

# TRAIL IMPROVEMENTS for DUCK POND

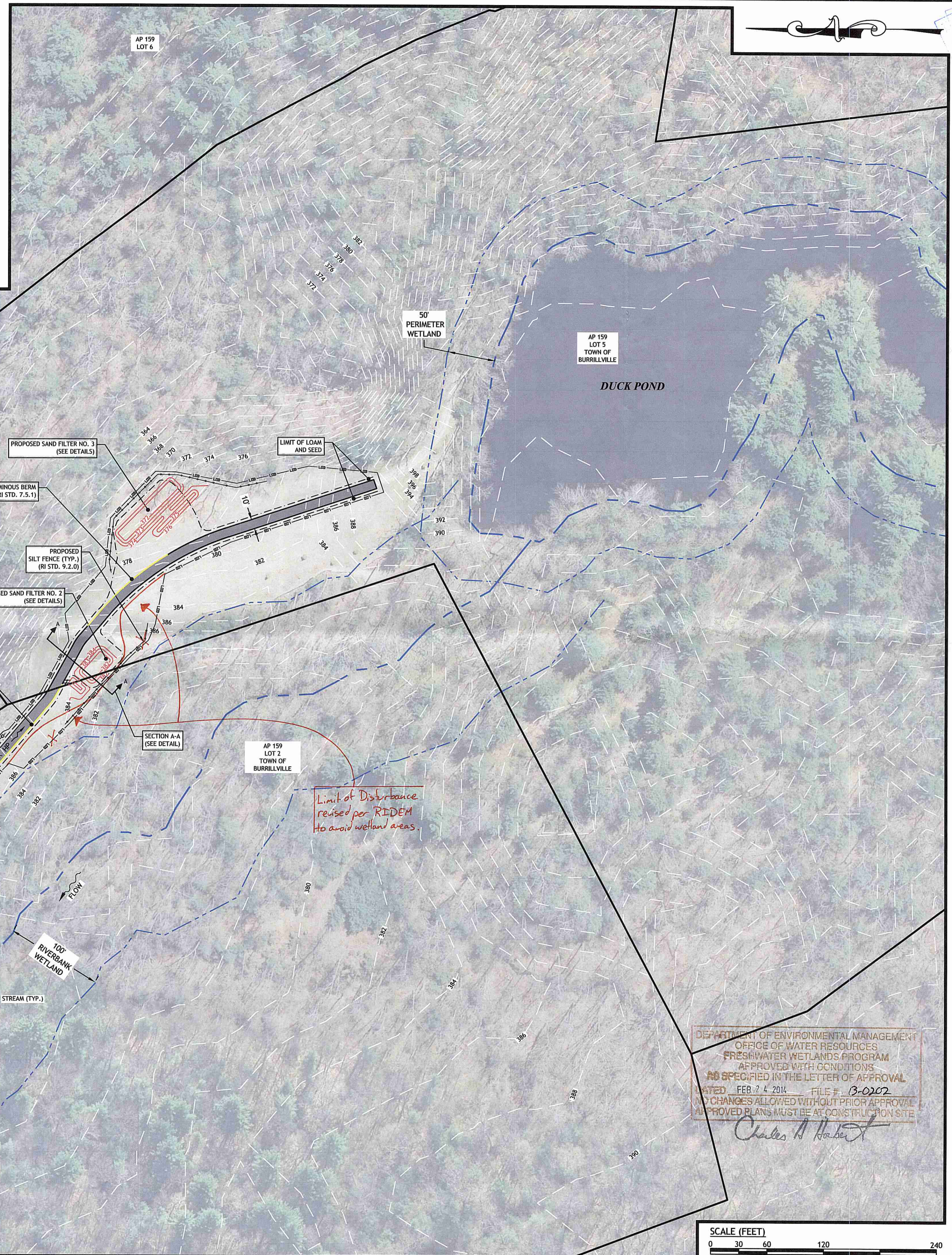
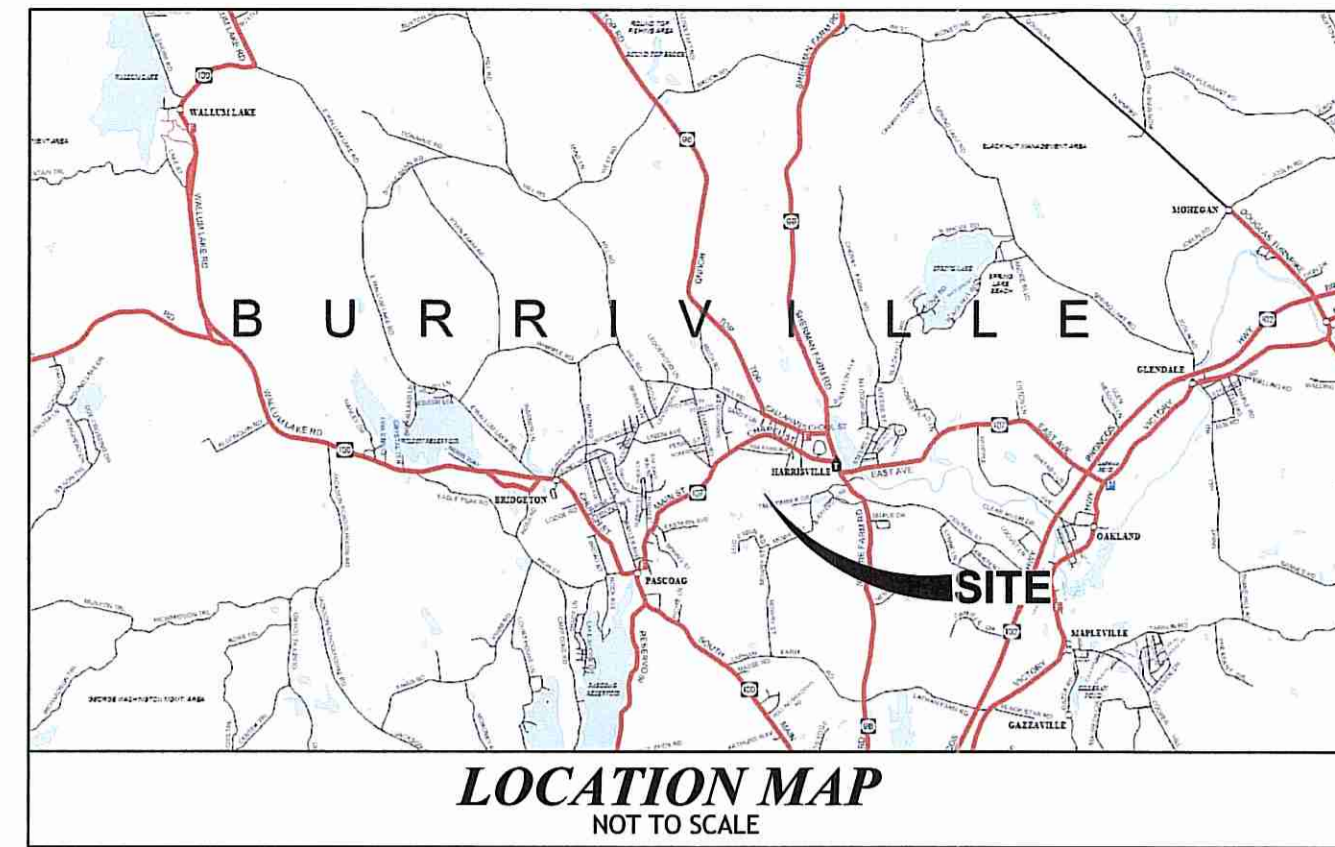
RAILROAD AVENUE AND CHAPEL STREET  
BURRILLVILLE, RHODE ISLAND  
AP 159, LOTS 2 & 5

