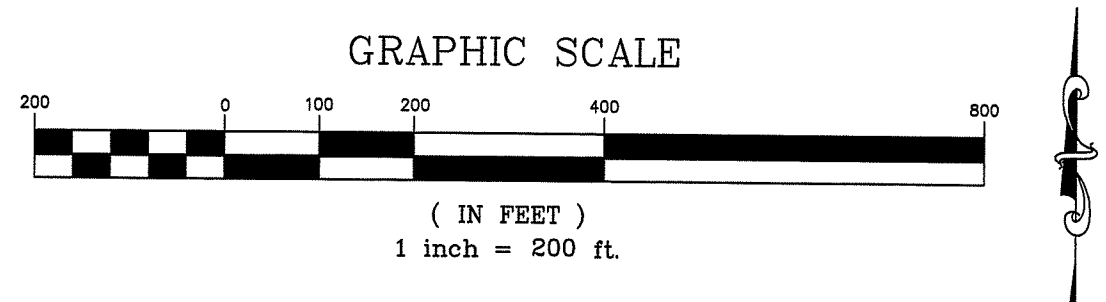
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JAN 24 2020



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- LEGEND**
- PROPERTY LINE
 - LIMIT OF DISTURBANCE
 - PAVED ROAD
 - STREAM
 - 100' RIVERBANK
 - WETLAND EDGE
 - 50' PERIMETER WETLANDS



RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
PROJECT SCOPE PLAN
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REVISIONS:

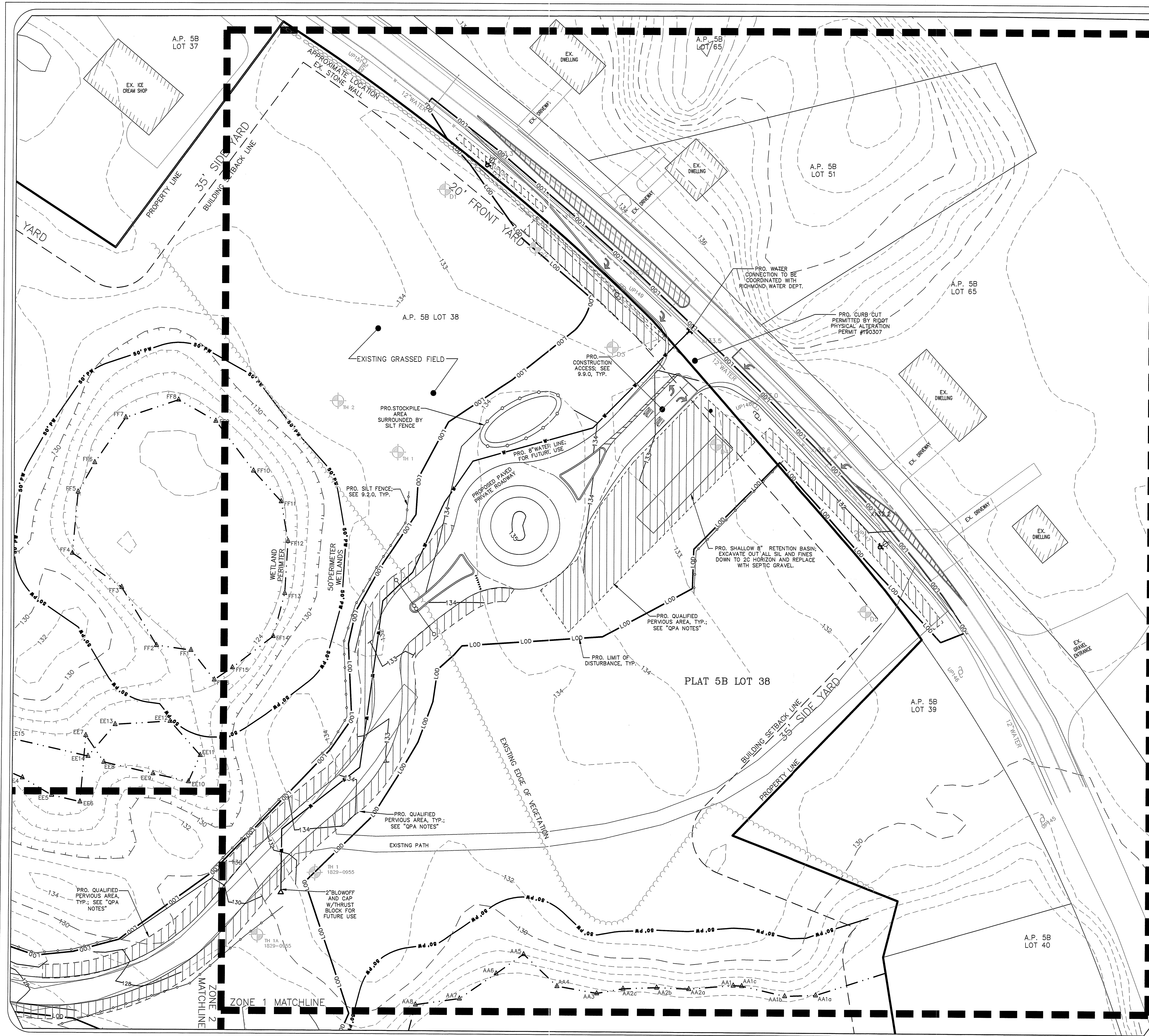
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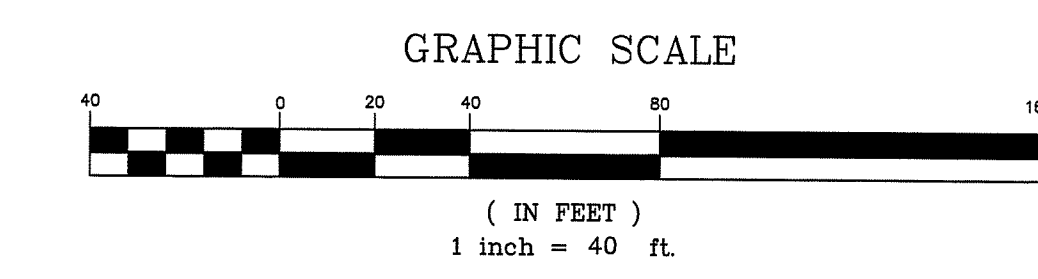
- CONSTRUCTION VEHICLES SHALL AVOID DRIVING OVER QPA AREAS TO THE MAXIMUM EXTENT POSSIBLE.
- IF QPA SOILS ARE COMPACTED, THEN THE SOIL MUST BE SUITABLE AMENDED, TILLED, AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE TO RESTORE INFILTRATION CAPACITY.
- THE SLOPE OF THE QPA MUST BE LESS THAN OR EQUAL TO 5.0%. THE QPA MUST BE INSPECTED YEARLY TO ENSURE NO BUILD-UP OF SEDIMENT. IF THERE IS ACCUMULATION OF SEDIMENT, THEN THE SEDIMENT SHALL BE REMOVED AND THE QPA SHALL BE RESTORED.

TEST HOLE DATA

TESTHOLES EVALUATED BY SOIL EVALUATOR,
DAVID KALEN, LICENSE D4052
DATE: 10/31/2018

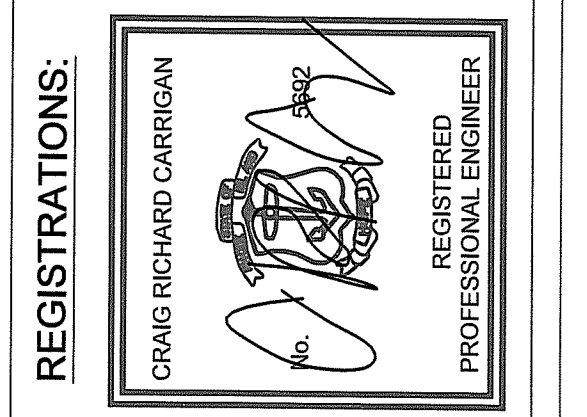
- | | |
|--|---|
| D1
Ap 0"-11" SL
Bw 11"-35" SIL
2C 35"-132" VG,COS
ESHGWT = 72" | D4
Ap 0"-13" SL
Bw 13"-32" SIL
C 32"-44" SIL
2C 44"-132" VG,COS
ESHGWT = 72" |
| D2
Ap 0"-12" SL
Bw 12"-55" SIL
2C 55"-132" G,COS
ESHGWT = 72" | D5
Ap 0"-11" SL
Bw 11"-22" SL
2C 22"-132" VG,COS
ESHGWT = 72" |
| D3
Ap 0"-11" SL
Bw 0"-28" SL
2C 28"-132" G,COS
ESHGWT = 72" | |

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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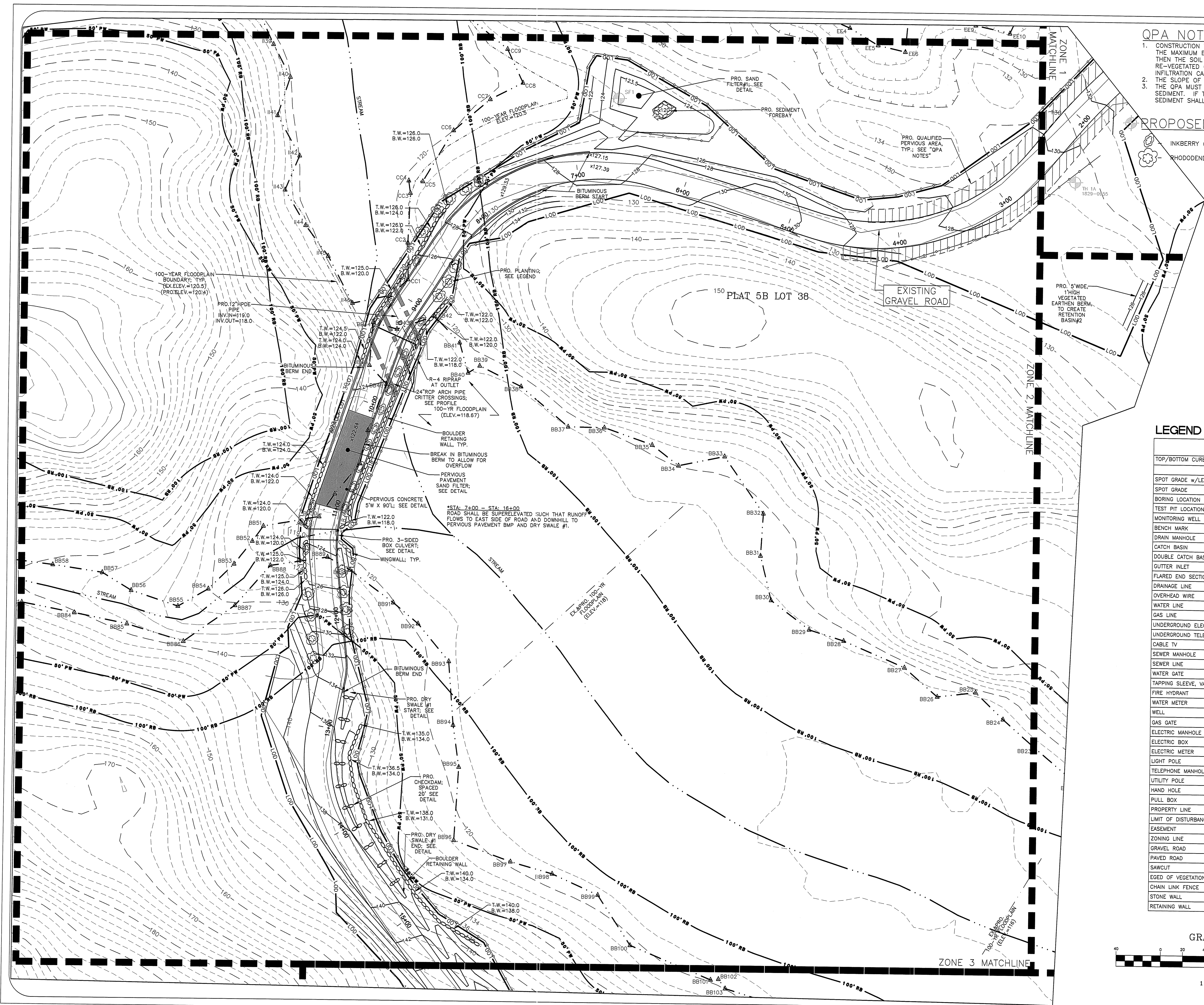
RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
ZONE 1 - GRADING & UTILITY PLAN
A.P. 5B, LOT 38 / A.P. 6B, LOT 2 / A.P. 6B, LOT 4
87 KINGSTOWN ROAD
RICHMOND, RHODE ISLAND
PREPARED FOR: THE PRESERVE AT BOULDER HILLS LLC.
SCALE: AS SHOWN DATE: 04/05/19 SHEET 4 OF 9

NO.	DATE	DESCRIPTION	BY
1.	12-06-19	RIDEM COMMENTS	DKM



CARRIGAN ENGINEERING, INC.
CIVIL AND ENVIRONMENTAL ENGINEERING
86 BROOK FARM ROAD SOUTH
WAKEFIELD, RI 02879
PHONE: (401) 789-6865

JAN 24 2020



QPA NOTES:

- CONSTRUCTION VEHICLES SHALL AVOID DRIVING OVER QPA AREAS TO THE MAXIMUM EXTENT POSSIBLE. IF QPA SOILS ARE COMPACTED, THEN THE SOIL MUST BE SUITABLE AMENDED, TILLED, AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE TO RESTORE INFILTRATION CAPACITY.
- THE SLOPE OF THE QPA MUST BE LESS THAN OR EQUAL TO 5.0%.
- THE QPA MUST BE INSPECTED YEARLY TO ENSURE NO BUILD-UP OF SEDIMENT. IF THERE IS ACCUMULATION OF SEDIMENT, THEN THE SEDIMENT SHALL BE REMOVED AND THE QPA SHALL BE RESTORED.

