

**ELEVATION DATUM**  
 DATUM: NAVD 1988      B.M. NO. 1

- SURVEY PLAN REFERENCES**
- "PLAN OF LAND" SURVEYED FOR JAMES J. ORDILE & FRANK ORDILE, JR. BY SZOC SURVEYORS. DATED NOVEMBER 1989. WORCESTER DISTRICT REGISTRY OF DEEDS PLAN BOOK 633, PLAN 19.
  - "PLAN OF LAND" PREPARED FOR ELIZABETH A. ORDILE BY EDMOND J. BOUCHER. DATED OCTOBER 2006. JOB NO. G-569A WORCESTER DISTRICT REGISTRY OF DEEDS PLAN BOOK 835, PLAN 4.
  - "PLAN OF LAND" PREPARED FOR ELIZABETH A. ORDILE BY EDMOND J. BOUCHER. DATED FEBRUARY 2006. JOB NO. G-569B WORCESTER DISTRICT REGISTRY OF DEEDS PLAN BOOK 840, PLAN 68.

**ASSESSORS REFERENCE:**  
 ASSESSORS MAP SHEET 1, PARCEL 0-64, LOT 0, 48.7 ACRES

- EXISTING CONDITIONS NOTES:**
- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC AND BOUNDARY SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DATED AUGUST 2021 THROUGH JANUARY 2022.
  - EDGE OF WETLAND DELINEATED BY MATTHEW S. MARRO ENVIRONMENTAL CONSULTING, INC. DATED NOVEMBER & DECEMBER 2021, SURVEY LOCATED BY GPR, INC.

**DRAWING ISSUED FOR:**

CONCEPT     CONSTRUCTION  
 PERMIT        CONSTRUCTION RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

**NICHOLAS M. PAULING**  
 CIVIL ENGINEER  
 No. 47114  
 REGISTERED PROFESSIONAL ENGINEER  
 5/25/2022

NO.	DATE	BY	APP.	REVISION DESCRIPTION

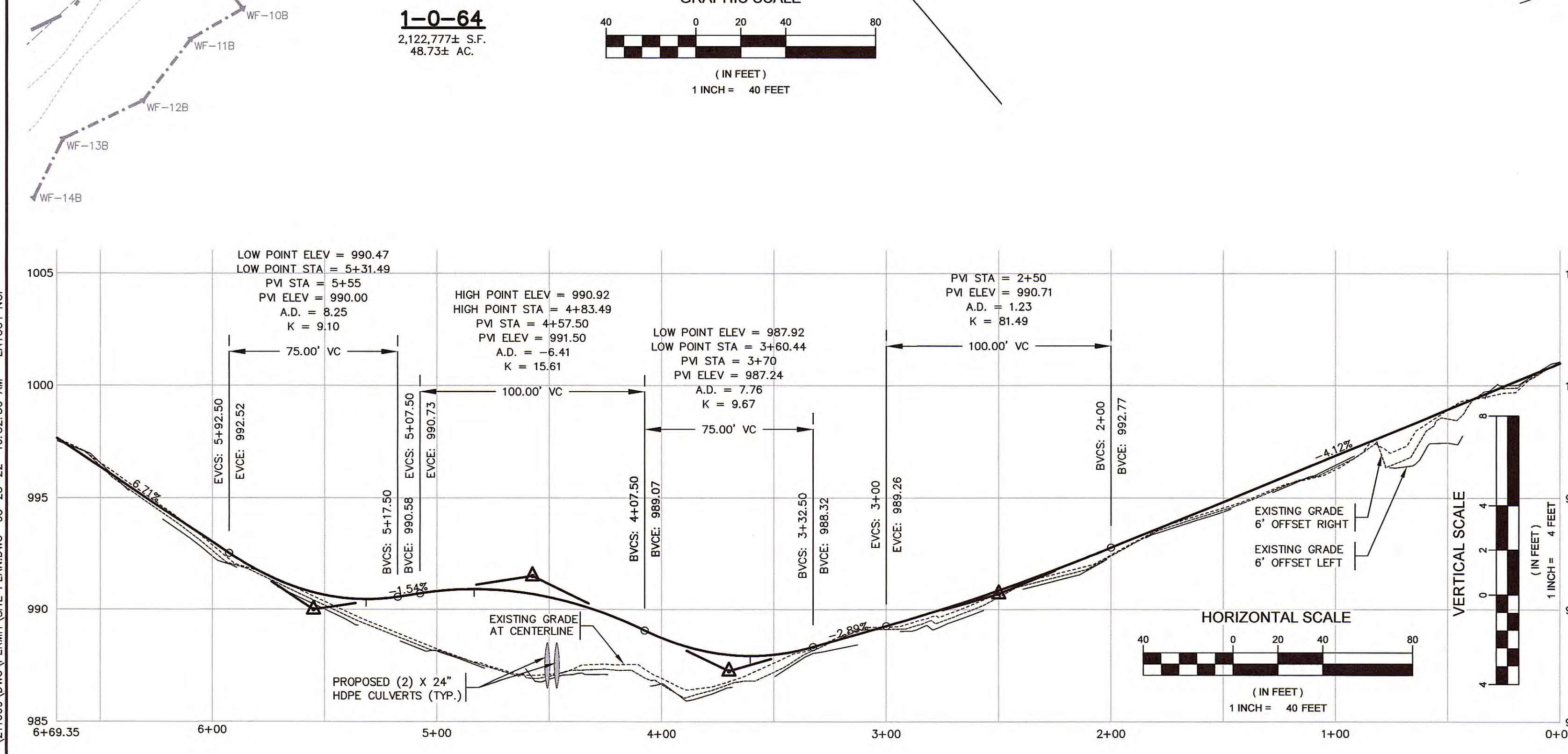
**GPR** Engineering Solutions for Land & Structures

**GOLDSMITH, PREST & RINGWALL, INC.**  
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 CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING  
 VOICE: 978.772.1590 FAX: 978.772.1591  
 www.gpr-inc.com

**RESIDENTIAL DEVELOPMENT ACCESS NOTICE OF INTENT**  
**ACCESS DRIVEWAY PLAN**

**NORTH ROYALSTON ROAD WINCHENDON, MA**

PREPARED FOR:  
 RYAN HAMILTON  
 37 PINEWOOD ROAD  
 BOLTON, MA 01740



**PLOT PLAN**  
 SCALE: 1" = 200'

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**RESOURCE IMPACT MAP LEGEND**