### APPLICANT & PROPERTY OWNER

TOWN OF BURRILLVILLE  
105 HARRISVILLE MAIN STREET  
HARRISVILLE, RI 02830

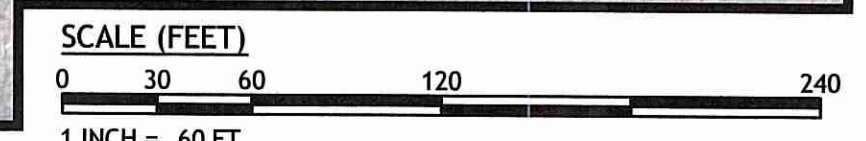
### ENGINEER

JOE CASALI ENGINEERING, INC.  
300 POST ROAD  
WARWICK, RI 02888  
(401) 944-1300 phone  
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED FEB 24 2014 FILE # 13-0202  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles H. Herbert*



**JCE**  
JOE CASALI ENGINEERING, INC.  
CIVIL - SITE DEVELOPMENT - TRANSPORTATION  
DRAINAGE - WETLANDS - TRANSPORTATION  
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JOSEPH A. CASALI  
No. 7250  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

**DUCK POND**  
TRAIL IMPROVEMENTS  
RAILROAD AVENUE & CHAPEL STREET  
BURRILLVILLE, RHODE ISLAND  
AP 159, LOTS 2 & 5

REVISIONS:

NO.	DATE	DESCRIPTION

DESIGNED BY: GEC  
DRAWN BY: GEC  
CHECKED BY: JAC  
DATE: NOV. 2013  
PROJECT NO: 05-92ac

PRELIMINARY, NOT FOR CONSTRUCTION

**SITE PLAN**

**SHEET 1 OF 2**

G:\05-92 Town of Burrillville\05-92ac Duck Pond\RPFDUCK POND\PLANSET\NOV 2013.dwg Feb. 03, 2014 12:29pm

**GENERAL NOTES:**

- EXISTING CONDITION COMPILED BY USING ORTHOPHOTOS, RIGS, RECORD INFORMATION AND FIELD MEASUREMENTS.
- PROPERTY LINES OBTAINED VIA TOWN OF BURRILLVILLE GIS.
- THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR CITY WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.
- THE SITE IS LOCATED ON THE FLOOD INSURANCE RATE MAP FOR PROVIDENCE COUNTY, MAP NUMBER 4407C0135G, EFFECTIVE MARCH 2, 2009. THE PROPERTY LIES WITHIN ZONE X. ZONE X IS DEFINED AS
- SOILS EXISTING ON THE SITE ARE UDORFKTMS - URBAN LAND COMPLEX.
- FRESHWATER WETLANDS ARE DELINEATED USING RIGIS INFORMATION.