PROPOSED PLANTING LEGEND:

- INKBERRY (ILEX GLABRA)
- RHODODENDRON (RHODODENDRON MAXIMUM)

TEST HOLE DATA

TESTHOLE 1A EVALUATED BY SOIL EVALUATOR, DAVID KALEN, LICENSE D4052
DATE: 10/31/2018

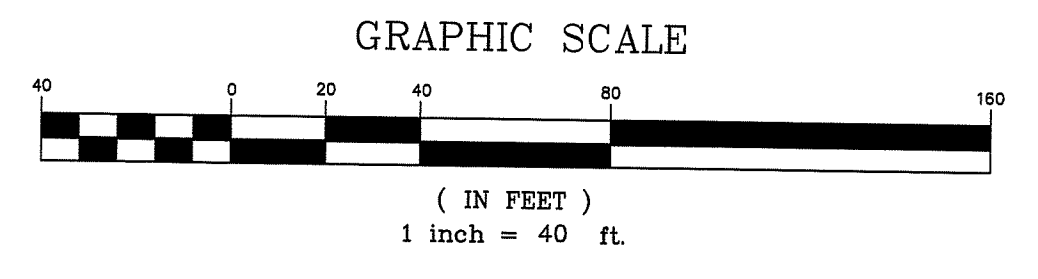
TESTHOLE SF1 EVALUATED BY SOIL EVALUATOR, DAVID MANONI, LICENSE D4086
DATE: 4/3/19

1A SF1
Ap 0"-8" SL 0"-24" G.FSL
Bw 8"-21" SIL
Bw2 21"-30" SIL ESHGWT = 18"
C 30"-44" SIL
2C 44"-106" S
ESHGWT = 70"

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LEGEND

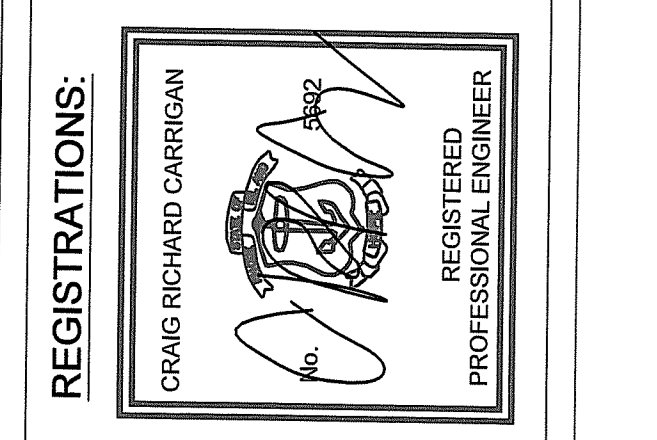
	EXIST	PROP
TOP/BOTTOM CURB ELEVATION	27.65 TC 27.15 BC X	27.65 TC 27.15 BC X
SPOT GRADE w/LEADER	21.25 X	21.25 X
SPOT GRADE	21.25 X	21.25 X
BORING LOCATION	⊕B-1	⊕B-1
TEST PIT LOCATION	⊕TP-1	⊕TP-1
MONITORING WELL	⊕MW-1	⊕MW-1
BENCH MARK	⊕	⊕
DRAIN MANHOLE	⊕DMH	⊕DMH
CATCH BASIN	⊕CB	⊕CB
DOUBLE CATCH BASIN	⊕DCB	⊕DCB
GUTTER INLET	⊕GI	⊕GI
FLARED END SECTION	FES DJ	FES DJ
DRAINAGE LINE	D	D
OVERHEAD WIRE	—OHW—	—OHW—
WATER LINE	—W—	—W—
GAS LINE	—G—	—G—
UNDERGROUND ELECTRIC	—UE—	—UE—
UNDERGROUND TELEPHONE	—TEL—	—TEL—
CABLE TV	—CATV—	—CATV—
SEWER MANHOLE	⊕SMH	⊕SMH
SEWER LINE	—S—	—S—
WATER GATE	⊕	⊕
TAPPING SLEEVE, VALVE, & BOX	⊕TSV	⊕TSV
FIRE HYDRANT	⊕	⊕
WATER METER	⊕WM	⊕WM
WELL	⊕	⊕
GAS GATE	⊕GG	⊕GG
ELECTRIC MANHOLE	⊕EMH	⊕EMH
ELECTRIC BOX	⊕EB	⊕EB
ELECTRIC METER	⊕EM	⊕EM
LIGHT POLE	⊕LP	⊕LP
TELEPHONE MANHOLE	⊕TMH	⊕TMH
UTILITY POLE	⊕UP	⊕UP
HAND HOLE	⊕HH	⊕HH
PULL BOX	⊕PB	⊕PB
PROPERTY LINE	—PL—	—PL—
LIMIT OF DISTURBANCE	—LOD—	—LOD—
EASEMENT	—E—	—E—
ZONING LINE	—ZL—	—ZL—
GRAVEL ROAD	—GR—	—GR—
PAVED ROAD	—PR—	—PR—
SAWCUT	—SC—	—SC—
EGED OF VEGETATION	—EV—	—EV—
CHAIN LINK FENCE	—CLF—	—CLF—
STONE WALL	—SW—	—SW—
RETAINING WALL	—RW—	—RW—



RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
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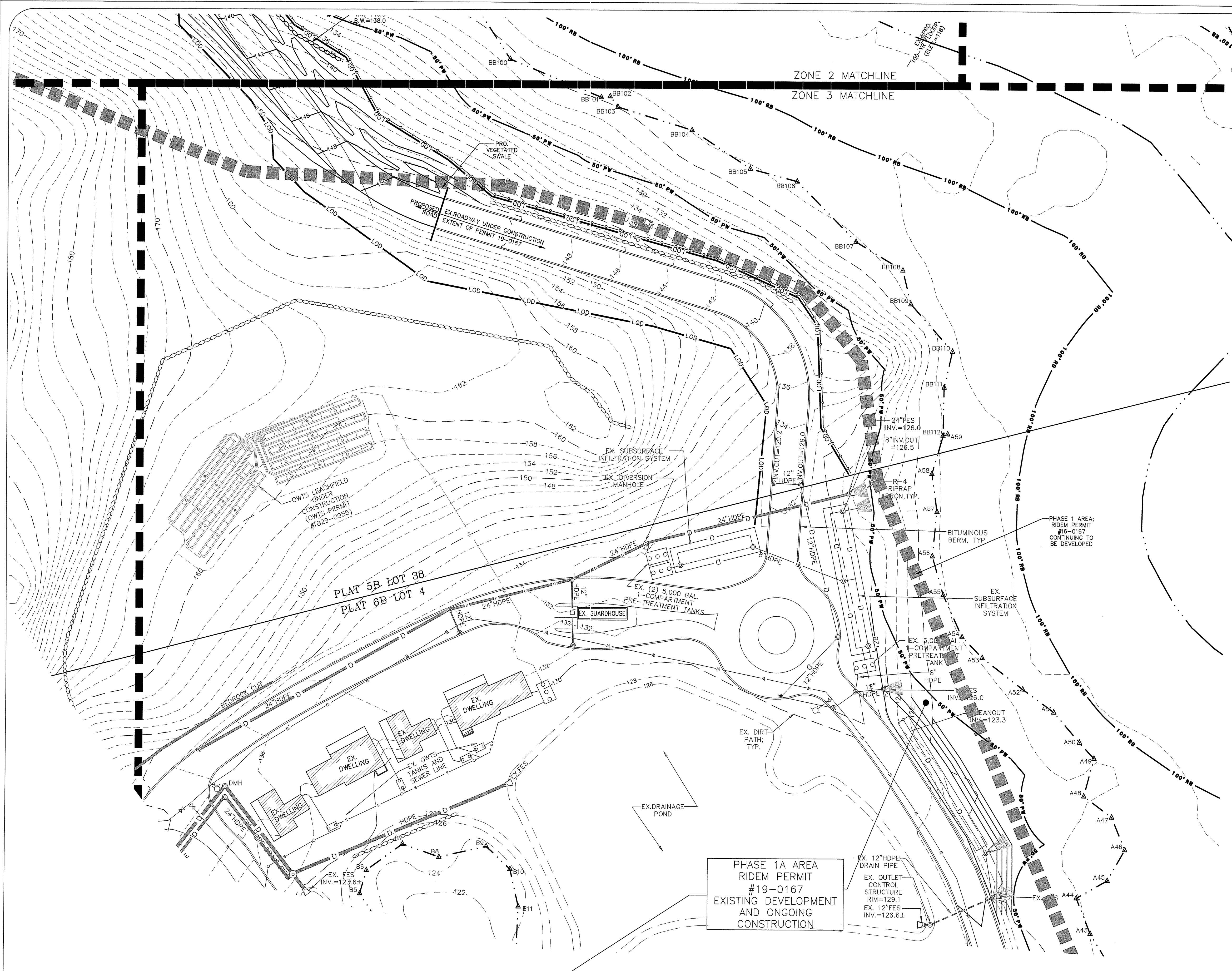
REVISIONS:

NO.	DATE	DESCRIPTION	BY
1.	12-06-19	RIDEM COMMENTS	DKM



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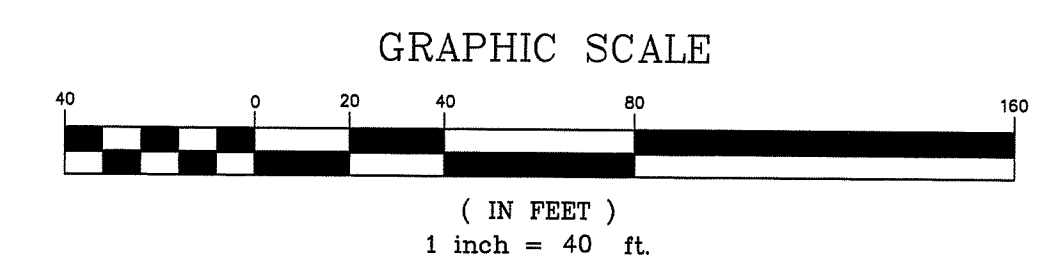
JAN 24 2020