- WETLAND ALTERATION
- PROPOSED ACCESS DRIVE
- 0'-100' WETLAND BUFFER ALTERATION

**BUFFER IMPACT SUMMARY**

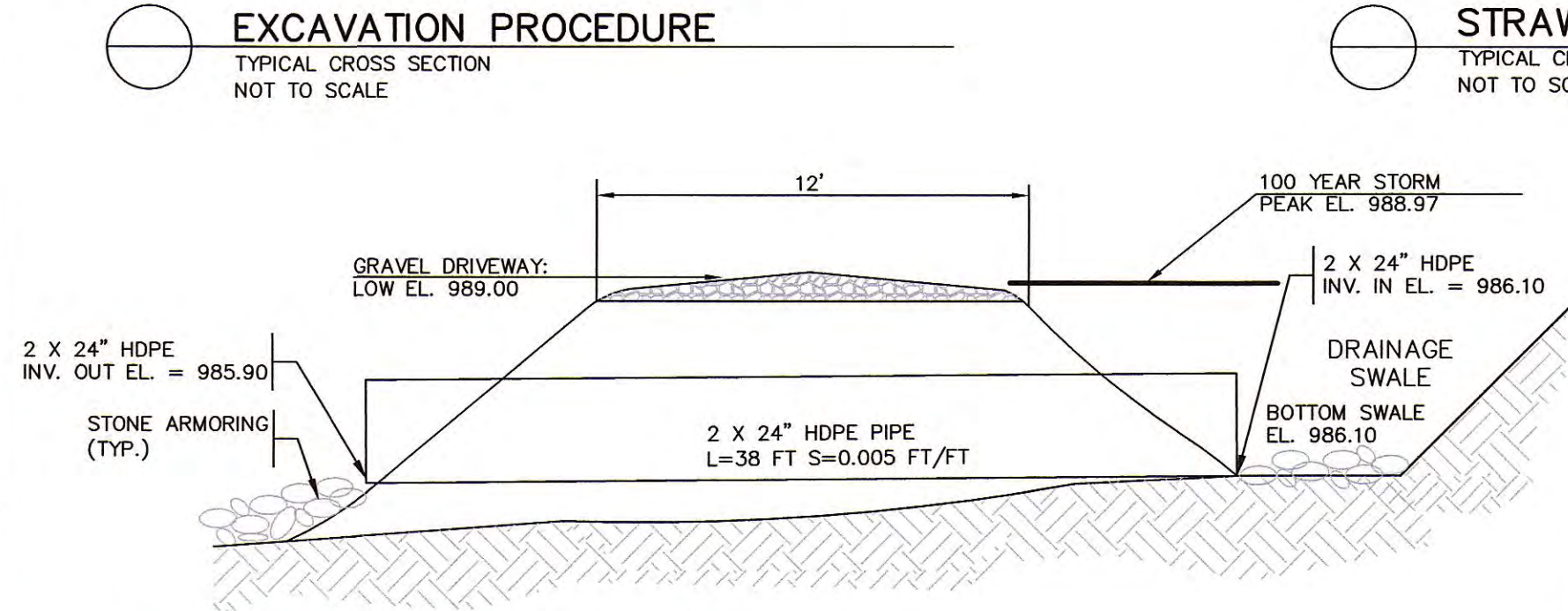