- SITE NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) OF ALL MATERIALS INDICATED ON THE PLANS.
  - STOCKPILES OF EARTH MATERIALS SHALL NOT BE LOCATED ADJACENT TO DRAINAGE STRUCTURES.
  - ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREAS WILL RECEIVE A MINIMUM OF 6" OF LOAM AND SEED. CONTRACTOR MAY NOT ALTER EXISTING SITE GRADIES OTHER THAN AS SPECIFIED ON THE SITE PLANS.
  - THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SURVEY LAYOUT SERVICES FOR THE WORK AND SHALL SUBMIT "AS-BUILT" DRAWINGS OF ALL WORK, WHICH SHALL BE STAMPED AND CERTIFIED BY A RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR OR A RHODE ISLAND REGISTERED PROFESSIONAL ENGINEER.
  - ANY ITEM OF WORK NOT SPECIFICALLY INDICATED ON THE PLANS BUT IS REQUIRED FOR THE COMPLETE CONSTRUCTION OF THE PROJECT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND INCLUDED IN THE CONTRACT BID PRICE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SITE CONDITIONS.
  - ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER OR TOWN.
  - THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION OR REPLACE TREES, SHRUBS, FENCES, SIGNS, GUARDRAILS, DRIVEWAYS, SIDEWALKS AND ANY OTHER OBJECT AFFECTED BY THIS OPERATION.
  - ALL LEDGE TO BE REMOVED BY MECHANICAL MEANS.
  - ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WET POINTS, SCREENS, OR OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE OF ALL SURFACE AND SUBSURFACE WATER ENCOUNTERED IN THE PERFORMANCE OF THE WORK.
  - ALL SITE WORK, INCLUDING BUT NOT LIMITED TO, BITUMINOUS PAVEMENT, ROADWAY CONSTRUCTION, AGGREGATE MATERIALS, DRAINAGE STRUCTURES, CURBING, SIDEWALK, LANDSCAPING, SAW CUTTING, ETC. SHALL CONFORM TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2004 EDITION (WITH LATEST ADDENDA) AND THE RIDOT STANDARD DETAILS, 1998 EDITION (WITH LATEST ADDENDA).

- LAYOUT NOTE:**
- THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEMS FOUND WHICH DO NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