LEGEND

	EXIST	PROP
TOP/BOTTOM CURB ELEVATION	27.85 IC 21.25 BC	27.85 IC 21.25 BC
SPOT GRADE w/LEADER	21.25	21.25
BORING LOCATION	BB-1	BB-1
TEST PIT LOCATION	TP-1	TP-1
MONITORING WELL	MW-1	MW-1
BENCH MARK	BM	BM
DRAIN MANHOLE	DMH	DMH
CATCH BASIN	CB	CB
DOUBLE CATCH BASIN	DCB	DCB
GUTTER INLET	GI	GI
FLARED END SECTION	FES	FES
DRAINAGE LINE	D	D
OVERHEAD WIRE	OW	OW
WATER LINE	W	W
GAS LINE	G	G
UNDERGROUND ELECTRIC	UEC	UEC
UNDERGROUND TELEPHONE	UT	UT
CABLE TV	CATV	CATV
SEWER MANHOLE	SMH	SMH
SEWER LINE	S	S
WATER GATE	WG	WG
TAPPING SLEEVE, VALVE, & BOX	TSV	TSV
FIRE HYDRANT	FH	FH
WATER METER	WM	WM
WELL	W	W
GAS GATE	GG	GG
ELECTRIC MANHOLE	EMH	EMH
ELECTRIC BOX	EB	EB
ELECTRIC METER	EM	EM
LIGHT POLE	LP	LP
TELEPHONE MANHOLE	TMH	TMH
UTILITY POLE	UP	UP
HAND HOLE	HH	HH
PULL BOX	PB	PB
PROPERTY LINE	PL	PL
LIMIT OF DISTURBANCE	LD	LD
EASEMENT	E	E
ZONING LINE	ZL	ZL
GRAVEL ROAD	GR	GR
PAVED ROAD	PR	PR
SAWCUT	SC	SC
EGED OF VEGETATION	EV	EV
CHAIN LINK FENCE	CLF	CLF
STONE WALL	SW	SW
RETAINING WALL	RW	RW

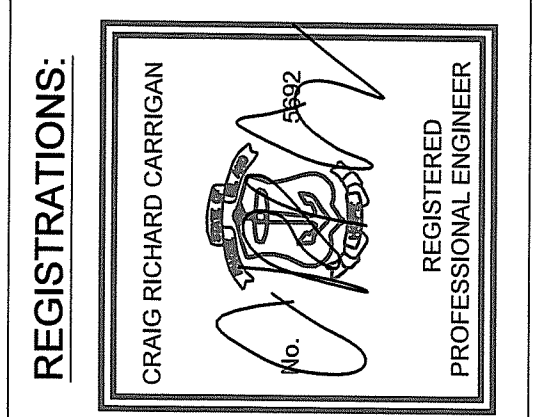
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REVISIONS:

NO.	DATE	DESCRIPTION	BY
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JAN 24 2020

GENERAL EROSION CONTROL NOTES:

- THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED AUG. 2013, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. THE 2013 STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION WEB PAGE. THESE SPECIFICATIONS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO.
- LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL CHECK AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES BOTH UNDERGROUND AND OVERHEAD. ANY DAMAGE TO EXISTING UTILITIES AS SHOWN OR NOT SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. COSTS OF SUCH DAMAGE SHALL BE BORNE BY THE CONTRACTOR. NO EXCAVATION SHALL BE DONE UNTIL ALL INVOLVED UTILITY COMPANIES ARE NOTIFIED 48-HOURS IN ADVANCE. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY DIG-SAFE (1-800-344-7233) A MINIMUM OF 48 WORKING HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO THE START OF ANY EXCAVATION AND/OR BLASTING WORK. THE NAME OF THE COMPANY PERFORMING THE EXCAVATION AND/OR BLASTING WORK MUST BE SUPPLIED TO DIG-SAFE, IF IT IS DIFFERENT FROM THE CALLER.
- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY, BUT NOT LIMITED TO, THE STATE OF RHODE ISLAND, THE FEDERAL GOVERNMENT, LOCAL (TOWN/CITY) GOVERNMENT AND ALL INDIVIDUAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROLS. ALL MATERIAL FOR FILL SHALL BE CLEAN AND FREE OF MATTER WHICH COULD POLLUTE ANY DOWN STREAM WATERCOURSE.
- FILL MATERIAL SHALL BE COMPACTED IN ONE FOOT (MAXIMUM) LIFTS TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-1557 (MODIFIED PROCTOR TEST).
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL AREAS NOT TO BE DEVELOPED THAT ARE COMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY TILLING THE TOP 12" OF SOIL.

EROSION CONTROL AND SOIL STABILIZATION PROGRAM:

- ALL STRAW BALES OR TEMPORARY PROTECTION SHALL REMAIN IN-PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
- THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH RHODE ISLAND STANDARD SPECIFICATION M.20.01, AS AMENDED.
- THE SEED MIX SHALL BE INOCULATED WITHIN 24-HOURS BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
- THE DESIGN MIX UTILIZED IN ALL DISTURBED AREAS TO BE SEEDED SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	% BY WEIGHT	SEEDING DATE
OREGON RED FESCUE	70	APRIL 1 - JUNE 15
ASTORIA BENTGRASS	5	AUGUST 15 - OCT.
BIRDFOOT TREFFOIL	15	
PERENNIAL RYEGRASS	10	
- APPLICATION RATE 100 LBS/ACRE
LIMING AND FERTILIZING AS REQUIRED TO COMPLIMENT OR UPGRADE EXISTING CONDITIONS.
- ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR SHALL BE REPAIRED AND/OR RESEDED.
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST THROUGH OCTOBER 15TH.
- STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN FIFTEEN (15) DAYS OF FINAL GRADING. STOCKPILES OF TOPSOIL AND EARTH MATERIALS SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 AND STOCKPILE SHALL ALSO BE SEEDED AND/OR STABILIZED. THE STOCKPILES SHALL BE SURROUNDED BY STACKED STRAW BALES AND/OR SILT FENCE.
- ON SLOPES STEEPER THAN 30% MULCH APPLICATIONS SHALL BE TACKED DOWN BY "CRIMPING" OR "TRACKING".
- TREES TO BE RETAINED SHALL BE FENCED OR ROPED OFF TO PROTECT THEM FROM CONSTRUCTION EQUIPMENT.
- ALL PROPOSED PLANTINGS MUST BE ACCOMPLISHED AS EARLY AS POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION, AND AT LEAST PRIOR TO ANY ON-SITE OCCUPANCY.
- PLANTINGS SHALL BE MAINTAINED BY THE PROPERTY OWNER TO ENSURE SURVIVAL.
- SHOULD ANY OR ALL OF THE PROPOSED PLANTS FAIL TO SURVIVE AT LEAST ONE (1) FULL GROWING SEASON FROM THE TIME THEY HAVE BEEN PLANTED, THE OWNER SHALL BE FULLY RESPONSIBLE FOR REPLACING AND MAINTAINING THE SAME PLANT SPECIES FOR ONE (1) ADDITIONAL GROWING SEASON.
- ALL DISTURBED AREAS MUST BE SEEDED OR PLANTED WITHIN THE CONSTRUCTION SEASON.
- TEMPORARY SEEDING MUST BE DONE WITHIN ONE (1) MONTH AFTER DISTURBANCE.
- ALL DISTURBED AREAS MUST BE PERMANENTLY SEEDED OR PLANTED BEFORE OCTOBER 1ST, IF NOT THEY MUST BE TEMPORARILY SEEDED.
- SLOPES CONSTRUCTED AT, OR STEEPER THAN, 15% SHALL HAVE TEMPORARY EROSION CONTROL MATING UTILIZED AS A SUPPORTIVE METHOD IN ADDITION TO THE METHODS DESCRIBED ABOVE UNLESS IN THE CASE WHERE PERMANENT TURF REINFORCEMENT MATS ARE INSTALLED IMMEDIATELY UPON CONSTRUCTION OF THE SLOPE. IN NO CASE SHALL STEEP SLOPES BE LEFT UNPROTECTED.
- ALL PROPOSED INLETS AND OUTLETS SHALL BE PROTECTED WITH TURF REINFORCEMENT AS PROPOSED ON THE PLANS AND/OR STRAW BALE INLET AND OUTLET PROTECTION DEVICES. SEE DETAILS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND PROCEDURES SET FORTH IN THE TOWN ZONING ORDINANCES; RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, AMENDED MARCH 2015 AS PREPARED BY THE RIDEM AND CRMC; AND RHODE ISLAND EROSION AND SEDIMENT CONTROL HANDBOOK AS PREPARED BY RHODE ISLAND STATE CONSERVATION COMMITTEE, REVISED 2014, (AS REVISED).

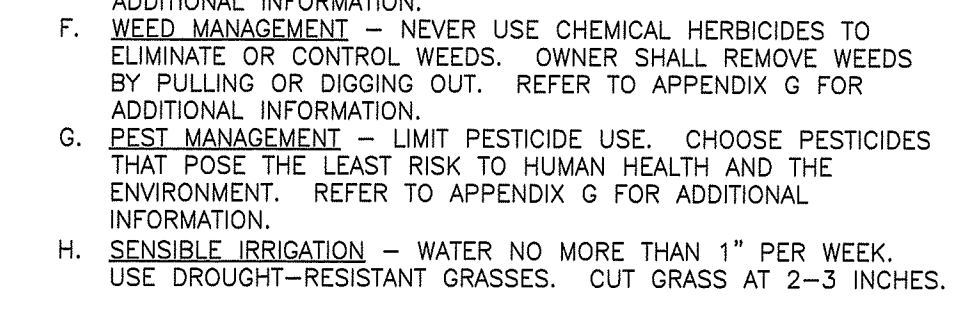
- EXTREME CARE SHALL BE EXERCISED AS TO PREVENT ANY MATERIALS FROM ENTERING THE ROADWAYS, ROADWAY DRAINAGE SYSTEMS, ADJACENT PROPERTY, WETLANDS, PERIMETER WETLANDS, AND RIVERBANK WETLANDS.
- STAKED STRAW BALES AND/OR SILT FENCE SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND AS REQUIRED TO PREVENT SEDIMENTATION INTO PERIMETER AND RIVERBANK WETLANDS.
- DENUDED SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR MORE THAN 2 WEEKS OF TIME OR FOR THE INACTIVE WINTER SEASON.
- ALL DISTURBED SOILS EXPOSED PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR SHALL BE SEEDED OR PROTECTED BY THAT DATE. ANY SUCH AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION, AS DETERMINED BY THE RESIDENT ENGINEER OR ENVIRONMENTAL INSPECTOR, BY NOVEMBER 15 OF ANY CALENDAR YEAR, MUST BE STABILIZED THROUGH THE USE OF EROSION CONTROL MATTING OR STRAW MULCH, IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK OR AS DIRECTED BY THE RESIDENT ENGINEER OR INSPECTOR. IF WORK CONTINUES WITHIN ANY OF THESE AREAS DURING THE PERIOD FROM OCTOBER 15 THROUGH APRIL 15, CARE MUST BE TAKEN TO ENSURE THAT ONLY THE AREA REQUIRED FOR THAT DAY'S WORK IS EXPOSED, AND ALL ERODIBLE SOIL MUST BE RESTABILIZED WITHIN 5 WORKING DAYS. ANY WORK TO CORRECT PROBLEMS RESULTING FROM FAILURE TO COMPLY WITH THIS PROVISION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR; THERE WILL BE NO SEPARATE PAYMENT FOR THIS PROVISION. IT SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OPERATIONS. STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN 2 WEEKS OF FINAL GRADING.
- PREPARE TEMPORARY SEEDING AREA, PROVIDE AND PLANT SEED IN ACCORDANCE WITH "RHODE ISLAND EROSION AND SEDIMENT CONTROL HANDBOOK" AS PREPARED BY THE RHODE ISLAND STATE CONSERVATION COMMITTEE, REVISED 2014, (AS REVISED).