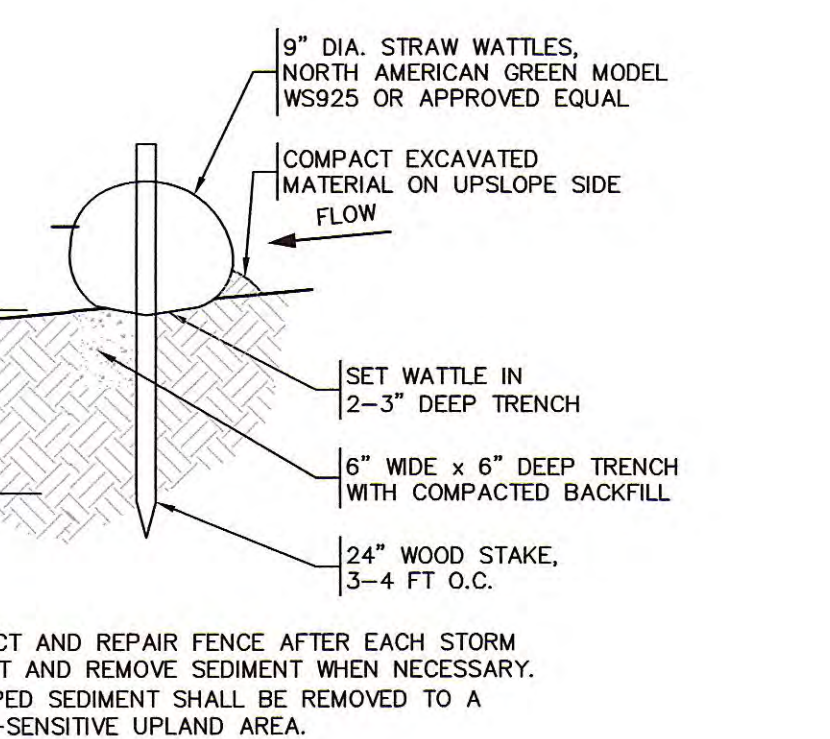
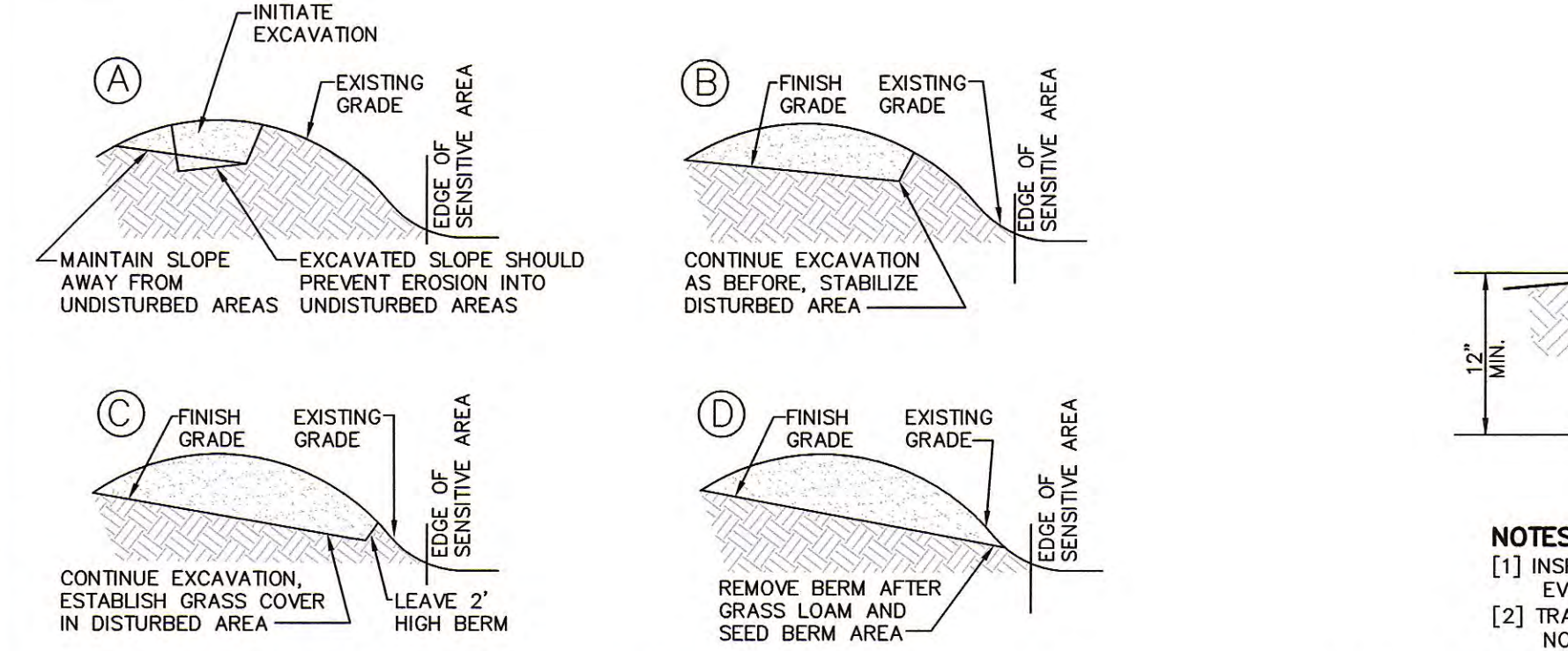
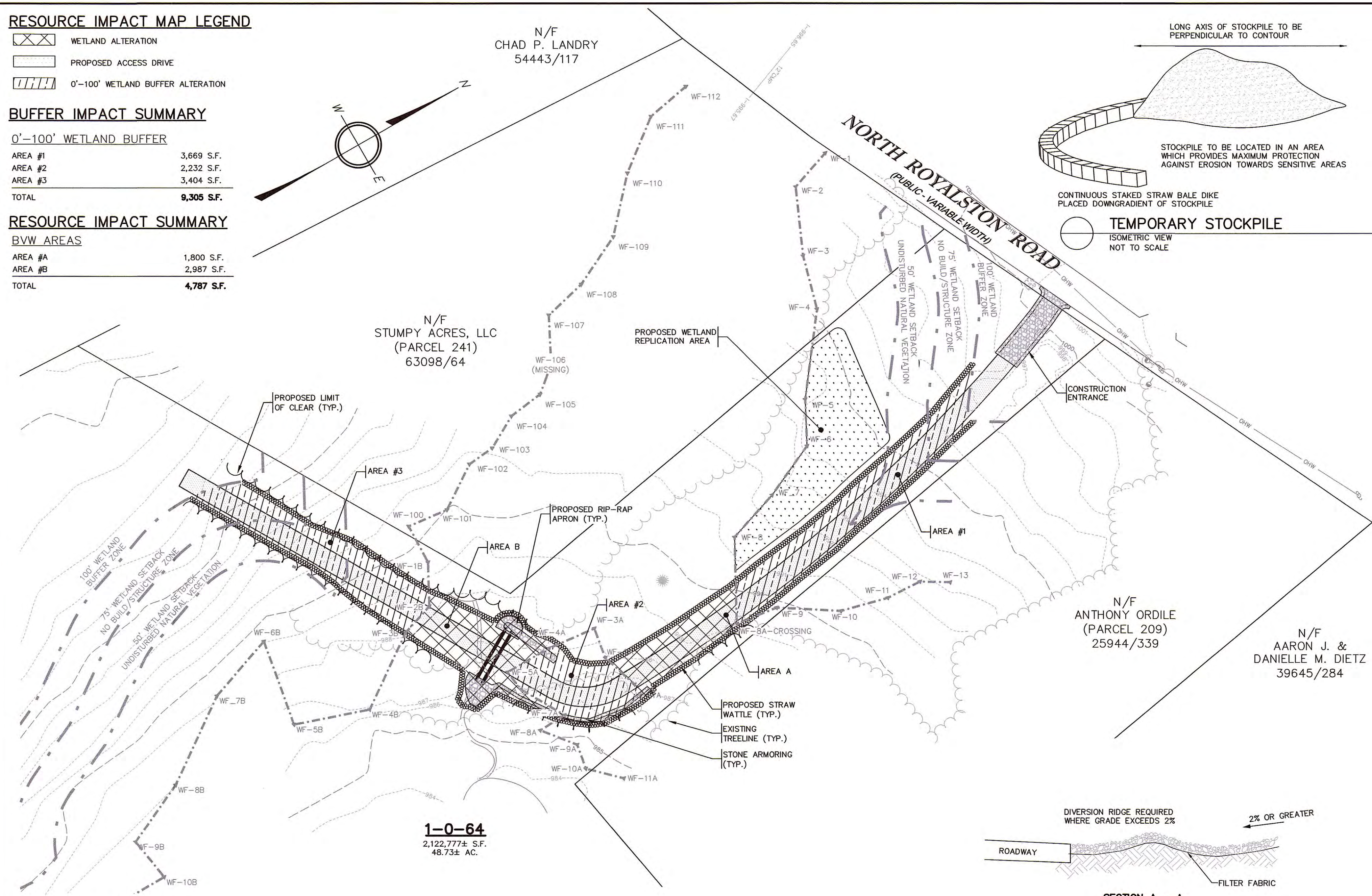
0'-100' WETLAND BUFFER