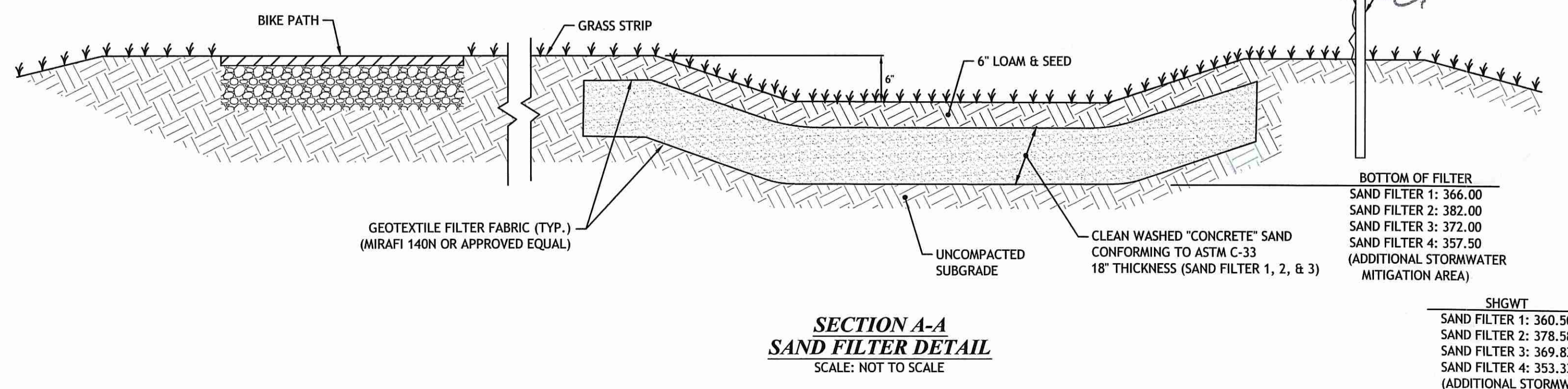
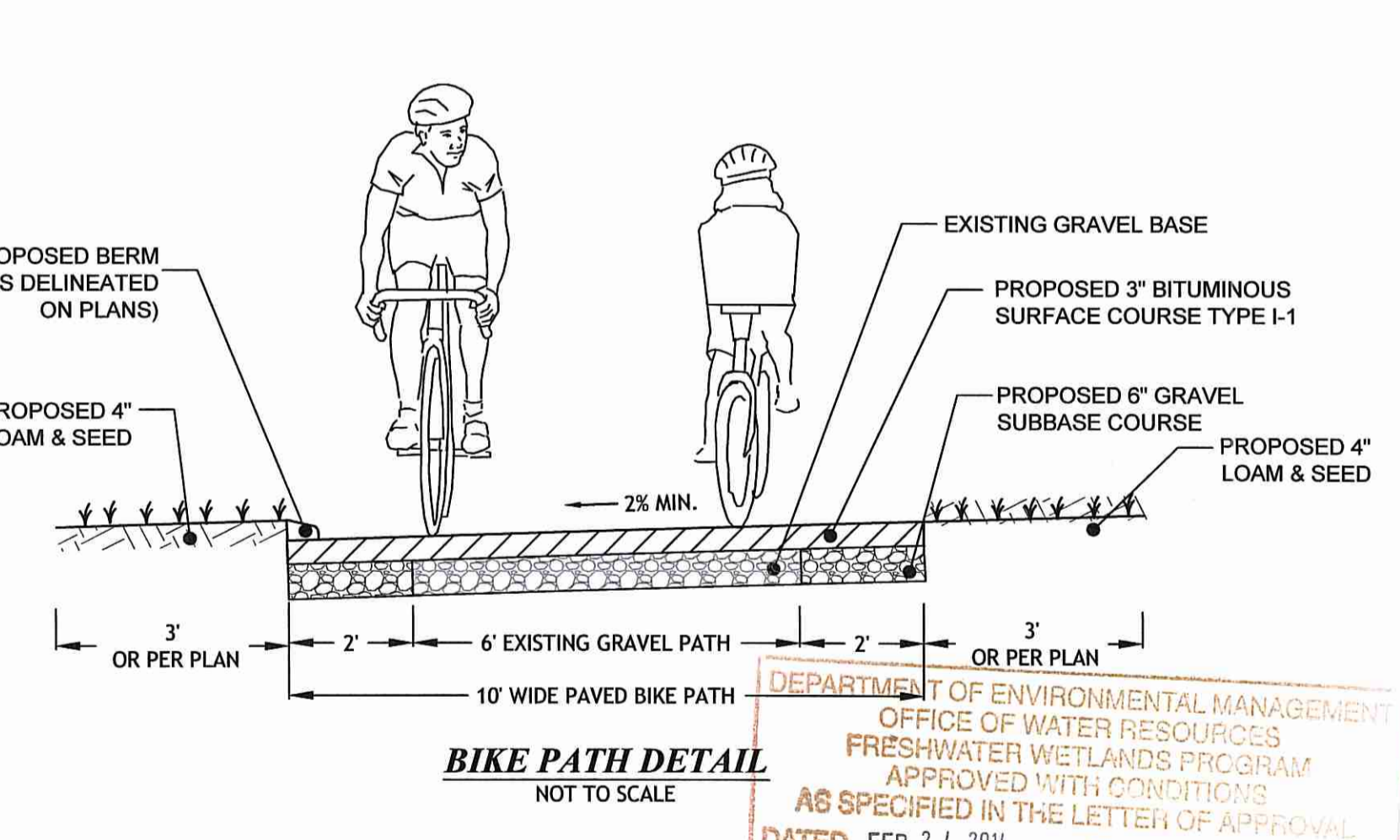
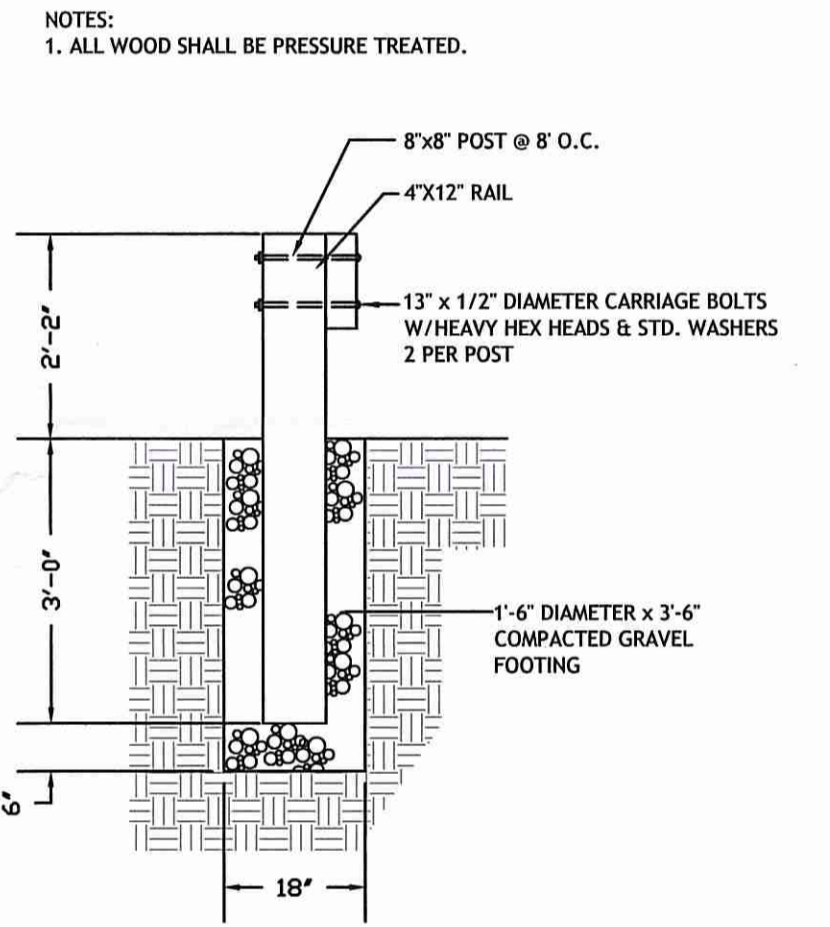
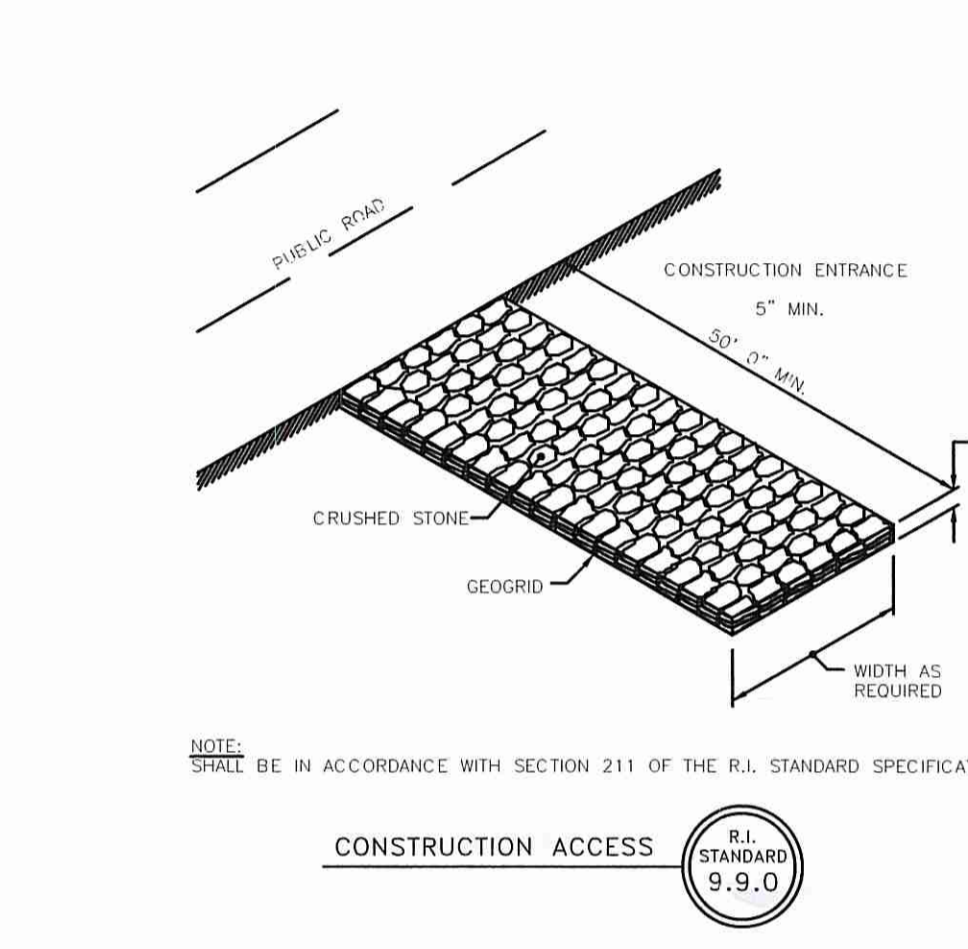
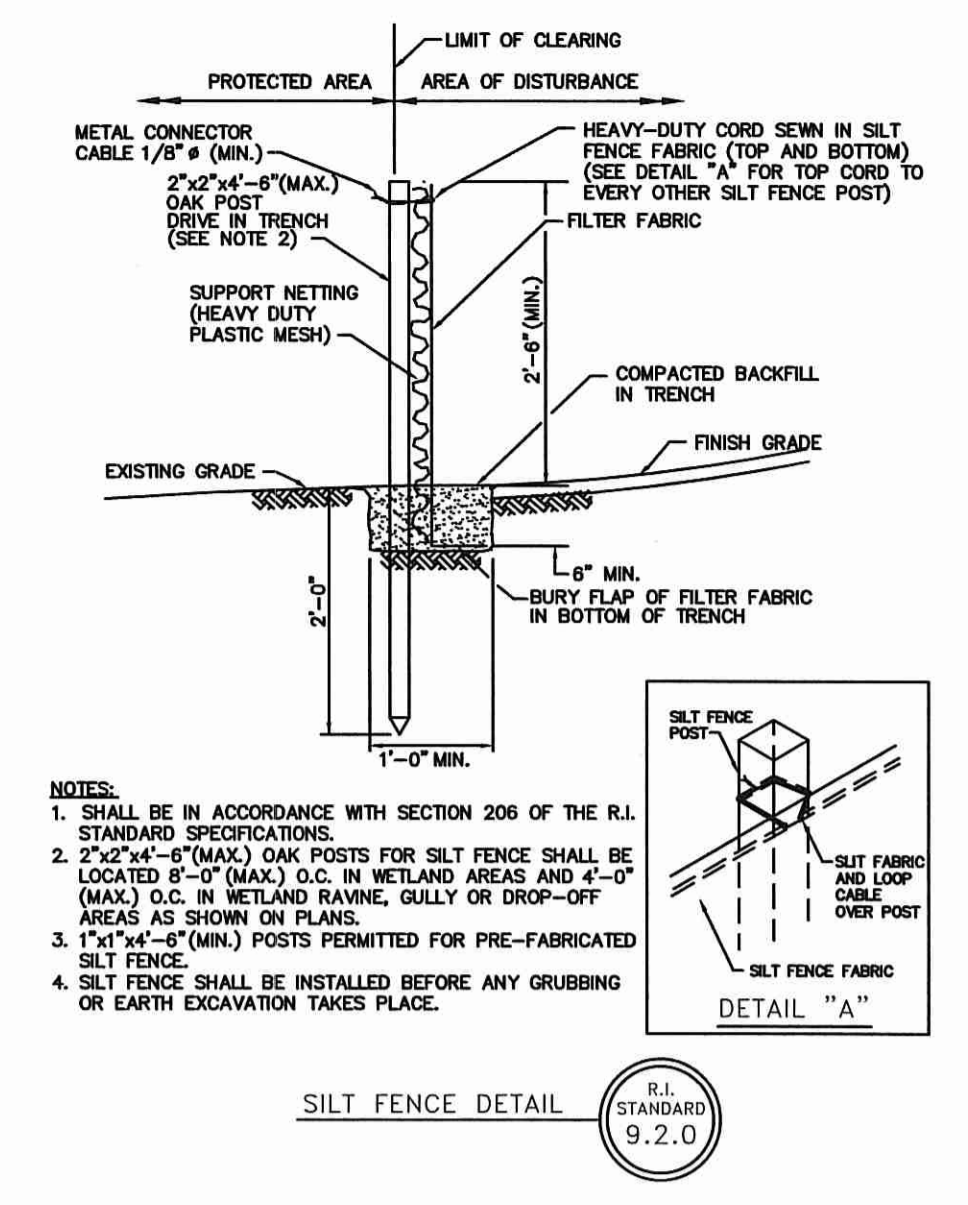
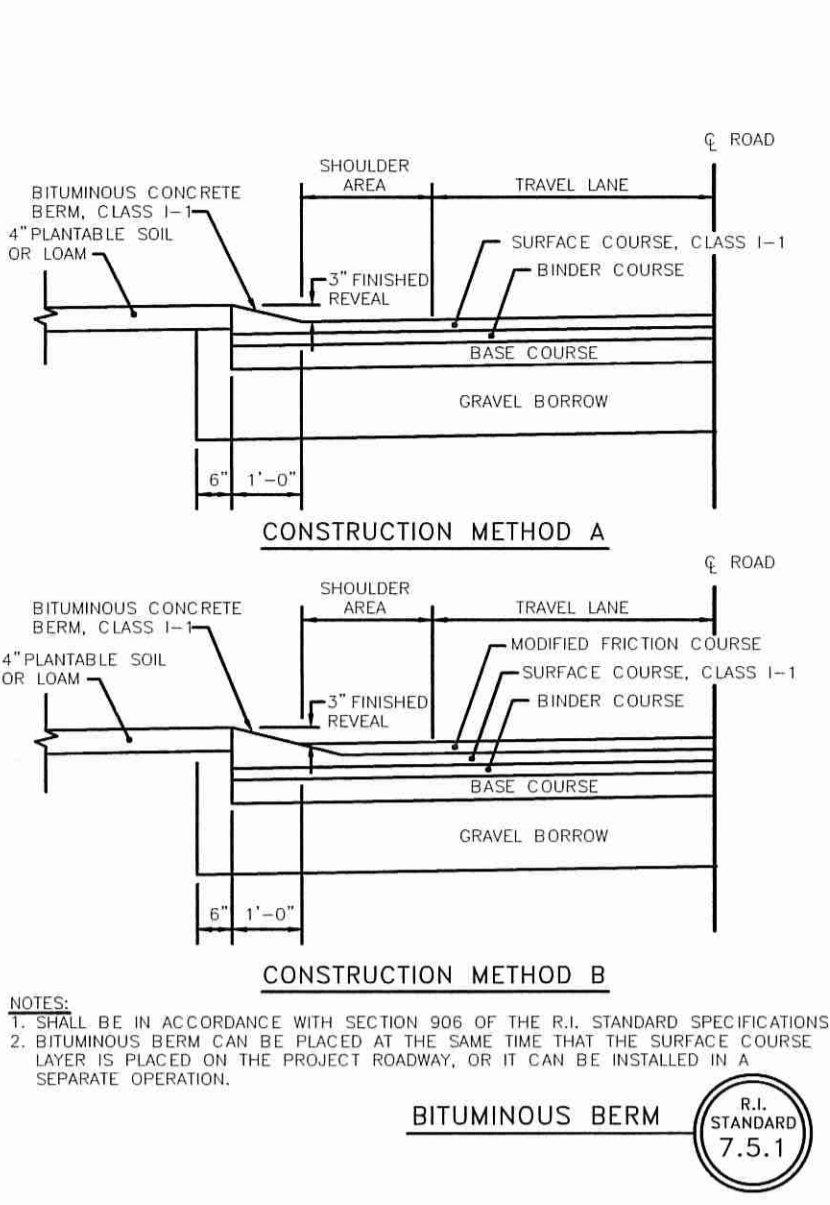
- DRAINAGE SYSTEM NOTES:**
- SAND FILTERS MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
    - IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE SAND FILTER AREA AND THE REQUIRED BACKFILL.
    - WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF SAND FILTER AREA IS EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE.
    - COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE SAND FILTER BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE PERFORMED TO REFRATURE THE SOIL PROFILE THROUGHOUT THE 12-IN COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
    - WHEN BACKFILLING THE SAND FILTERS, PLACE SOIL IN LIFTS 12IN OR GREATER.
    - DO NOT USE HEAVY EQUIPMENT WITHIN THE SAND FILTER. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND.
    - GRADE SAND FILTER MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
  - THE DESIGN ENGINEER MUST SUBMIT AN AS-BUILT PLAN AND A CERTIFICATION TO TOWN ENGINEER THAT THE CONSTRUCTION IS IN COMPLIANCE WITH THE DESIGN PLANS FOR ALL ELEMENTS OF THE STORM OR DRAINAGE SYSTEM PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES:**

- THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN SHALL BE TOTALLY UNDISTURBED, TO REMAIN IN NATURAL CONDITION.
- ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REGULARLY CHECK ALL SEEDED AREAS TO ENSURE THAT A GOOD STAND IS MAINTAINED.
- ALL SILT FENCE, TEMPORARY TREATMENT (HAY, STRAW, ETC.) AND TEMPORARY EROSION PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
- STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES OF NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEED AND/OR STABILIZED PER CONTRACT SPECIFICATIONS.
- THE SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY SILT FENCE AS NEEDED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE SILT FENCE BECOMES FILLED WITH SEDIMENTS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE FOR THE ENTIRE DURATION OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FOLLOW THE DIRECTION OF THE RESIDENT ENGINEER WITH REGARD TO INSTALLATION, MAINTENANCE, AND REPAIR OF ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS (HAYBALES, SILT FENCE, ETC.) SHALL BE MAINTAINED UNTIL ALL EXPOSED SOILS ARE SATISFACTORILY STABILIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND/OR RESEEDING ALL AREAS THAT DO NOT DEVELOP WITHIN ONE YEAR FROM THE COMPLETION OF CONSTRUCTION.
- ALL REFERENCED SOIL EROSION AND SEDIMENTATION CONTROLS INCLUDING MATERIALS USED, APPLICATION RATES AND THE INSTALLATION PROCEDURES SHALL BE PERFORMED PER THE "RHODE ISLAND EROSION AND SEDIMENTATION HANDBOOK", DATED 1993.
- THE OPERATOR SHOULD INITIATE APPROPRIATE VEGETATIVE PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.