- SEED MIX:**
ANNUAL RYE GRASS 1.5 LBS/1,000 SQ. FT.
- TEMPORARY TREATMENTS TO STABILIZE EXPOSED SOILS SHALL CONSIST OF STRAW OR FIBER MULCH OR PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK WHEN SOILS ARE EXPOSED FOR TWO WEEKS OR MORE OR AS ORDERED BY THE RESIDENT ENGINEER OR OWNER AT NO ADDITIONAL COST.
 - STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 4,000 LBS/ACRE.
 - ALL NEW STRAW BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
 - DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
 - ADDITIONAL STRAW BALES/SILT FENCE OR OTHER TREATMENTS SHALL BE PROVIDED AS DIRECTED BY ENGINEER, RIDEM OR LOCAL REPRESENTATIVES AT NO ADDITIONAL COST.
 - THE CONTRACTOR SHALL INSPECT THE SOIL EROSION CONTROL DEVICES AFTER EVERY RAIN STORM EVENT AND EVERY 7 DAYS (WHICH EVER COMES FIRST). ANY SOIL MIGRATION PAST THE DEVICES SHALL BE REMOVED AND THE SOIL EROSION CONTROL DEVICES SHALL BE RE-ESTABLISHED TO PREVENT SOIL EROSION. ALL ACCUMULATED SEDIMENT IN FRONT OF THE DEVICES SHALL BE REMOVED AFTER EVERY RAIN STORM EVENT.
 - ALL DISTURBED SOIL AREAS SHALL BE PROTECTED AGAINST SOIL EROSION BY PLACEMENT OF STRAW BALES AND/OR SILT FENCE ON THE DOWN GRADIENT SIDE OF THE DISTURBED AREA(S). SHOULD THE VOLUME AND/OR RATE OF STORMWATER RUNOFF BE TOO GREAT FOR A SINGLE DEVICE, THEN MULTIPLE DEVICES ARE REQUIRED SUCH AS SILT FENCE BACKED-UP WITH STRAW BALES. THESE ADDITIONAL DEVICES ARE NOT SHOWN ON THE PLAN BUT SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - AT THE END OF THE PROJECT CONSTRUCTION ALL SEDIMENT IN MANHOLE SUMPS AND WITHIN ANY DRAINAGE STRUCTURE OR BMP SHALL BE REMOVED.

SEQUENCE AND STAGING OF LAND DISTURBING ACTIVITIES:

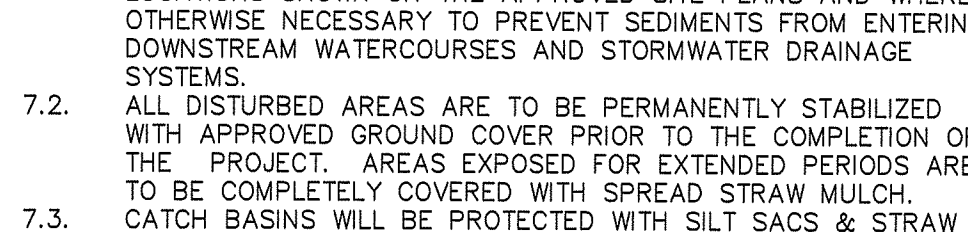
- CONTRACTOR TO REFER TO RIDEM RIDES SOIL EROSION AND SEDIMENT CONTROL (SESS) REPORT AS WELL AS THESE DRAWINGS.
- INSTALL SEDIMENTATION PROTECTION DEVICES IN EXISTING CATCHBASINS AND INLET STRUCTURES.
- SURVEY AND STAKE LIMIT OF DISTURBANCE FOR PLACEMENT OF SEDIMENTATION CONTROL DEVICES.
- PLACE PERIMETER SEDIMENTATION CONTROL DEVICES, SEE DETAILS. IN NO CASE SHALL THE LIMIT OF WORK EXTEND BEYOND THE SEDIMENTATION CONTROL DEVICES.
- CONSTRUCT CONSTRUCTION ENTRANCE DEVICES LOCATED ALONG ROUTE 138, SEE DETAIL.
- CLEAR AND GRUB AREA WITHIN THE LIMIT OF DISTURBANCE.
- CONSTRUCT TEMPORARY SEDIMENT TRAPS.
- CLEAR AND ROUGH GRADE ROADS.
 - INSTALL AND COMPACT GRAVEL BASE COURSE FOR ROADS.
 - CONSTRUCT UTILITIES (WATER, DRAINAGE, ETC...)
 - POUR BITUMINOUS CONCRETE BASE COURSE.
- FINISH REMAINDER OF CONSTRUCTION AND PAVE BITUMINOUS CONCRETE SURFACE COURSE.
- REMOVE TEMPORARY SOIL EROSION DEVICES.
- CLEAN OUT ALL DRAINAGE BASINS AND STRUCTURES AS NEEDED. REMOVE AND DISPOSE ALL ACCUMULATED SEDIMENT IN A SUITABLE AREA.

- REFERENCE IS MADE TO APPENDIX G "POLLUTION PREVENTION AND SOURCE CONTROLS" OF THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, AMENDED 2015. THIS DOCUMENT SHALL BE REFERENCED WHEN IMPLEMENTING THE POLLUTION PREVENTION TECHNIQUES. A BRIEF SUMMARY OF THE TECHNIQUES IS PROVIDED BELOW. REFER TO THE ABOVE REFERENCE FOR ALL TECHNIQUES TO BE IMPLEMENTED.
- HAZARDOUS MATERIALS CONTAINMENT:
 - OWNER TO PROVIDE TRASH CONTAINER. CONTAINER TO HAVE A COVER TO PREVENT TRASH FROM BLOWING OUT.
 - SWEEP STREET/PARKING AREA ANNUALLY.
- CONTRACTOR TO STORE ALL HAZARDOUS MATERIALS INSIDE STORAGE LOCKERS OR OTHER APPROVED METHODS WHICH HAVE SECONDARY CONTAINMENT SYSTEMS.
 - SECONDARY CONTAINMENT MUST BE INCLUDED WHEREVER SPILLS MIGHT OCCUR (E.G. FUELING AND HAZARDOUS MATERIAL TRANSFER AND LOADING AREAS).
- ROADS AND PARKING AREA MANAGEMENT:
 - SWEEP STREET/PARKING AREA ANNUALLY.
 - USE DEICING CHEMICALS AND SAND JUDICIOUSLY SINCE THEY CAUSE WATER QUALITY PROBLEMS. PROVIDE AND SPREAD IN ACCORDANCE WITH APPENDIX G RECOMMENDATIONS.
 - PLOW SNOW AND STORE ACCUMULATED SNOW PILES AWAY FROM SAND FILTER SYSTEM AND SEDIMENT FOREBAY.
 - DEBRIS SHOULD BE CLEARED FROM THE SITE PRIOR USING THE SITE FOR SNOW DISPOSAL.
 - DEBRIS SHOULD BE CLEARED FROM THE SITE AND PROPERLY DISPOSED OF AT THE END OF THE SNOW SEASON.
 - ONLY USE ASPHALT BASE SEALANTS WHEN SEALING THE PAVEMENTS. DO NOT USE COAL-TAR BASED SEALANTS SINCE THESE ARE MORE TOXIC.
- SEPTIC SYSTEMS:
 - NO SEPTIC SYSTEMS PROPOSED.
- LAWN, GARDEN, AND LANDSCAPE MANAGEMENT:
 - LAWN CONVERSION - REDUCE THE AMOUNT OF LAWN BY REPLANTING LAWN WITH GARDEN BEDS CONTAINING FLOWERS/SHRUBS. LAWNS REQUIRE MORE MAINTENANCE THAN FLOWER BEDS.
 - SOIL BUILDING - MAINTAIN A HEALTHY LAWN BY TESTING SOIL FOR PH, FERTILITY, COMPACTION, TEXTURE, AND EARTH WORM CONTENT. GRASS SELECTION: SELECT DROUGHT TOLERANT GRASS SPECIES. REFER TO APPENDIX G FOR ADDITIONAL INFORMATION.
 - MOWING AND THATCH MANAGEMENT - KEEP GRASS HEIGHT HIGH SUCH AS 2 TO 3 INCHES IN HEIGHT. THIS WILL REDUCE WEED GROWTH.
 - FERTILIZATION - MINIMIZE FERTILIZATION. FERTILIZE NO MORE THAN TWICE A YEAR. APPLY CAREFULLY SO FERTILIZER DOES NOT SPREAD ONTO IMPERVIOUS SURFACES. REFRAIN FROM THE USE OF PHOSPHATE BASED FERTILIZERS. REFER TO APPENDIX G FOR ADDITIONAL INFORMATION.
 - WEED MANAGEMENT - NEVER USE CHEMICAL HERBICIDES TO ELIMINATE OR CONTROL WEEDS. OWNER SHALL REMOVE WEEDS BY PULLING OR DIGGING OUT. REFER TO APPENDIX G FOR ADDITIONAL INFORMATION.
 - PEST MANAGEMENT - LIMIT PESTICIDE USE. CHOOSE PESTICIDES THAT POSE THE LEAST RISK TO HUMAN HEALTH AND THE ENVIRONMENT. REFER TO APPENDIX G FOR ADDITIONAL INFORMATION.
 - SENSIBLE IRRIGATION - WATER NO MORE THAN 1" PER WEEK. USE DROUGHT-RESISTANT GRASSES. CUT GRASS AT 2-3 INCHES.

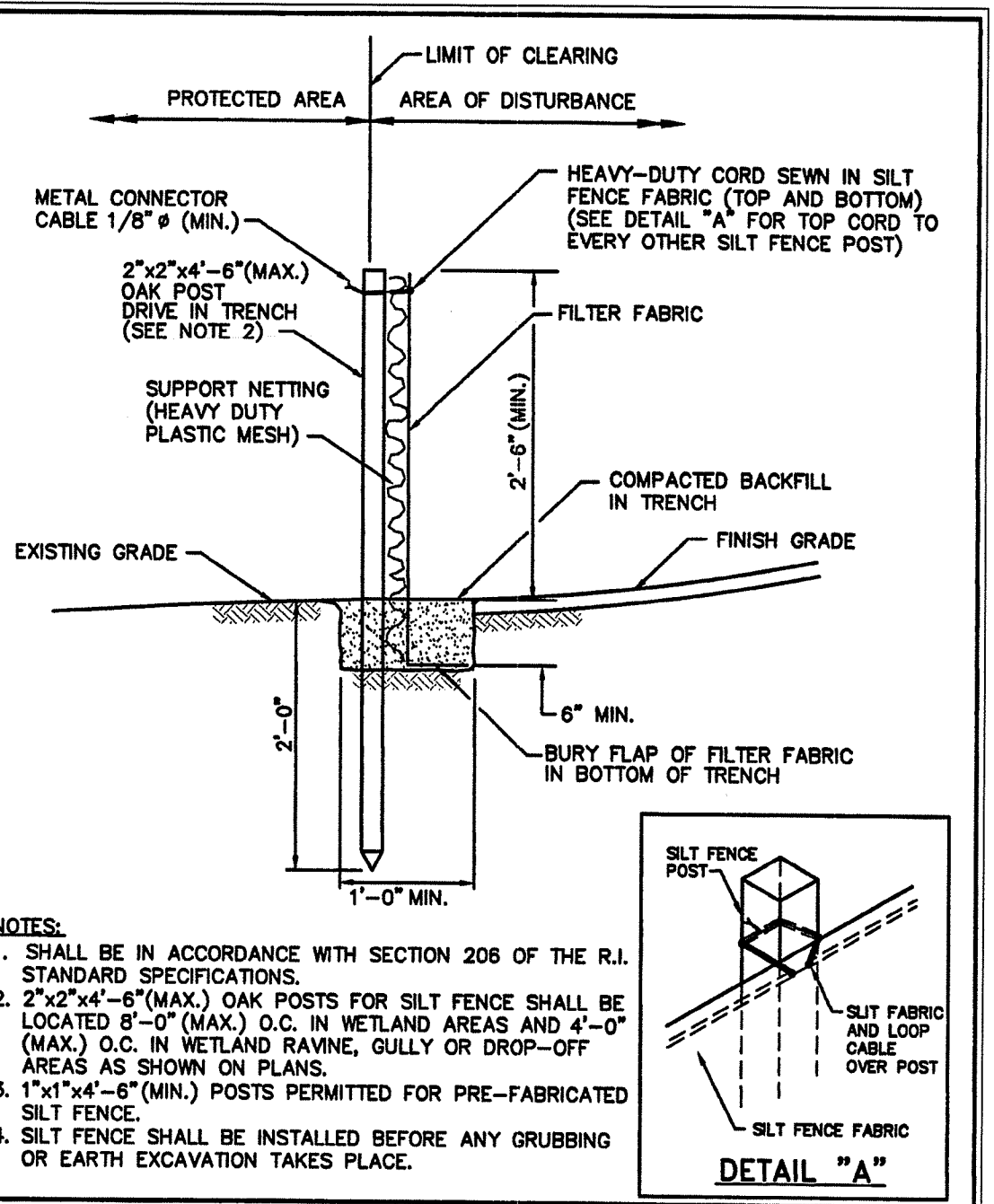
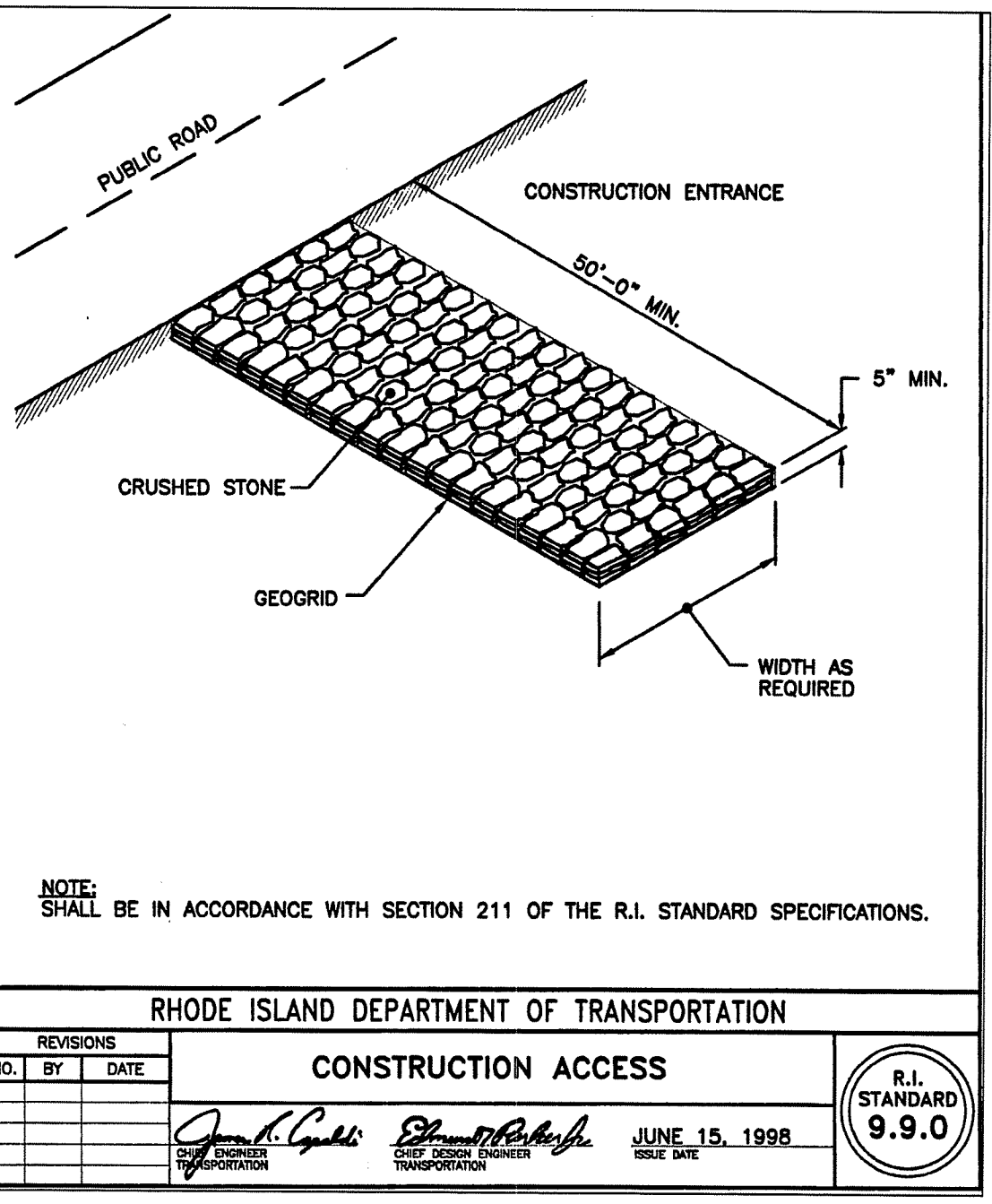