AREA #1	3,669 S.F.
AREA #2	2,232 S.F.
AREA #3	3,404 S.F.
<b>TOTAL</b>	<b>9,305 S.F.</b>

**RESOURCE IMPACT SUMMARY**

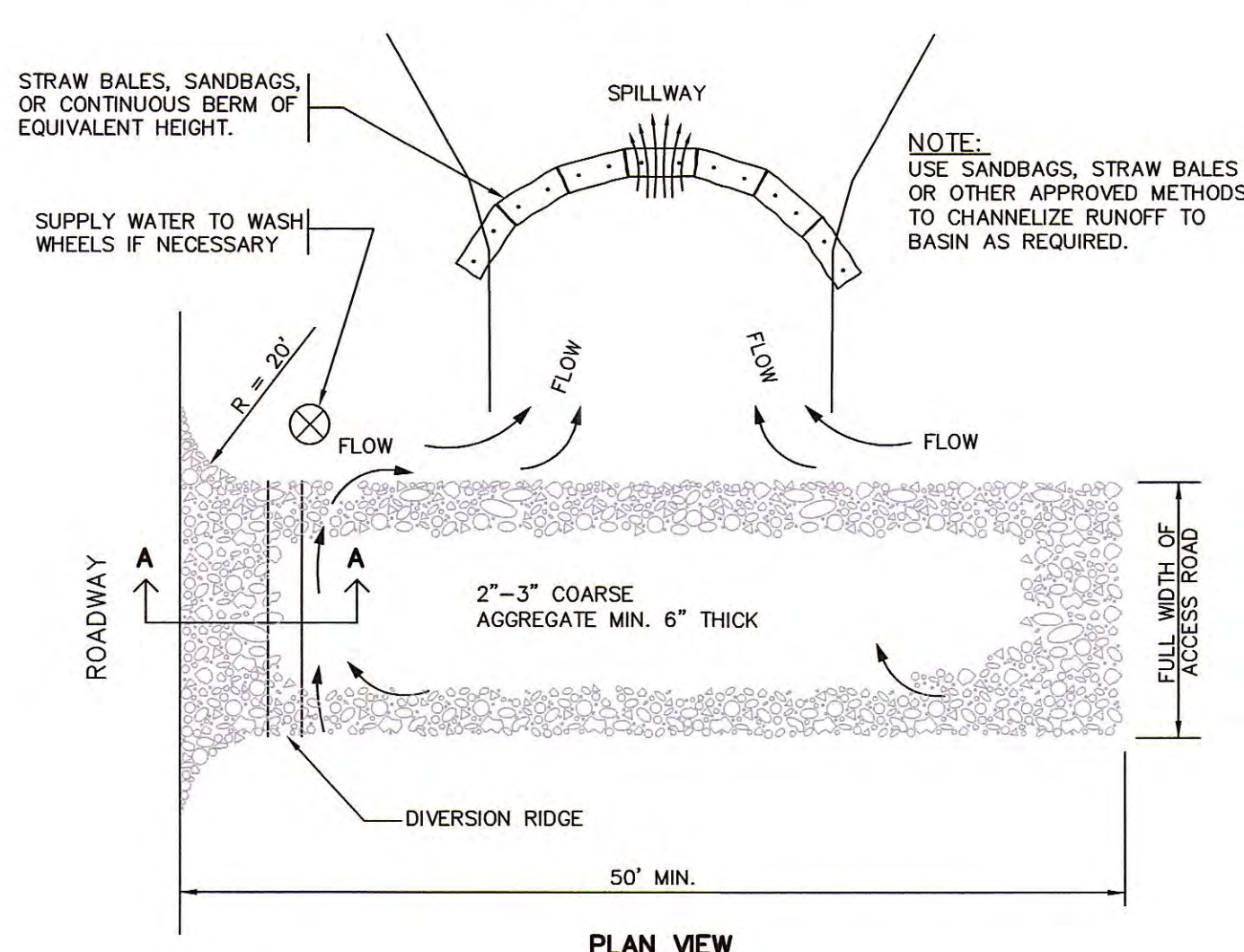
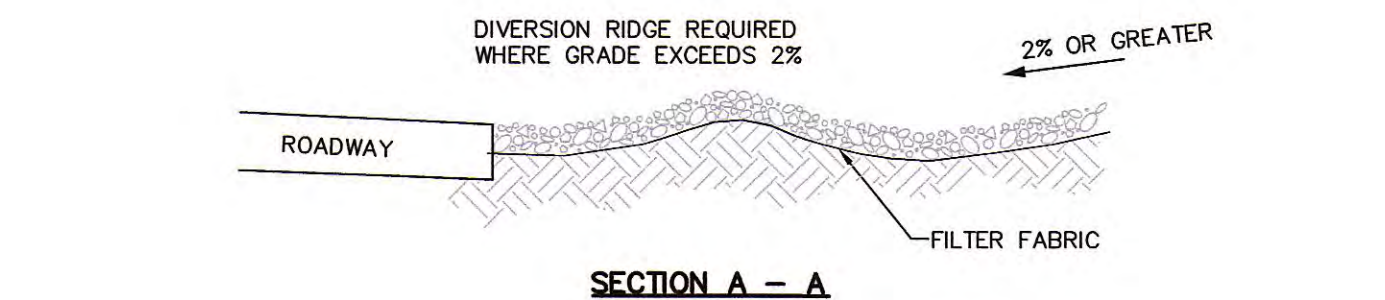
BVW AREAS

AREA #A	1,800 S.F.
AREA #B	2,987 S.F.
<b>TOTAL</b>	<b>4,787 S.F.</b>



**DUAL 24" HDPE CULVERTS HYDROLOGICAL STORM EVENTS**

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	5.94	5.94	987.32	400
10-Year	14.40	14.32	987.89	808
25-Year	19.46	19.62	988.21	821
100-Year	28.78	28.98	988.97	821



**NOTES:**

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

**EROSION AND SEDIMENT CONTROL REQUIREMENTS**

**PART 1 - GENERAL**

- 1.01 SUMMARY**
  - A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, HAY BALE AND SILT FENCE BARRIERS, RIPRAP, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERMITTENT AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.
  - 1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF CONTROL MEASURES REQUIRED TO COMMENCE WORK. THESE CONTROL MEASURES WILL BE REQUIRED ONLY FOR VEGETATION CLEARING. THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
  - 2. DEVISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
  - 3. DEVISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST EFFECTIVE MANNER.
  - 4. DEVISE, EMPLOY AND MAINTAIN CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.
  - 5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.
- 1.02 SUBMITTALS**
  - A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.
- 1.03 QUALITY ASSURANCE**
  - A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  - B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, BOARD OF SELECTMEN, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT, ENVIRONMENTAL PROTECTION AGENCY. WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

**PART 2 - PRODUCTS**

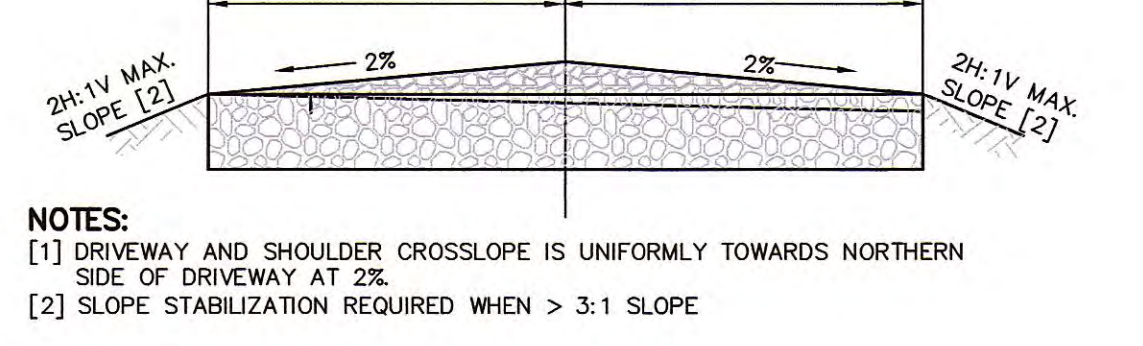
- 2.01 MATERIALS**
  - A. STRAW WATTLES: DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE.
  - B. SILT FENCE: NON-WOVEN, UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 GPM/FSF MINIMUM, GRAB TENSILE RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.
  - C. MULCH: ORGANICS INCLUDING PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.
  - D. SEED MIXES: PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS, AND / OR FINE FESCUE, DISEASE RESISTANT. NON-MAINTAINED AREA OPTION - ANNUAL RYEGRASS COMBINED WITH MEDIUM RED CLOVER.
  - E. EXCELSIOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX. BOX OF FIBERS 6-INCHES LONG OR LONGER, WEIGHT 0.975 POUNDS / SY, CONTAINING NO CHEMICAL ADDITIVES. USE CUREX I BLANKET BY AMERICAN EXCELSIOR COMPANY, OR APPROVED EQUAL.
  - F. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TALLINGS.
  - G. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE.