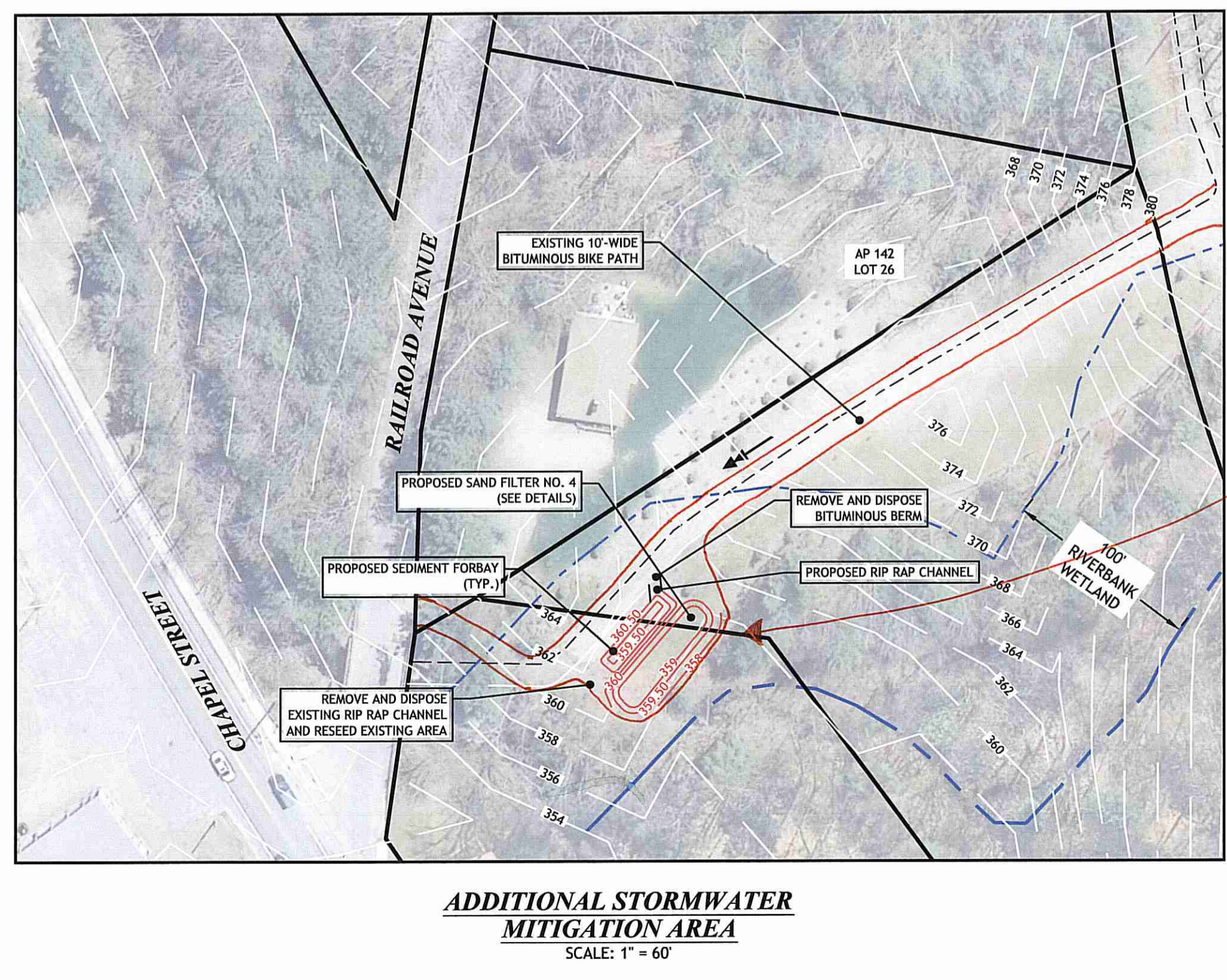
- BMP MAINTENANCE SCHEDULE:**
- ALL MAINTENANCE (INCLUDING CLEANING) REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL INCLUDE:
    - MEASURES NEEDED TO ENSURE THE PROPER OPERATION OF THE STORM WATER RUNOFF (DRAINAGE) AND WATER QUALITY CONTROL SYSTEMS TO INCLUDE INSPECTION, CLEANING AND REPAIRS TO ALL SAND FILTERS, PEA GRAVEL DIAPHRAGMS, AND OVERFLOW WEIRS.
    - INSPECTION OF ALL SLOPES, BERMS, AND OTHER CONTROL STRUCTURES FOR STRUCTURAL INTEGRITY/STABILITY AND EVIDENCE OF SOIL EROSION PROCESSES, AND MAINTENANCE OF THESE STRUCTURES IF NECESSARY. INSPECTIONS SHALL BE PERFORMED FOLLOWING ALL RAIN EVENTS OF 1/2 INCH RAINFALL OR MORE IN A 24-HOUR PERIOD, OR BI-MONTHLY IF NO RAINFALL EVENT OCCURS.
    - THE CONTRACTOR SHALL SURVEY AND STAKE THE PROPOSED DRAINAGE BMP'S (SEDIMENT FOREBAYS AND SAND FILTERS) AND INSTALL SILT FENCE TO PROTECT DRAINAGE BMP'S DURING CONSTRUCTION.
  - UPON COMPLETION OF THE PROJECT CONSTRUCTION, AND PRIOR TO VACATING THE SITE, THE CONTRACTOR SHALL CONDUCT A FINAL INSPECTION AND CLEANING OF THE DRAINAGE SYSTEM AND ALL ASSOCIATED STRUCTURES.
  - AFTER THE COMPLETION OF THE ENTIRE PROJECT TO THE SATISFACTION OF THE OWNER OR ENGINEER, ALL MAINTENANCE OF THE DRAINAGE SYSTEM SHALL THEN BE THE RESPONSIBILITY OF THE TOWN OF BURRILLVILLE OR THEIR APPROVED AGENTS.
  - AFTER THE COMPLETION OF PROJECT CONSTRUCTION AND THE FINAL STABILIZATION OF THE ENTIRE SITE, THE INSPECTION AND MAINTENANCE OF ALL STORM WATER FACILITIES MUST BE PERFORMED AS FOLLOWS:
    - ANY REQUIRED REPAIR AND REPLACEMENT OF DRAINAGE STRUCTURES OR FACILITIES SHALL BE DONE PROMPTLY TO ENSURE PROPER FUNCTIONING OF THE SYSTEM.
    - ALL DESIGN, CLEANING, AND MAINTENANCE OF THE STORM WATER DRAINAGE SYSTEM SHALL FOLLOW AT LEAST THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION MINIMUM STANDARDS, SECTION 212 AND SECTION 708. WHERE APPROPRIATE, PROCEDURES REGARDING THE DRAINAGE DESIGN, AND THE INSPECTION AND MAINTENANCE OF THE STORM WATER DRAINAGE SYSTEM SHALL BE FOLLOWED AS OUTLINED IN THE "RHODE ISLAND STORM WATER DESIGN AND INSTALLATION STANDARDS MANUAL" (RIDEM/RICRMC, DECEMBER 2010).