SEDIMENTATION CONTROL PROGRAM:

- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIALS FROM ENTERING DOWNSTREAM WATERCOURSES AND STORMWATER DRAINAGE SYSTEMS.
- DURING CONSTRUCTION, THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUN-OFF FLOW DURING STORMS.
- SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED CLOSELY AND MAINTAINED PROMPTLY AFTER EACH RAINFALL.
- CARE SHALL BE TAKEN SO AS NOT TO PLACE "REMOVED SEDIMENTS" WITHIN THE PATH OF EXISTING, NEWLY CREATED (BOTH TEMPORARY AND PERMANENT) OR PROPOSED WATERCOURSES OR THOSE AREAS SUBJECTED TO STORMWATER FLOWAGE.
- ADDITIONAL STRAW BALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
- SEDIMENTATION TRAPS SHALL BE PROVIDED AT ALL DRAINAGE STRUCTURES DURING CONSTRUCTION (SILT SACS, STRAW BALES, TEMPORARY DITCHES, ETC).
- EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE SITE PRIOR TO THE START OF CONSTRUCTION AND BE PROPERLY MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED INCLUDING:
 - THE INSTALLATION OF AN EROSION CONTROL FENCE IN ALL LOCATIONS SHOWN ON THE APPROVED SITE PLANS AND WHERE OTHERWISE NECESSARY TO PREVENT MATERIALS FROM ENTERING DOWNSTREAM WATERCOURSES AND STORMWATER DRAINAGE SYSTEMS.
 - ALL DISTURBED AREAS ARE TO BE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER PRIOR TO THE COMPLETION OF THE PROJECT. AREAS EXPOSED DURING PERIODS ARE TO BE COMPLETELY COVERED WITH SPREAD STRAW MULCH. CATCH BASINS WILL BE PROTECTED WITH SILT SACS & STRAW BALE FILTERS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. SUMPS ARE TO BE CLEANED IMMEDIATELY FOLLOWING INSTALLATION OF PERMANENT PAVEMENT.
 - OUTFALLS ARE TO BE PROTECTED BY STRAW BALE FILTERS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER.
 - ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
- THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED.
- UPON COMPLETION OF CONSTRUCTION OF SITE IMPROVEMENTS AND THE STORMWATER DRAINAGE SYSTEM, ALL CATCH BASINS AND STORM DRAIN PIPING SHALL BE CLEANED OF SEDIMENT, SEDIMENT FOREBAY AND SAND FILTERS SHALL BE CLEANED OF SEDIMENT TO THE DESIGN GRADES INDICATED.
- AT NO TIME DURING CONSTRUCTION SHALL THE SUBGRADE OF THE SITE BE SUCH THAT SURFACE RUNOFF WILL BE PERMITTED TO DIRECTLY ENTER ANY DRAINAGE STRUCTURE. A TEMPORARY DEPRESSED AREA AROUND THE STRUCTURE SHALL BE INCORPORATED AS A SEDIMENTATION TRAP. THE MOUTH OF THE TRAP SHALL BE LINED WITH STRAW BALES AROUND THE COMPLETE PERIMETER. DURING ALL PRELIMINARY STAGES, THE TOP OF THE STRUCTURE SHALL ALWAYS BE HIGHER THAN THE SUBGRADE.
- STRAW BALE EROSION CHECKS SHALL BE MAINTAINED AROUND ALL CATCH BASINS UNTIL ALL UPGRADIENT DISTURBED AREAS ARE STABILIZED BY PAVEMENT OR VEGETATION.
- ALL COMPONENTS OF THE DRAINAGE SYSTEM MUST BE CLEANED OF SEDIMENT BY THE APPLICANT OR HIS REPRESENTATIVE IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED.
- INSPECT TEMPORARY DIVERSIONS AND THEIR COMPONENTS ONCE A WEEK AND AFTER EVERY RAINFALL. DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHOULD BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- CHECK DAMS SHALL BE INSTALLED EVERY 300 FEET FOR SLOPES OF 1% OR LESS, EVERY 200 FEET FOR SLOPES OF 2%, EVERY 150 FEET FOR SLOPES OF 3% TO 5%, AND EVERY 100 FEET FOR SLOPES OF 5% OR GREATER.
 - CHECK DAMS SHALL BE INSTALLED EVERY 20 FEET ALONG THE PROPOSED SWALE.
 - SEDIMENTS SHOULD BE REMOVED FROM THE CHECK DAM WHEN IT REACHES ONE-HALF THE DAM HEIGHT.



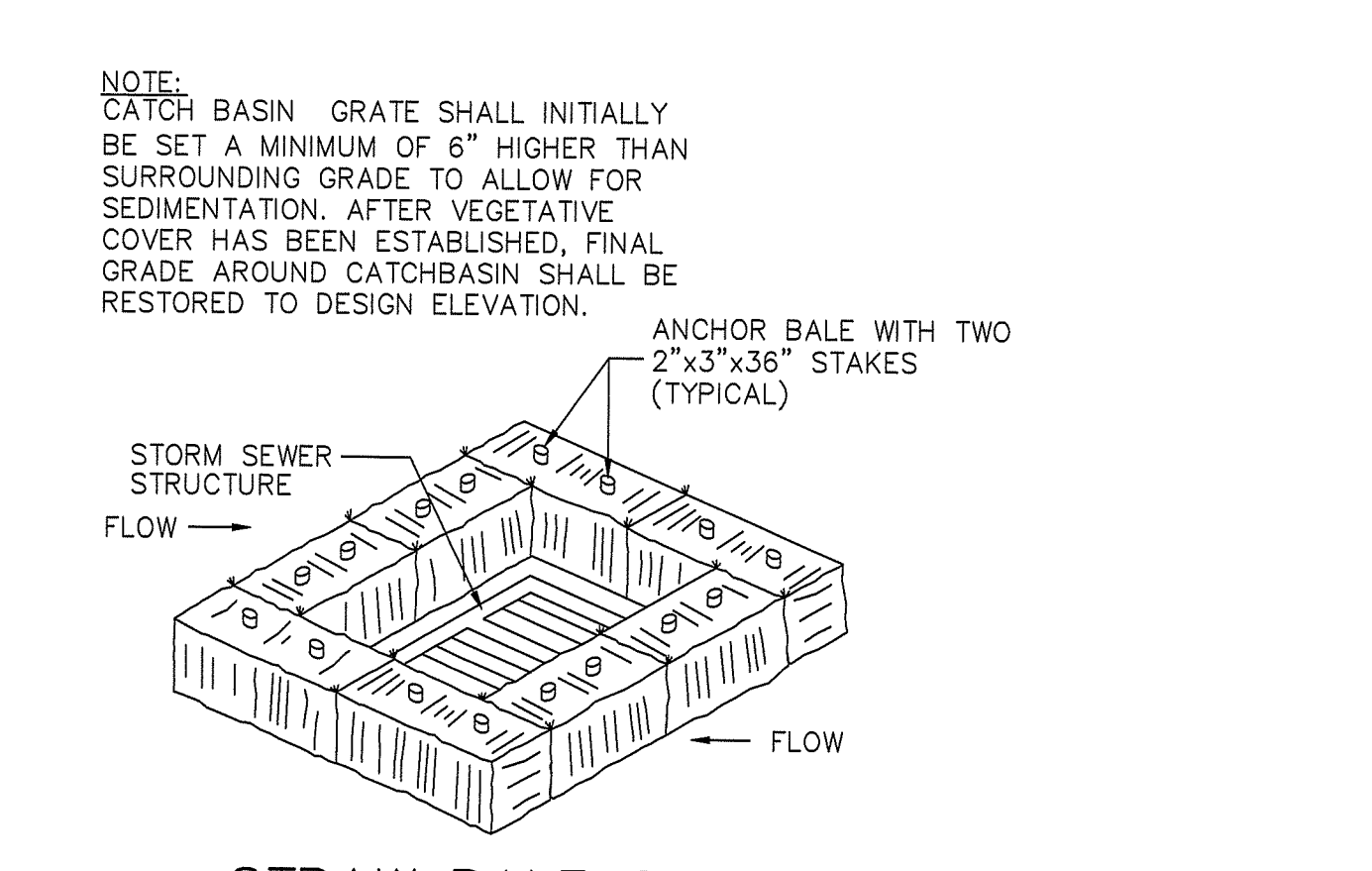
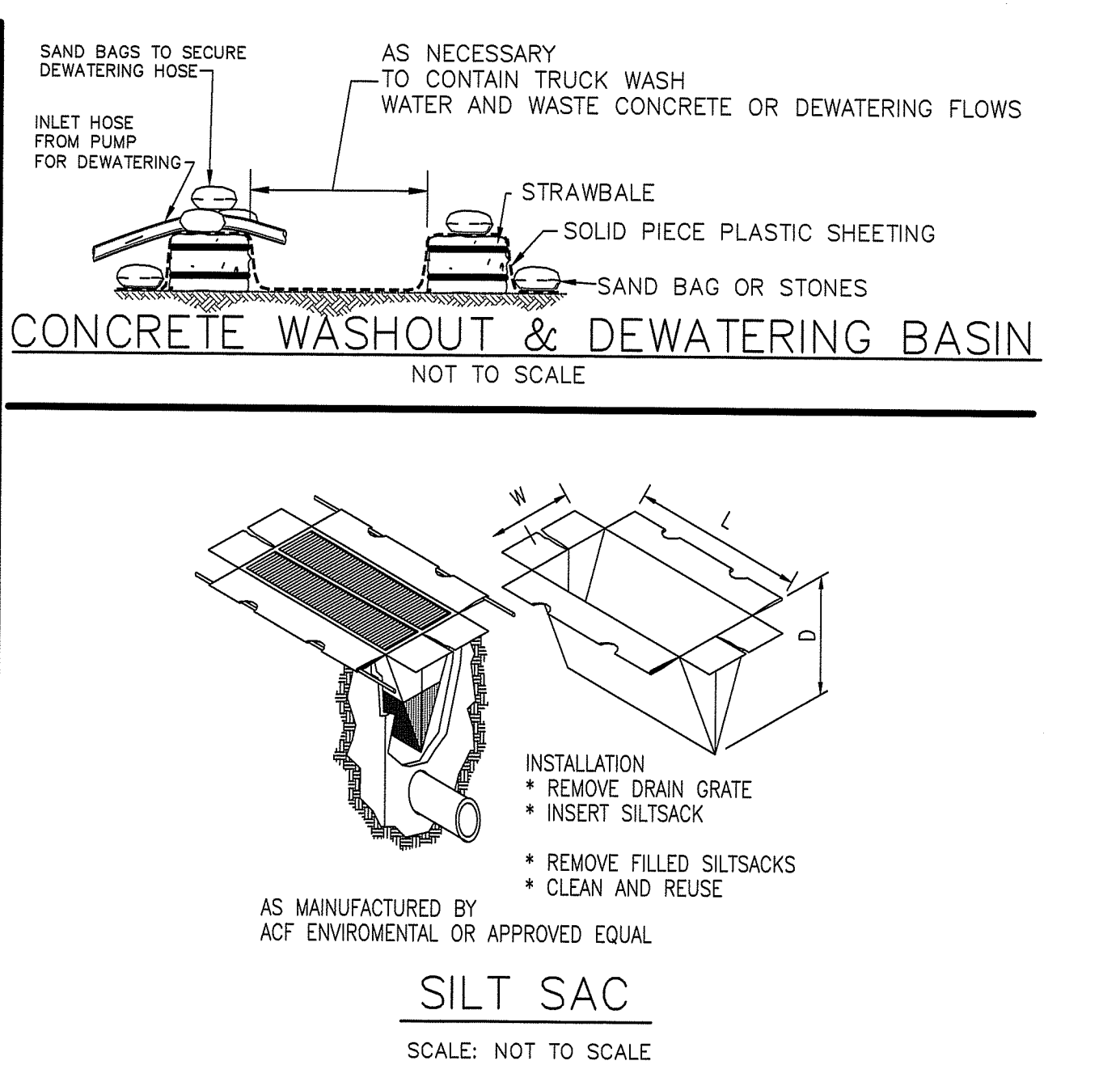
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SILT FENCE DETAIL
 REVISIONS: NO. BY DATE
 JUNE 15, 1998 R.I. STANDARD 9.2.0