**PART 3 - EXECUTION**

- 3.01 THROUGHOUT CONSTRUCTION**
  - A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.
  - B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE STRAW WATTLES, SILT FENCE AND STAKES, AND CRUSHED STONE.
  - C. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION; BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT; BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.
  - D. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.
  - E. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.
  - F. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A. IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.
  - G. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.
  - H. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.
  - I. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS.

**3.02 SITE PREPARATION AND ACCESS**

- 3.02 SITE PREPARATION AND ACCESS**
  - A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
  - B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.
  - C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.



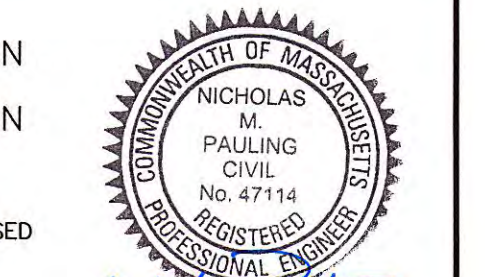
**NOTES:**

- DRIVEWAY AND SHOULDER CROSLSLOPE IS UNIFORMLY TOWARDS NORTHERN SIDE OF DRIVEWAY AT 2%.
- SLOPE STABILIZATION REQUIRED WHEN > 3:1 SLOPE

- 3.03 CLEARING, GRUBBING, AND STRIPPING**
  - A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE. DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.
  - B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE.
  - C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.
  - D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.
- 3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES**
  - A. DEVISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SLUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.
  - B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.
  - C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.
  - D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF.
  - E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.
- 3.05 SITE GRADING**
  - A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
  - B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE OR BEARING CAPACITY. REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.
- 3.06 STORMWATER MANAGEMENT SYSTEM**
  - A. THE STORMWATER MANAGEMENT SYSTEM INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, ALL PERMANENT DETENTION / RETENTION BASINS, DISCHARGE STRUCTURES / WEIRS, CULVERTS, OPEN CHANNELS, CURBS, GUTTERS, PAVED SWALES, CATCH BASINS, DRAIN MANHOLES, DRAINAGE PIPES, ROOF DRAIN MANIFOLDS, WATER QUALITY SWALES, SEPARATORS, AND SIMILAR STORMWATER RUNOFF CONVEYANCE, TREATMENT, AND STORAGE FACILITIES.
  - B. INSTALL STORMWATER MANAGEMENT SYSTEM COMPONENTS STARTING AT THE DOWNSTREAM END AND PROCEED UPSTREAM, WHERE POSSIBLE, COMPLETE INSTALLATION OF PERMANENT DETENTION / RETENTION BASINS PRIOR TO BEGINNING WORK ON UPSTREAM SYSTEM COMPONENTS.
  - C. INSTALL CONTROL MEASURES AT FINISHED UPSTREAM AND DOWNSTREAM PIPE ENDS AS SOON AS POSSIBLE AFTER COMPLETION OF PIPE RUN. SUCH MEASURES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, RIPRAP, CHECK DAMS, HAY BALE / SILT FENCE BARRIERS, AND VELOCITY DISSIPATORS.
  - D. AT THE END OF EACH DAY OR WHEN RAINFALL IS EXPECTED, PLUG UPSTREAM END OF PIPES / DAM OPEN CHANNELS OR OTHERWISE REDIRECT POTENTIAL RUNOFF AND PREVENT FLOW FROM ENTERING PARTIALLY COMPLETED SYSTEM / SYSTEM COMPONENTS.
  - E. WHERE PORTIONS OF A NEW SYSTEM ARE TO BE ACTIVATED PRIOR TO COMPLETION OF THE ENTIRE SYSTEM, EMPLOY CONTROL MEASURES TO PREVENT SILT AND DEBRIS FROM ENTERING THE SYSTEM. EMPLOY SILT SACKS OR FABRIC ON CATCH BASIN INLETS, AND PIPE AND CULVERT OPENINGS. EMPLOY CHECK DAMS AND TEMPORARY SEDIMENT BASINS UPSTREAM OF AND ALONG OPEN CHANNELS, SWALES, AND DITCHES TO TRAP SEDIMENT UPGRADIENT OF ENVIRONMENTALLY SENSITIVE AREAS.
  - F. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM ALL SYSTEM COMPONENTS AFTER COMPLETION OF INSTALLATION, AND AGAIN AFTER THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM DETENTION / RETENTION BASIN BOTTOMS SO THAT FINISH BOTTOM MATERIALS / INFILTRATION FUNCTION CONFORM TO DESIGN.
- 3.07 LANDSCAPING**
  - A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
  - B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.

**DRAWING ISSUED FOR:**

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NO.	DATE	BY	APP.	REVISION DESCRIPTION

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**RESIDENTIAL DEVELOPMENT ACCESS NOTICE OF INTENT**

**STORM WATER POLLUTION PREVENTION PLAN**

**NORTH ROYALSTON ROAD WINCHENDON, MA**

PREPARED FOR:  
RYAN HAMILTON  
37 PINWOOD ROAD  
BOLTON, MA 01740

DES. BY: JFB	DATE: MAY 2022	JOB 211069	2 OF 3
CHK. BY: NMP			

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# WETLAND REPLICATION PROCEDURE

## PART 1 GENERAL

### 1.01 EXTENT OF WORK

- THE WORK INCLUDES THE FURNISHING OF ALL PLANT, LABOR, EQUIPMENT, MATERIALS AND REQUIRED PROFESSIONAL SERVICES IN CONNECTION WITH THE PROTECTION, REPLICATION AND PROVISION OF SPECIFIC MITIGATION AND ENHANCEMENT MEASURES TO MINIMIZE AND COMPENSATE FOR IMPACTS TO WETLANDS.
- IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT TO RETAIN A BOTANIST, BIOLOGIST, WETLAND SCIENTIST OR OTHER INDIVIDUAL WITH QUALIFICATIONS AND A MINIMUM OF FIVE YEARS EXPERIENCE IN SIMILAR WETLAND REPLICATIONS, AND THOROUGHLY VERSED IN THE COMMONWEALTH OF MASSACHUSETTS WETLANDS PROTECTION ACT (MGL CHAPTER 131, SECTION 40) AND ALL OTHER RELEVANT REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. THIS INDIVIDUAL, HEREIN REFERRED TO AS "BOTANIST", SHALL BE APPROVED BY THE TOWN OF WINCHENDON CONSERVATION COMMISSION.