- INSPECTION, MAINTENANCE & REPAIR NOTES:**
- IT SHALL BE THE RESPONSIBILITY OF THE TOWN OF BURRILLVILLE OR THEIR APPROVED AGENTS TO INSPECT, MAINTAIN AND REPAIR THE STORMWATER MANAGEMENT SYSTEM AS NECESSARY AND IN ACCORDANCE WITH THE OPERATION AND MAINTENANCE PLAN.
    - WEEDS AND INVASIVE PLANT SPECIES SHALL BE REMOVED BY HAND.
    - LEAF LITTER AND OTHER DETRITUS SHALL BE REMOVED TWICE PER YEAR.
    - GRASS SHALL BE MOWED TWICE PER YEAR AT A MINIMUM.
    - SAND FILTERS SHALL BE INSPECTED TWICE DURING FOR THE FIRST YEAR AND ANNUALLY THEREAFTER FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, ETC. IF SEDIMENT BUILDUP IS FOUND, CORE AERATION OR CULTIVATING OF THE FILTER AREAS MAY BE REQUIRED TO ENSURE ADEQUATE FILTRATION.
    - THE PEA GRAVEL DIAPHRAGM SHOULD BE INSPECTED ANNUALLY FOR CLOGGING. SEDIMENT BUILDUP IS A COMMON PROBLEM WHERE RUNOFF LEAVES AN IMPERVIOUS SURFACE AND ENTERS A VEGETATIVE OR EARTHEN SURFACE.
    - THE OVERFLOW WEIR SHOULD BE INSPECTED ANNUALLY TO ENSURE THAT THEY ARE FUNCTIONING.
  - THE DOCUMENT ENTITLED "STORMWATER OPERATION AND MAINTENANCE PLAN" DATED NOVEMBER 2013 SHALL BE REFERENCED FOR A COMPLETE AND COMPREHENSIVE PRESENTATION OF THE INSPECTION, MAINTENANCE AND REPAIR RESPONSIBILITIES REGARDING THE SUBJECT PROJECT SITE.



