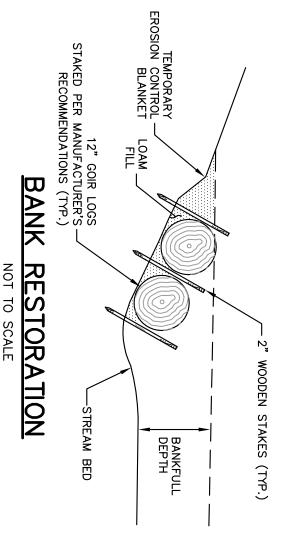


#### VEGETATED AREAS/SLOPES:

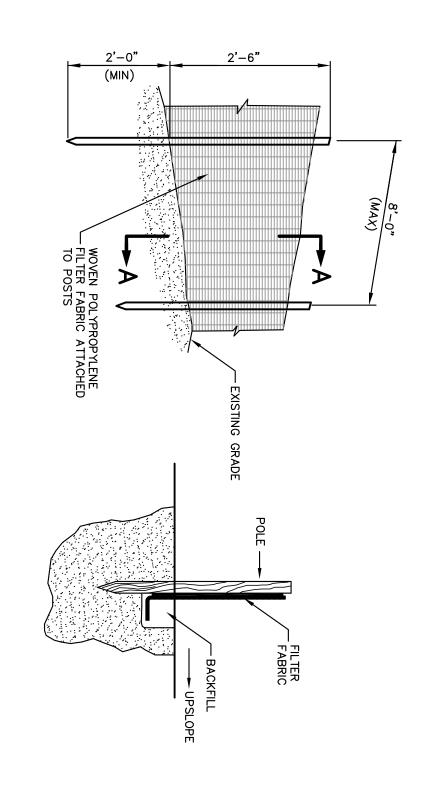
4" LOAM AND SEED WITH EROSION CONTROL BLANKET (ON 3:1 SLOPE OR LESS USE NORTH AMERICAN GREEN S75BN SINGLE NET EROSION BLANKET; ON SLOPES GREATER THAN 3:1 US NORTH AMERICAN GREEN SC150BN DOUBLE NET EROSION CONTROL BLANKET, OR ENGINEER APPROVED EQUAL.)

# WORK IN VEGETATED WETLAND AREAS

- WETLAND SOIL SHALL BE EXCAVATED TO A DEPTH OF 12 INCHES, AND STOCKPILED AND COVERED WITH BURLAP OR STRAW MULCH. PERIODIC LIGHT APPLICATION OF WATER MAY BE REQUIRED TO MAINTAIN MOISTURE.
- WETLAND SEED MIX SHALL BE APPLIED AT A RATE OF 1/2 LB./1000 SQUARE FEET AND LIGHTLY RAKED TO ENSURE SOIL/SEED CONTACT. WETLAND SOIL SHALL BE RESPREAD 12 INCHES DEEP AND LIGHTLY COMPACTED BY HAND.
- WETLAND SEED MIX SHALL BE PURE LIVE SEED AND CONTAIN NATIVE NON-HYBRIDIZED SPECIES. SEED MIX SPECIES LIST SHALL BE SUBMITTED TO THE ENGINEER FOR APROVAL PRIOR TO APPLICATION.