## PART 2 EXECUTION

### 2.01 GENERAL

- THE APPLICANT SHALL PLAN AND EXECUTE OPERATIONS IN A MANNER MINIMIZING THE AMOUNT OF EXCAVATED AND EXPOSED FILL, OR OTHER FOREIGN MATERIALS THAT MAY BE WASHED OR OTHERWISE CARRIED INTO THE REPLICATION AREAS.

### 2.02 EROSION/SEDIMENTATION CONTROL

- THE APPLICANT SHALL INSTALL STRAW WATTLES AND/OR SILTATION FENCING AND UTILIZE EROSION/SEDIMENTATION CONTROL METHODS PRIOR TO THE COMMENCEMENT OF ANY WORK.

### 2.03 REPLICATION AREA PREPARATION

- THE REPLICATION AREAS ARE TO BE CONSTRUCTED AFTER ALL CONTRIBUTING UPLAND DRAINAGE AREAS ARE BROUGHT UP FINISHED GRADE AND STABILIZED. THIS WETLAND REPLICATION SHALL BE PERFORMED UNDER THE DIRECTION AND GUIDANCE OF A QUALIFIED BOTANIST AND AS SPECIFIED HEREIN.
- THE REPLICATION AREAS SHALL HAVE FINISHED GRADES WHICH MEET THE EXISTING GRADES IN THE ADJACENT WETLAND AS SHOWN ON THE GRADING PLAN.
- BEFORE PLANTING THE REPLICATION AREAS, THE APPLICANT SHALL REMOVE ALL TREES, SHRUBS, STUMPS, AND SOIL FROM THE REPLICATION AREAS. THESE ARE NOT TO BE STOCKPILED IN THE RESOURCE AREAS OR BUFFER ZONES WHILE AWAITING DISPOSAL.
- DURING THE REMOVAL OF THE TREES, SHRUBS, STUMPS AND SOIL, SOME OF THE SOILS (WITHIN THE REPLICATION AREAS) WILL LIKELY BE REMOVED DURING THE PROCESS. ADDITIONAL WETLAND SOILS SHALL BE PROVIDED IN QUANTITIES SUFFICIENT TO ESTABLISH GRADES AS SHOWN ON THIS PLAN. THE REPLACEMENT SOIL SHALL BE PURCHASED BY THE APPLICANT AT A 1:1 MIX OF LOAM TO PEAT.
  - THE REPLICATION AREAS SHALL BE EXCAVATED TO A DEPTH OF 8 TO 12 INCHES BELOW PROPOSED FINISH GRADES. THE REPLICATION AREAS ARE TO THEN BE BACKFILLED WITH A 1:1 MIXTURE OF LOAM TO PEAT.
  - THE WETLAND SOILS SHALL BE DEPOSITED IN THE REPLICATION AREAS IN A MANNER MINIMIZING TRAVEL AND SUBSEQUENT COMPACTION OF THE UNDERLYING MATERIAL AND REPLACEMENT WETLAND SOIL.
  - THE REPLICATION AREAS SHALL NOT HAVE FINISHED GRADING WHICH RESULTS IN A COMPLETELY FLAT TOPOGRAPHY. THE FINISH GRADING SHOULD RESULT IN A SHALLOW PIT AND MOUND TOPOGRAPHY THROUGHOUT THE REPLICATION AREAS.
- ALL FILL MUST BE STOCKPILED WITH APPROPRIATE EROSION AND SEDIMENTATION CONTROLS. PRECAUTIONS SHALL BE TAKEN AS NECESSARY TO PREVENT EROSION OF THE STOCKPILED MATERIAL. BEFORE FILL IS PUT INTO PLACE, ALL TREES, BRUSH AND STUMPS SHALL BE REMOVED FROM THE AREAS TO BE FILLED.
- THE FINISHED GRADES MUST BE WITHIN TWELVE INCHES FROM THE GROUNDWATER TABLE.
- ANY SIGNIFICANT FIELD CHANGES DEEMED NECESSARY TO ACHIEVE FINAL GRADING WITHIN TWELVE INCHES FROM THE GROUNDWATER TABLE, MUST BE APPROVED BY THE BOTANIST (IN THE FIELD) AND REPORTED TO THE CONSERVATION COMMISSION IN THE WEEKLY REPORT.
- THE OUTER EDGES OF THE REPLICATION AREAS SHALL BE BERMED TO PREVENT WATER DRAINING FROM THE REPLICATION AREAS.
- UPON COMPLETION OF THE REPLICATION AREAS, SILTATION FENCE SHALL BE PLACED AROUND THE ENTIRE PERIMETER (OF THE REPLICATION AREAS) TO PROTECT THE REPLICATION AREAS DURING THE ESTABLISHMENT OF REPLICATION AREA GROWTH.
- AFTER REPLICATION CONSTRUCTION IS COMPLETED, NO FERTILIZER, LIMESTONE, SUPERPHOSPHATE, MULCH OR OTHER AMENDMENTS SHALL BE ADDED TO THE WETLAND SOILS.