**LEGEND**

---	EXISTING PROPERTY LINE	
---	PROPOSED PROPERTY LINE	
---	ABUTTING PROPERTY LINE	
---	WETLAND EDGE	
△ WF	WETLAND FLAG	
---	50' PERIMETER WETLAND	
---	100' RIVERBANK WETLAND	
---	200' RIVERBANK WETLAND	
---	EXISTING EASEMENT	
---	EXISTING CONTOUR	
---	PROPOSED CONTOUR	
---	SLOPES > 15%	
---	EXISTING STONE WALL	
○	IRON PIN	
○	DRILL HOLE	
□	CONCRETE BOUND	
---	EXISTING CURB	
---	GUARD RAIL	
---	DRAIN LINE	
---	DRAINAGE MANHOLE	
---	CATCH BASIN	
---	UTILITY POLE	
---	UNDERGROUND ELECTRIC	
---	VERIZON LINE	
---	WATER LINE	
---	WATER SHUT OFF VALVE	
---	WELL	
---	SEWER	
---	SMH	
---	N/F	NOW OR FORMERLY
---	TREELINE	
---	HAY BALES	
---	LIMIT OF DISTURBANCE	
---	SOIL EVALUATION	
---	PROPOSED CURB	
---	PROPOSED BIT. BERM	
---	PROPOSED EDGE OF PAVEMENT	
---	CHANGE IN CURB TYPE	



Limit of Disturbance and erosion and sedimentation controls per RIDEM

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**GENERAL NOTES & DETAILS**

**SHEET 2 OF 2**