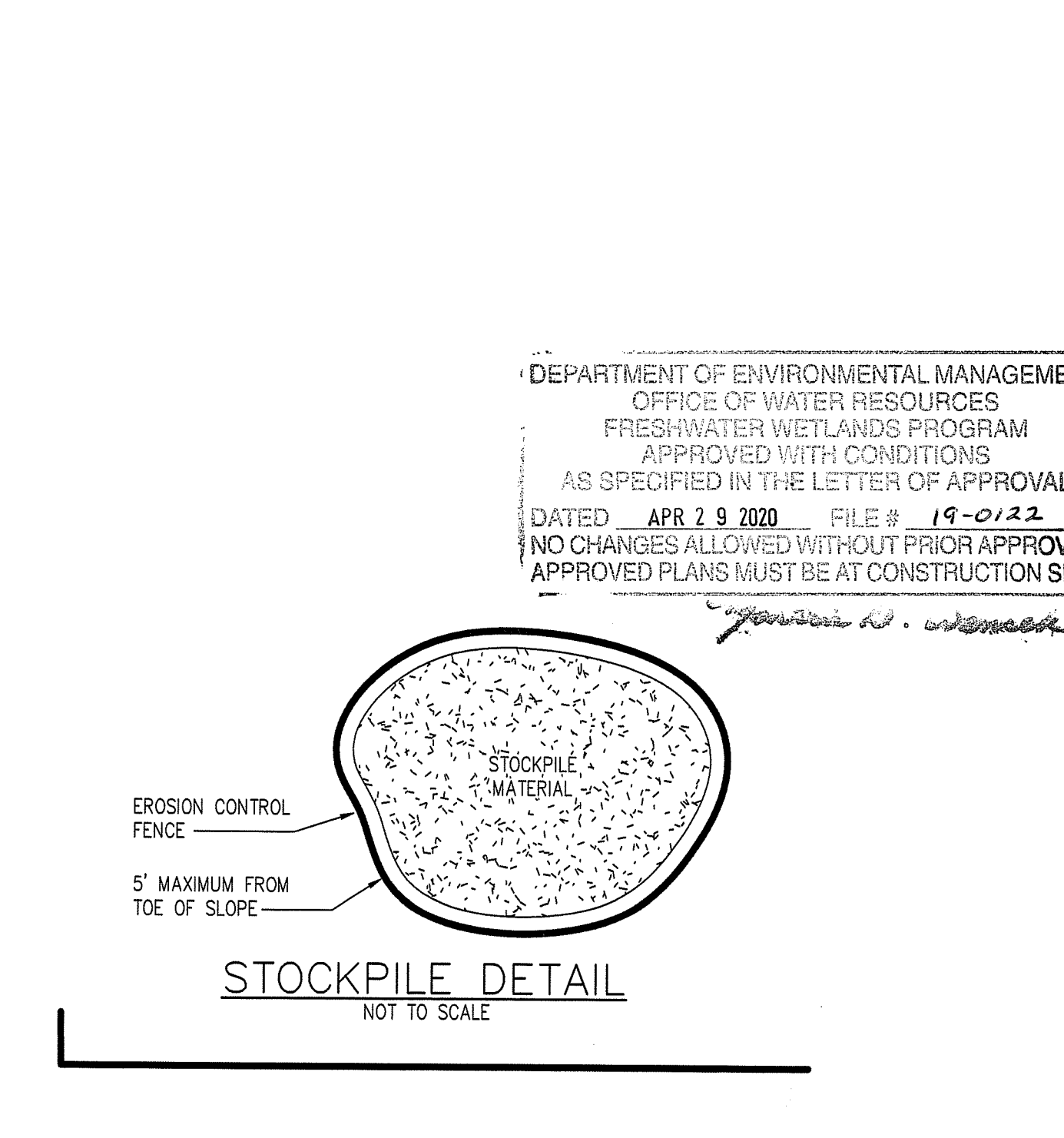
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
STRAW BALE CATCH BASIN PROTECTION
 REVISIONS: NO. BY DATE
 JUNE 15, 1998 R.I. STANDARD 9.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
STOCKPILE DETAIL
 REVISIONS: NO. BY DATE
 JUNE 15, 1998 R.I. STANDARD 9.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SILT SAC
 REVISIONS: NO. BY DATE
 JUNE 15, 1998 R.I. STANDARD 9.2.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
STOCKPILE DETAIL
 REVISIONS: NO. BY DATE
 JUNE 15, 1998 R.I. STANDARD 9.2.0

**RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
 DETAIL SHEET - 1**
 A.P. 5B, LOT 38 / A.P. 6B, LOT 2 / A.P. 6B, LOT 4
 87 KINGSTOWN ROAD
 RICHMOND, RHODE ISLAND
 PREPARED FOR: THE PRESERVE AT BOULDER HILLS LLC.
 SCALE: AS SHOWN DATE: 04/05/19 SHEET 8 OF 9

NO.	DATE	DESCRIPTION	BY
1.	12-20-19	RIDEM COMMENTS	DKM

REGISTRATIONS:
 CRAIG RICHARD CARRIGAN
 REGISTERED PROFESSIONAL ENGINEER

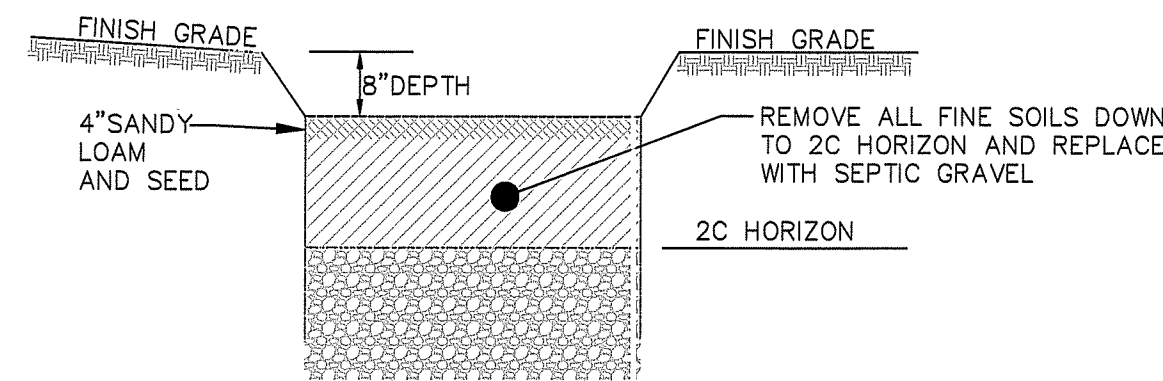
CARRIGAN ENGINEERING, INC.
 CIVIL AND ENVIRONMENTAL ENGINEERING
 86 BROOK FARM ROAD SOUTH
 WAKEFIELD, RI 02879
 PHONE: (401) 789-6865
 JAN 24 2020

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED APR 29 2020 FILE # 19-0122
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PERVIOUS CONCRETE SPECIFICATION