## PART 3 REMOVING, STORING, AND REPLANTING OF EXISTING WETLAND SOIL, TREES AND SHRUBS

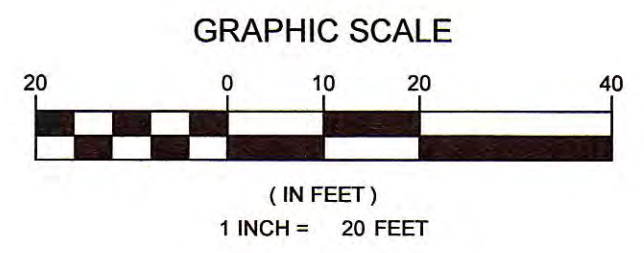
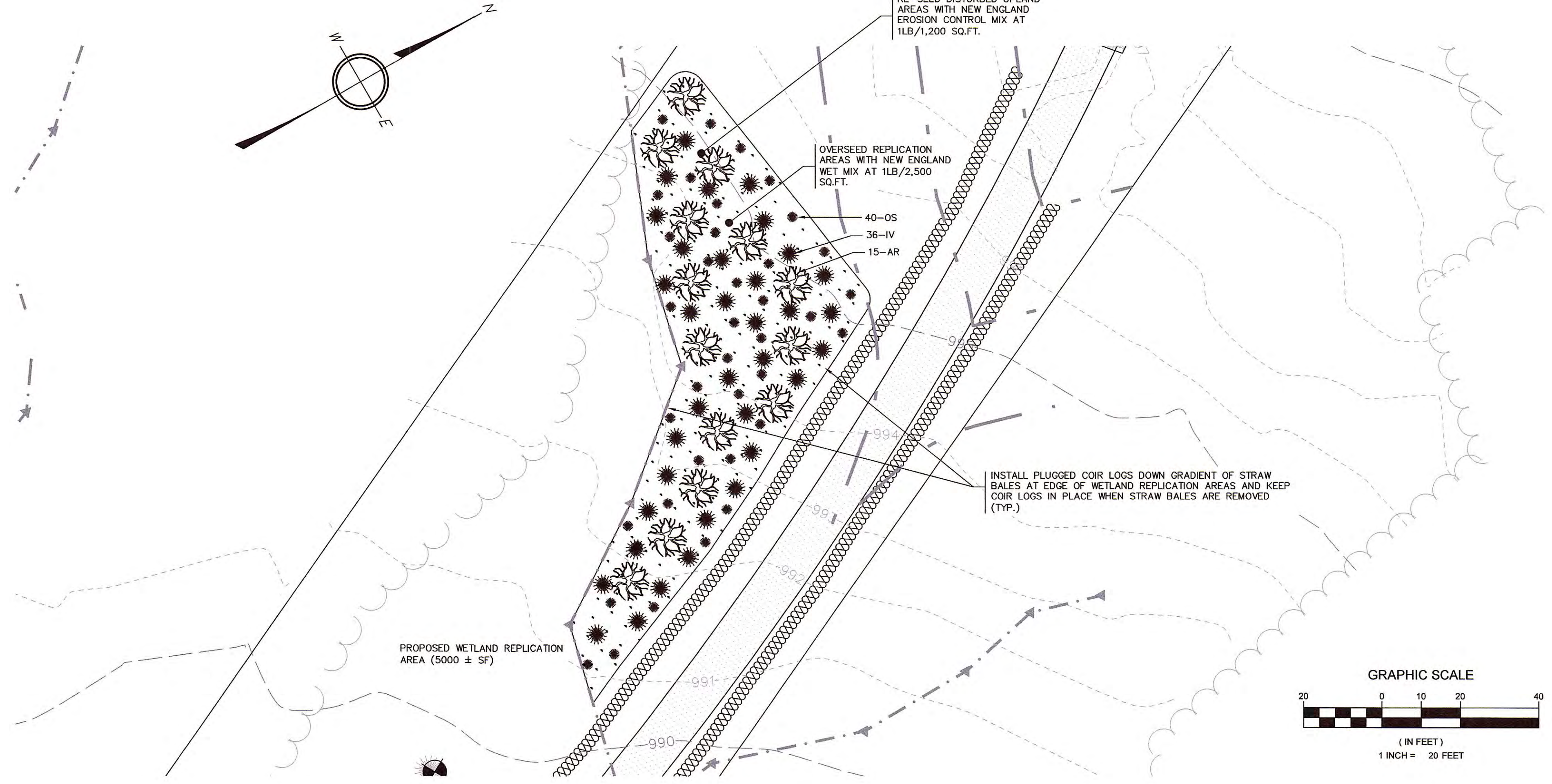
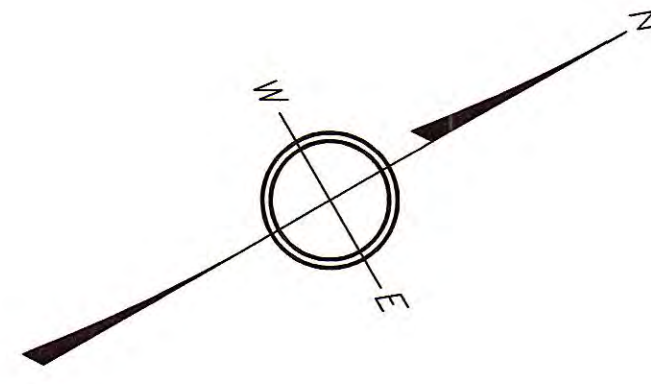
- IN ANY FILLED WETLAND AREA (WHERE PRACTICAL), THE APPLICANT MAY, AT HIS OPTION, DIG UP, STORE AND MAINTAIN EXISTING WETLAND SOILS, TREES AND SHRUBS FOR USE IN THE REPLICATION AREAS. TREES SHALL BE A MINIMUM OF ONE INCH CALIPER AND SHRUBS SHALL BE THIRTY SIX INCHES IN SPREAD OR HEIGHT. ALL PLANTS SHALL BE VIGOROUS AND WELL FORMED SPECIMENS. ALL PLANT MATERIALS DUG FOR THIS PURPOSE SHALL BE DUG BY HAND, HYDRAULIC TREE SPADE SPECIFICALLY DESIGNED FOR THE PURPOSE OR OTHER SUITABLE EQUIPMENT OF SUFFICIENT SIZE TO REMOVE THE ROOTBALL. ROOTBALL SIZE SHALL BE THE MINIMUM SPECIFIED BY THE AMERICAN ASSOCIATION OF NURSERYMEN FOR EACH SPECIES. FOR HAND DUG PLANTS, A SUITABLE BURLAP OR OTHER WRAP OR CONTAINER SHALL BE PROVIDED TO KEEP THE ROOTBALL INTACT.
  - ALL PLANTS DUG FOR REUSE SHALL BE IMMEDIATELY MOVED TO A PROTECTIVE STORAGE AREA APPROVED BY THE BOTANIST. PLANTS SHALL BE SET PLUMB ON GRADE OR IN PREPARED HOLES AND GUYED AS NECESSARY. THE AREA OR HOLES SHALL BE BACKFILLED WITH SUITABLE TOPSOIL TO COVER THE ROOTBALLS ENTIRELY MULCHED TO PREVENT EROSION. ALL STORED VEGETATION SHALL BE MAINTAINED IN A DAMP CONDITION BY REGULAR WATERING. ALL HORTICULTURAL MEASURES REQUIRED FOR THE SURVIVAL OF COLLECTED PLANTINGS SHALL BE UTILIZED BY THE APPLICANT.
  - AFTER THE REPLICATION AREAS HAVE BEEN CONSTRUCTED, STOCKPILED PLANTS SHALL BE REPLANTED IN LOCATIONS SPECIFIED AND APPROVED BY THE BOTANIST.