RESTORATION
NOT TO SCALE



SILTATION DETAIL

**ELEVATION** 

SECTION A-A

# CONSTRUCTION SEQUENCE

- WORK TO BE CONDUCTED DURING EARLY TO LATE FALL 2016. PART OR ALL OF THE ROAD WILL BE BLOCKED OFF. IF ALL OF THE ROAD IS BLOCKED, TRAFFIC DETOURED DURING CONSTRUCTION. CONSTRUCTION TO TAKE AT LEAST 7 TO 10 DAYS.
- REMOVE EXISTING GUARD RAIL WITHIN WORK AREA.
- INSTALL EROSION CONTROL (SILT SOCK OR STRAW WATTLES) ALONG OUTER EDGE OF THE WORK AREA.
- CUT ASPHALT ACROSS SECTION OF ROAD WHERE CULVERT IS TO BE REPLACED.
- INSTALL SANDBAG DAM, SUMP AND WATER PUMP JUST OUTSIDE WORK AREA ON INLET SIDE OR ROAD. EXTEND WATER PUMP HOSE 50 FT. INTO BORDERING UPLANDS.
- REMOVE CUT ASPHALT AND EXCAVATE ROAD BASE MATERIAL TO EXPOSE AND REMOVE CULVERT. SOIL TO BE TEMPORARILY STOCKPILED ALONG EDGE OF TRENCH.
- WIDEN AND DEEPEN EXCAVATED TRENCH TO ACCOMMODATE NEW BOX CULVERT. BOX CULVERT WILL BE INSTALLED IN SECTIONS. INSTALL SUMPS IN TRENCH (AS NEEDED) AND SET UP DEWATERING BAG(S).
- PREPARE AND COMPACT BASE MATERIAL AND INSTALL 2 OR 3 SECTIONS OF NEW CULVERT.
- POUR STREAMBED MATERIAL INTO PLACED CULVERTS. SPREAD AND GRADE MATERIAL TO FORM BANKS AND A STREAMBED. STREAMBED MATERIAL TO BE AS SPECIFIED IN CONTRACT DOCUMENTS.
- ONCE STREAM BANK AND BED HAVE BEEN CREATED, PLACED CONCRETE TOP ON CULVERT AND BACKFILL. REPEAT STEPS 8 THROUGH 10 WITH REMAINING CULVERT SECTIONS.
- INSTALL CONCRETE WINGWALLS AND BACKFILL BEHIND WINGWALLS.
- 13. REMOVE SANDBAG DAM AND SUMP.
- 14. WHEN ENTIRE CULVERT HAS BEEN REPLACED, REPAVE TRENCH.
- 15. LOAM AND SEED SCOURED ROAD BANK AREAS AND DISTURBED WORK AREA. INSTALL NEW STEEL BEAM GUARDRAIL.
- 16. WHEN ROAD SLOPES ARE STABLE, REMOVE SILT FENCE.

### DEWATERING NOTES

- 1. INSTALL SEDIMENTATION AND EROSION CONTROLS PRIOR TO BEGINNING WORK.
- 2. ALL WORK SHALL BE CLOSELY COORDINATED WITH THE BOXFORD CONSERVATION COMMISSION OR THEIR DESIGNEE. ALL IN-STREAM WORK SHALL BE COORDINATED SO THAT CULVERT REMOVAL AND NEW CULVERT INSTALLATION BEGINS AND IS COMPLETED DURING A PERIOD OF "LOW FLOW" CONDITIONS AND IS PERFORMED IN ACCORDANCE WITH THE ORDERS OF CONDITIONS. CONTRACTOR'S WORK SCHEDULE AND VERIFICATION OF WEATHER CONDITIONS SHALL BE SUBMITTED TO THE BOXFORD DEPARTMENT OF PUBLIC WORKS FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.
- 4. DEWATERING SHALL BE USED IF NECESSARY TO ENSURE SOIL COMPACTION AND CULVERT INSTALLATION IS PERFORMED "IN THE DRY"
- 5. DIRECT DEWATERING DISCHARGE TO CROOKED POND STREAM IS PROHIBITED
- 7. THE DEWATERING BASIN SHOULD BE PLACED ON A REASONABLY LEVEL, STABLE SOIL DEWATERING EFFLUENT SHALL BE DISCHARGED INTO A WATER FILTRATION BAG SUITABLE FOR THE REQUIRED FLOW AND LOCATED WITHIN A SETTLING BASIN SURROUNDED BY SILT FENCE, AT LOCATIONS APPROVED BY THE ENGINEER.
- 8. PUMPS AND HOSES SHALL BE IN GOOD WORKING CONDITION AND OF ADEQUATE CAPACITY FOR THE REQUIRED FLOW.
- 9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO COMMENCING DEWATERING OPERATIONS.

## STREAMBED NOTES

EXISTING STREAMBED MATERIAL SHALL BE EXCAVATED AND STOCKPILED FOR REUSE.
 STREAMBED AGGREGATE MATERIAL, SHAPE AND GRADATION SHALL BE AS SPECIFIED IN THE CONTRACT SPECIFICATIONS. IT IS THE INTENT TO GRADE THE STREAMBED WITHIN THE CULVERT TO APPROXIMATE UPSTREAM CHANNEL BOTTOM WIDTHS AND BANKS.

PREPARED FOR:
TOWN OF BOXFORD DEPARMENT
OF PUBLIC WORKS

234 Park Street • North Reading, MA 01864 • 978-664-8141 MICHAEL O'NEILL, P.E. Professional Consulting Engineer

CROOKED BOXFORD, MASSACHUSETTS NOTICE POND STREAM CROSSING MIDDLETON ROAD 유 INTENT

DECEMBER 2, 2015

SHEET 2 OF 2