- CEMENT: PORTLAND CEMENT TYPE I, II, OR V CONFORMING TO ASTM C 150 OR PORTLAND CEMENT TYPE IP OR IS CONFORMING TO ASTM C 595.
- AIR ENTRAINING ADMIXTURES SHALL COMPLY WITH ASTM C 260
- CHEMICAL ADMIXTURES SHALL COMPLY WITH ASTM C 494.
- SYNTHETIC FIBER SHALL BE IN ACCORDANCE TO ASTM C 1116 TYPE III MADE OF POLYPROPYLENE.
- CELLULOSE FIBERS SHALL BE IN ACCORDANCE TO ASTM C 1116 TYPE IV MADE OF NATURAL FIBERS CONFORMING TO ASTM D 7357.
- AGGREGATES
 - COARSE AGGREGATES SHALL MEET THE SIZE AND GRADING REQUIREMENTS AS DEFINED IN ASTM D 448 AND SHALL COMPLY WITH ASTM C 33
 - NO. 8 (3/4 INCH) POORLY GRADED AGGREGATE SHALL BE USED WITH NO MORE THAN 15% PASSING THE NO.4 SIEVE
 - FOR 5 - 10% PASSING NO. 4 SIEVE ADD 125 LB/YD³ FINE AGGREGATE
 - FOR 0 - 5% PASSING NO.4 SIEVE ADD 200 LB/YD³ FINE AGGREGATE
- WATER SHALL COMPLY WITH ASTM C 1602
- MIXTURE PROPORTIONS
 - AGGREGATE/CEMENTITIOUS RATIO: 4:1 TO 5:1
 - CONCRETE MIXTURE UNIT WEIGHT: 115 LB/FT³ TO 135 LB/FT³
 - CONCRETE MIXTURE VOID CONTENT: 15%-25%
 - CEMENTITIOUS CONTENT: RANG OF 450 LBS/YD³ TO 600 LBS/YD³
 - SUPPLEMENTARY CEMENTITIOUS CONTENT: FLY ASH: 25% MAX., SLAG 25% MAX. OR COMBINED 55% MAX.
 - WATER - CEMENT RATIO: 0.28 - 0.35
 - FIBER REINFORCEMENT
 - SYNTHETIC POLYPROPYLENE: 1 LB/YD³ TO 1.5 LB/YD³
 - CELLULOSE RANGE: 1.5 LB/YD³ TO 3 LB/YD³
 - MACROSYNTHETIC FIBERS PER MANUFACTURER'S RECOMMENDATION
- ADMIXTURES SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- MIX WATER: MIX WATER SHALL BE SUCH THAT THE CEMENT PASTE DISPLAYS A WET METALLIC SHEEN WITHOUT CAUSING THE PASTE TO FLOW FROM THE AGGREGATE. INSUFFICIENT MIX WATER RESULTS IN INCONSISTENCY IN THE MIX AND POOR BOND STRENGTH. JOBSITE ADDITION OF MIX WATER IS PERMITTED TO ADJUST FOR DRY MIXTURES IN CONCRETE TRANSIT MIXERS; ADD WATER AT 0.5 GAL/CY AND REMIX FOR TWO MINUTES.
- PLATE COMPACTOR WITH A MIN. BASE AREA OF 2 SQ.FT. EXERTING A MIN. OF 10 PSI VERTICAL PRESSURE THROUGH A TEMPORARY COVER OF 3/4" PLYWOOD. CONTRACTION JOINTS TO BE CREATED BY ROLLING, FORMING, OR SAWING. ROLLED JOINTS SHALL BE FORMED USING A "PIZZA CUTTER ROLLER" TO WHICH A BEVELED FIN WITH A MINIMUM DEPTH OF 1/2" THE THICKNESS OF THE SLAB HAS BEEN WELDED AROUND THE CIRCUMFERENCE OF A STEEL ROLLER.
- ALL PERVIOUS CONCRETE MIXTURE PROPORTIONS INCLUDING MATERIAL WEIGHTS, WATER-CEMENTITIOUS RATIO, ABSOLUTE VOLUMES INCLUDING DENSITY (UNIT WEIGHT) AND VOID CONTENT OF FRESHLY MIXED PERVIOUS CONCRETE MIXTURE PER ASTM C 1688
- AGGREGATE TYPE, SOURCE, GRADING, DRY-RODDING UNIT WEIGHT, PERCENT PASSING NUMBER 4 SIEVE AND VOID CONTENT.
- CEMENT, SUPPLEMENTARY CEMENTITIOUS MATERIALS, SYNTHETIC (POLYPROPYLENE) OR CELLULOSE FIBERS AND CHEMICAL ADMIXTURE MANUFACTURER CERTIFICATIONS.
- IN-PLACE HARDENED DENSITY (UNIT WEIGHT) AND VOID CONTENT OF PROPOSED PERVIOUS CONCRETE MIXTURE PER ASTM C 1754.
- PERVIOUS CONCRETE SHALL NOT BE PLACED WHEN THE AMBIENT TEMPERATURE IS 40°F OR LOWER AND/OR IF THE TEMPERATURE FOR THE FOLLOWING SEVEN (7) DAYS IS PREDICTED TO BE 40°F OR LOWER.
- PERVIOUS CONCRETE SHALL NOT BE PLACED WHEN THE AMBIENT TEMPERATURE IS 90°F OR HIGHER AND/OR IF THE TEMPERATURE FOR THE FOLLOWING SEVEN (7) DAYS IS PREDICTED TO BE 90°F OR HIGHER.
- PERVIOUS CONCRETE PAVEMENT SHALL NOT BE PLACED ON FROZEN COARSE AGGREGATE OR SUBGRADE.
- EVAPORATION CONTROL MEASURES SHALL BE APPLIED FROM THE TIME OF DISCHARGE UNTIL THE PAVEMENT IS COVERED WITH POLYETHYLENE SHEETING TO PREVENT MOISTURE LOSS DURING PLACEMENT OPERATIONS.
- ISOLATION JOINT MATERIAL SHALL BE FULL DEPTH OF PAVEMENT, 1" OR 3/2" PROFLEX VINYL EXPANSION JOINT BY OSCODA PLASTICS, OR EQUAL IN COMPLIANCE WITH ASTM D 1751 OR ASTM D 1752.

REFERENCE:
"SPECIFIER'S GUIDE FOR PERVIOUS CONCRETE PAVEMENT WITH DETENTION (OHIO READY MIXED CONCRETE ASSOCIATION - PCP -2795) DECEMBER 1, 2014"

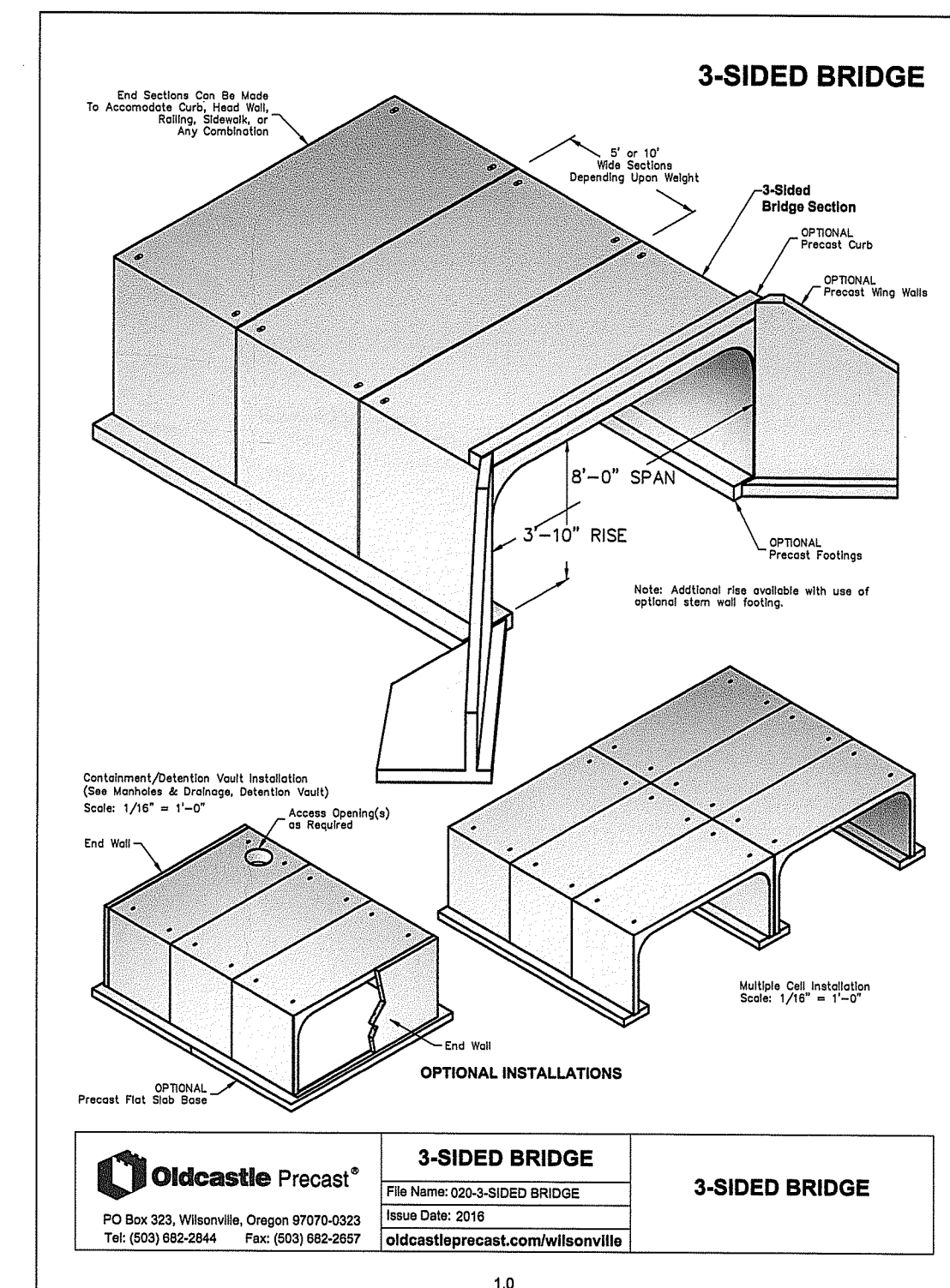


RETENTION BASIN #1 SECTION DETAIL
NOT TO SCALE

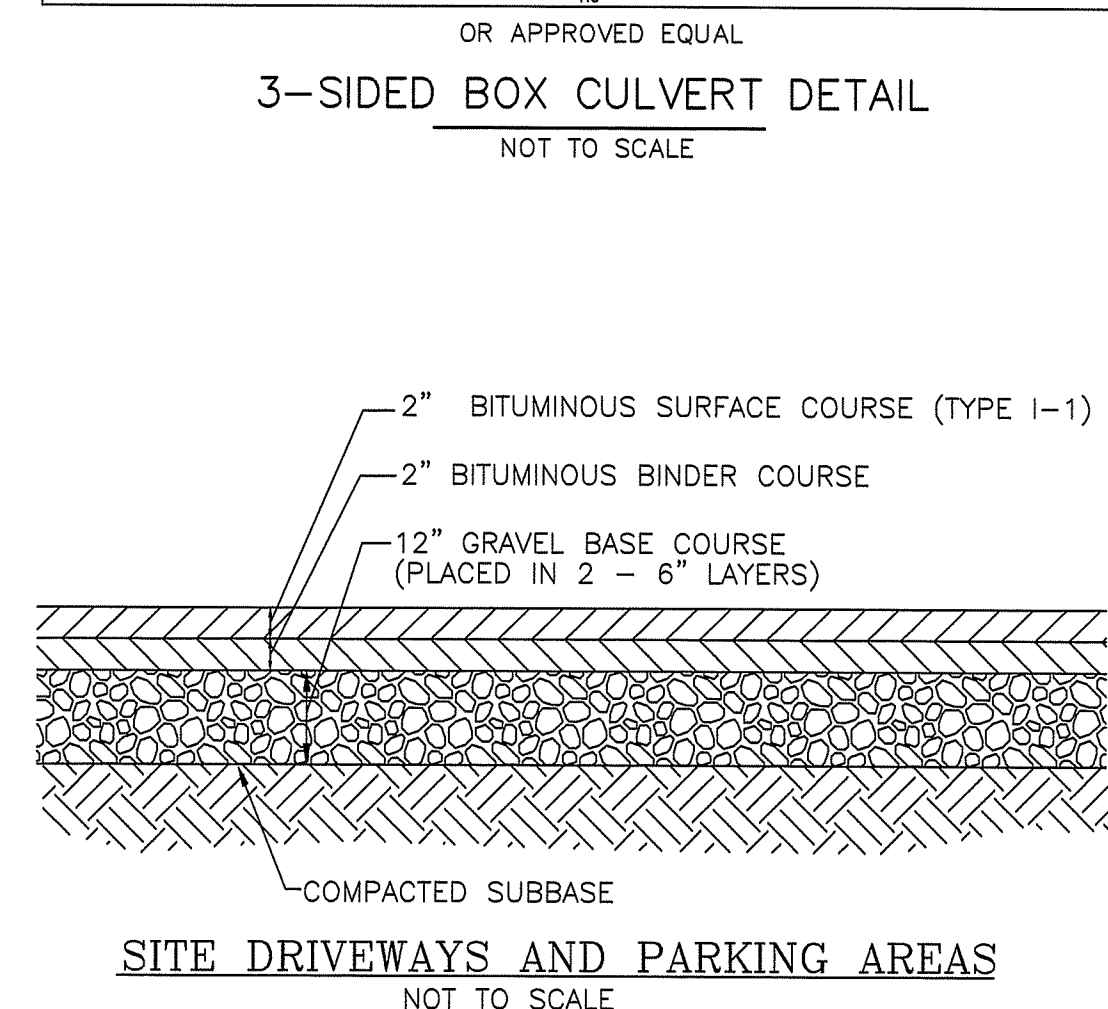
SEPTIC GRAVEL SPECIFICATION:
GRAVEL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 3". UP TO 10% MAY BE SIZED BETWEEN 3/4" AND 3". GRAVEL SHALL MEET THE FOLLOWING:

SIEVE SIZE	% PASSING	SIEVE SIZE	% PASSING
3/4"	100%	#40	10%-50%
#4	55%-100%	#100	0%-20%
#10	40%-100%	#200	0%-2%

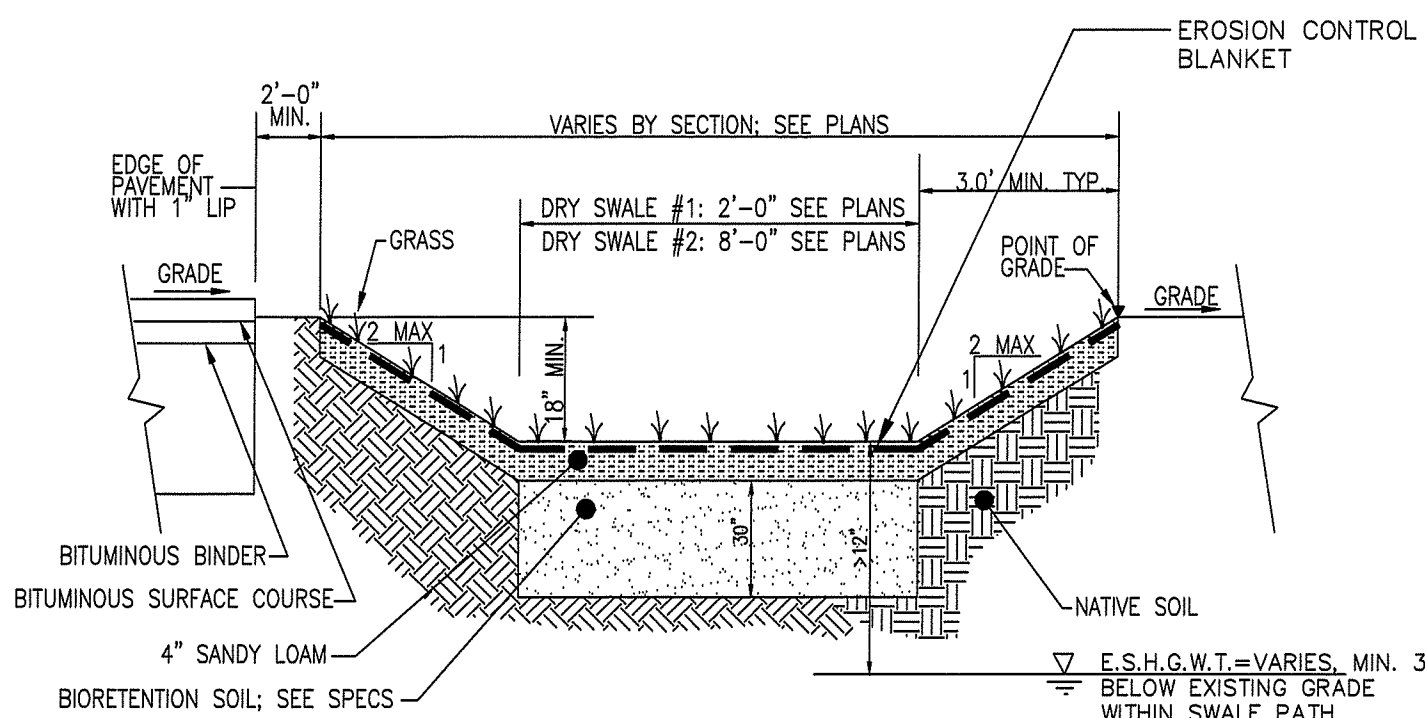
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Christopher D. Sweeney



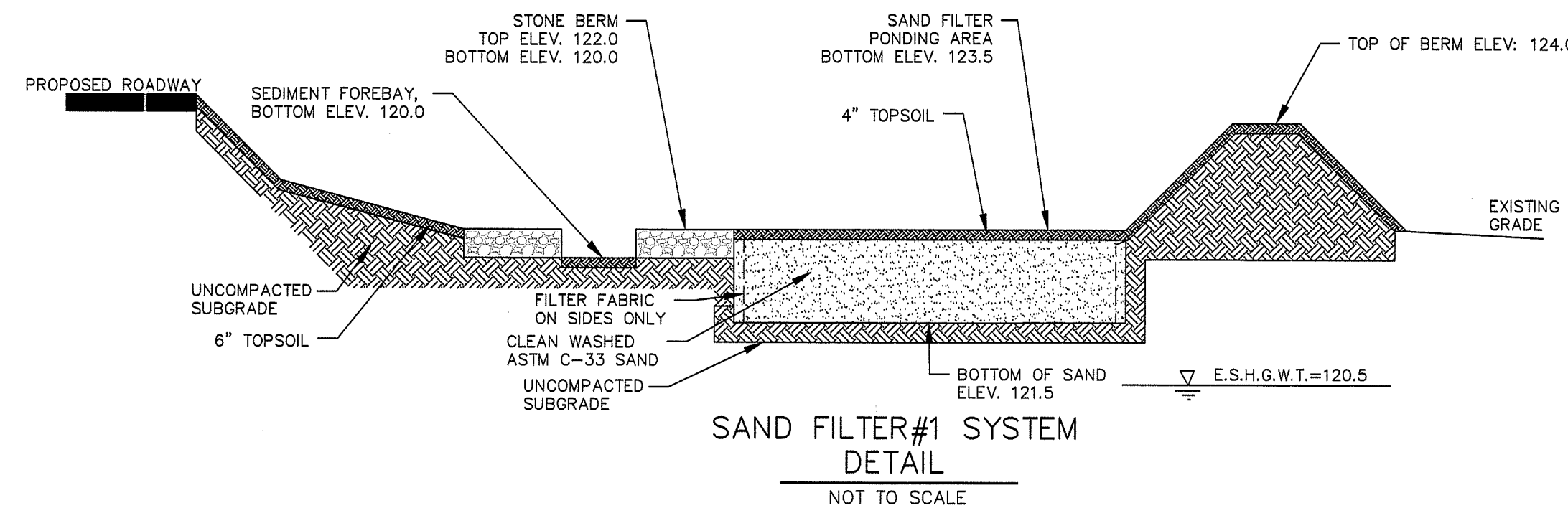
OR APPROVED EQUAL
3-SIDED BOX CULVERT DETAIL
NOT TO SCALE



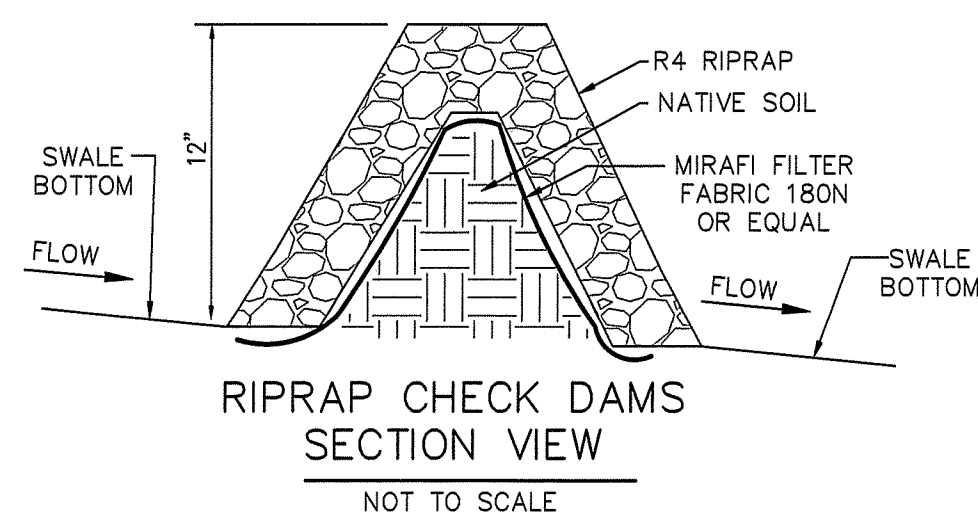
SITE DRIVEWAYS AND PARKING AREAS
NOT TO SCALE



TYPICAL DRY SWALE SECTION VIEW
NOT TO SCALE



SAND FILTER #1 SYSTEM DETAIL
NOT TO SCALE



RIPRAP CHECK DAMS SECTION VIEW
NOT TO SCALE

BIORETENTION SOIL SPEC.:

- BIORETENTION SOIL MIX (BY VOLUME):

SAND	85 TO 88%
ORGANIC MATTER	3 TO 5%
SILT	0 TO 12%
CLAY	0 TO 2%
- THE BIORETENTION SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OTHER WOODY MATERIAL OVER 1" IN DIAMETER, OR BRUSH/SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE SOIL SHOULD BE IN LIFTS OF 6 INCHES, LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET).

DRY SWALE & VEGETATED SWALE MAINTENANCE NOTES:

- OPEN CHANNEL PRACTICES SHALL BE INSPECTED ANNUALLY AND AFTER STORMS OF GREATER THAN OR EQUAL TO THE 1-YEAR, 24-HOUR TYPE III PRECIPITATION EVENT.
- SEDIMENT BUILD-UP WITHIN THE BOTTOM OF THE CHANNEL SHALL BE REMOVED WHEN GREATER THAN OR EQUAL TO 3" DEPTH OF SEDIMENT HAS BEEN ACCUMULATED IN THE CHANNEL.
- ERODED SIDE SLOPES AND CHANNEL BOTTOMS SHALL BE STABILIZED AS NECESSARY.
- IN THE ABSENCE OF EVIDENCE OF CONTAMINATION, REMOVED DEBRIS MAY BE TAKEN TO A LANDFILL OR OTHER PERMITTED FACILITY.
- SEDIMENT TESTING MAY BE REQUIRED PRIOR TO SEDIMENT DISPOSAL WHEN CONTAMINATION IS PRESENT.
- VEGETATION SHALL BE MOWED AS REQUIRED TO MAINTAIN GRASS HEIGHTS IN THE 4-6 INCH RANGE, WITH MANDATORY MOWING ONCE GRASS HEIGHTS EXCEED 10 INCHES.
- IF THE SURFACE OF THE DRY SWALE BECOMES CLOGGED TO THE POINT THAT STANDING WATER IS OBSERVED ON THE SURFACE 48 HOURS AFTER PRECIPITATION EVENTS, THE BOTTOM SHALL BE ROTOTILLED OR CULTIVATED TO BREAK UP ANY HARD-PACKED SEDIMENT, AND THEN RESEDED.
- EVERY FIVE YEARS, THE CHANNEL BOTTOM SHOULD BE SCRAPED TO REMOVE SEDIMENT AND TO RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE, AND SHOULD BE SEEDED TO RESTORE GROUND COVER.
- DURING INSPECTION, ANY STRUCTURAL COMPONENTS OF THE SYSTEM, INCLUDING TRASH RACKS, VALVES, PIPES, AND SPILLWAY STRUCTURES, SHOULD BE CHECKED FOR PROPER FUNCTION. ANY CLOGGED OPENINGS SHOULD BE CLEANED OUT AND REPAIRS SHOULD BE MADE WHERE NECESSARY.

RIDEM WETLAND PERMIT APPLICATION PLAN - PHASE 2
DETAIL SHEET - 2

A.P. 5B, LOT 38 / A.P. 6B, LOT 2 / A.P. 6B, LOT 4
87 KINGSTOWN ROAD
RICHMOND, RHODE ISLAND

PREPARED FOR: THE PRESERVE AT BOULDER HILLS LLC.
SCALE: AS SHOWN DATE: 04/05/19 SHEET 9 OF 9

REVISIONS:

NO.	DATE	DESCRIPTION	BY
1.	11-20-19	RIDEM COMMENTS	DKM

REGISTRATIONS:
CARRIGAN ENGINEERING, INC.
CRAIG RICHARD CARRIGAN
REGISTERED PROFESSIONAL ENGINEER

CARRIGAN ENGINEERING, INC.
CIVIL AND ENVIRONMENTAL ENGINEERING
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PHONE: (401) 789-6865