## PART 4 WETLAND REPLICATION PLANTING

- WETLAND PLANTING SHALL BE PERFORMED BETWEEN MARCH 1 AND OCTOBER 15 OR AS RECOMMENDED BY THE BOTANIST.
- WETLAND PLANTINGS SHALL CONSIST OF A MINIMUM OF 15 TREES PLANTED NO FARTHER APART THAN FIFTY FEET ON CENTER AND A MINIMUM OF THIRTY SIX (36) SHRUBS PLANTED NO FARTHER APART THAN TEN FEET ON CENTER.
  - THE TREE LAYER WILL BE COMPRISED OF FIFTEEN (15) RED MAPLES (ACER RUBRUM).
  - SHRUBS SHALL CONSIST OF TWELVE (12) WINTERBERRY (ILEX VERTICILLATA).
  - HERBACIOUS PLANTS SHALL BE COMPRISED OF THIRTY SIX (36) SENSITIVE FERNS (ONOCLEA SENSIBILIS).
- THE APPLICANT SHALL HAVE THE OPTION OF DIGGING, STORING AND REPLANTING EXISTING TREES AND SHRUBS PER PART 3 OF THIS SCHEDULE, OR ALTERNATIVELY, PROVIDING AND PLANTING NEW WETLAND SPECIES, PURCHASED BY THE APPLICANT FROM NURSERY STOCK, AND APPROVED BY THE BOTANIST.
- WETLAND PLANTING IN THE REPLICATION AREAS, SHALL BE PERFORMED IN A MANNER WHICH REPRODUCES THE PLACEMENT AND PROPORTIONS OF THE PLANT SPECIES THAT WERE FOUND IN THE ORIGINAL LOST WETLAND AREAS.
- ALL WETLAND PLANTINGS SHALL BE PERFORMED BY HAND. BURLAP SHALL BE REMOVED FROM THE TOP THIRD OF THE ROOTBALLS AND ROPES, TWINE AND WIRE BASKETS SHALL BE COMPLETELY REMOVED FROM THE ROOTBALLS. COMPLETELY REMOVE ALL PLASTIC BURLAP, ROPE, TWINE AND WIRE BASKETS FROM THE REPLICATION AREAS. COMPLETELY REMOVE THE CONTAINERS FROM THE POTTED PLANTS WHILE KEEPING THE SOIL AROUND THE ROOTS UNBROKEN.
- AFTER PLANTINGS ARE COMPLETED, THE REPLICATION AREAS SHALL BE HAND RAKED TO ELIMINATE ANY DEPRESSIONS GREATER THAN FOUR INCHES IN DEPTH, WHICH MAY BE CREATED DURING DIGGING AND TO ELIMINATE COMPACTION OF THE SOILS AS MUCH AS POSSIBLE.
  - ONCE PLANTING IS COMPLETED, LEAVES (COLLECTED FROM UPLAND AREAS OF THE PROPOSED SITE CONSTRUCTION) SHALL BE SPREAD THROUGHOUT THE REPLICATION AREAS.
- THE INTENT OF THIS SCHEDULE IS TO INSURE THAT AT LEAST 75 PERCENT OF THE REPLICATION SURFACE AREA IS RE-ESTABLISHED WITH INDIGENOUS WETLAND PLANT SPECIES WITHIN TWO GROWING SEASONS OF THEIR PLANTING, IN ACCORDANCE WITH THE MASSACHUSETTS DEP WETLANDS PROTECTION ACT REGULATIONS. PURPLE LOOSESTRIFE (LYTHRUM SALICARIA) AND EUROPEAN BUCKTHORN (RHAMNUS FRANGULA) SHALL NOT BE PLANTED IN THE REPLICATION AREAS. IF AFTER 180 GROWING SEASON DAYS, IT IS EVIDENT IN THE OPINION OF THE BOTANIST THAT IT IS UNLIKELY THAT THE 75 PERCENT RE-ESTABLISHMENT REQUIREMENT WILL BE ACHIEVED, THE APPLICANT SHALL SUPPLEMENT THE PLANTINGS AS NECESSARY TO ACHIEVE THE REQUIRED COVERAGE. IF AFTER THE END OF TWO GROWING SEASONS, 75 PERCENT RE-ESTABLISHMENT HAS NOT BEEN ACHIEVED, THE APPLICANT SHALL PROVIDE AND PLANT HEALTHY WETLAND VEGETATION IN SUFFICIENT QUANTITIES TO ACHIEVE THE 75 PERCENT RE-ESTABLISHMENT.

## PART 5 WETLAND REPLICATION MONITORING

- THE TOWN OF WINCHENDON CONSERVATION COMMISSION SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF THE COMMENCEMENT OF THE WETLAND REPLICATION CONSTRUCTION.
- ALL CONSTRUCTION AND PLANTING SHALL BE OVERSEEN BY A QUALIFIED BOTANIST. (THE REPLICATION SHALL BE OVERSEEN BY A QUALIFIED PERSON, APPROVED IN ADVANCE BY THE COMMISSION. UPON COMPLETION OF THE REPLICATION, THE QUALIFIED PERSON SHALL SUBMIT A REPORT TO THE COMMISSION DOCUMENTING THE SPECIES OF THE PLANTINGS AND GENERALLY, SOIL CONDITIONS AND HYDROLOGY IN THE AREA.)
- A BRIEF PROGRESS REPORT WILL BE PROVIDED TO THE TOWN OF WINCHENDON CONSERVATION COMMISSION AT THE END OF EACH WEEK UNTIL CONSTRUCTION AND PLANTING OF THE REPLICATION AREAS HAVE BEEN COMPLETED. (THE REPORT SHALL INCLUDE THE SPECIES OF PLANTS IN THE REPLICATION AREAS, RELATIVE NUMBER OF EACH SPECIES, PERCENT COVERAGE, BROKEN DOWN BY UPLAND AND WETLAND SPECIES, THE VIABILITY OF THE SPECIES PRESENT IN THE AREA AND RECOMMENDED REMEDIAL ACTIONS NECESSARY TO ACHIEVE 75% COVERAGE WITH WETLAND SPECIES PLANTS.)
- FOUR REPORTS, PREPARED BY A QUALIFIED BOTANIST, SHALL BE SUBMITTED TO THE TOWN OF WINCHENDON CONSERVATION DURING THE FIRST YEAR. THESE REPORTS WILL BE SUBMITTED QUARTERLY. TWO REPORTS WILL BE PROVIDED TO THE TOWN OF WINCHENDON CONSERVATION COMMISSION ON MAY 1ST AND OCTOBER 1ST OF THE FOLLOWING YEAR.
- EACH REPORT SHALL INCLUDE AN OBSERVED SPECIES LIST, RELATIVE ABUNDANCE OF EACH SPECIES, PERCENT COVER OF UPLAND AND WETLAND SPECIES, THE VIABILITY OF THE PLANTINGS AND PROPOSED REMEDIAL MEASURES TO ENSURE 75 PERCENT RE-ESTABLISHMENT WITHIN TWO GROWING SEASONS.
- WHILE PERFORMING THE INSPECTION OF THE REPLICATION AREAS, ANY INVASIVE PLANTS SPECIES FOUND SHALL BE REMOVED. THE PLANT SPECIES, AND NUMBER OF PLANTS REMOVED, SHALL BE INCLUDED WITHIN THE MONITORING REPORTS.
- IF THE REPLICATION AREAS DO NOT ACHIEVE THE REQUIRED 75 PERCENT COVERAGE WITHIN TWO GROWING SEASONS, THEN ADDITIONAL PLANTINGS SHALL BE PROVIDED AS PER PART 4 SECTION G. THESE PLANTINGS WILL BE MONITORED FOR THE NEXT TWO GROWING SEASONS WITH REPORTS PROVIDED TO THE TOWN OF WINCHENDON CONSERVATION COMMISSION ON MAY 1ST AND OCTOBER 1ST OF EACH YEAR IN ORDER TO ENSURE THE VIABILITY OF THESE LATE PLANTINGS.



## WETLAND REPLICATION AREA

SCALE: 1" = 20'

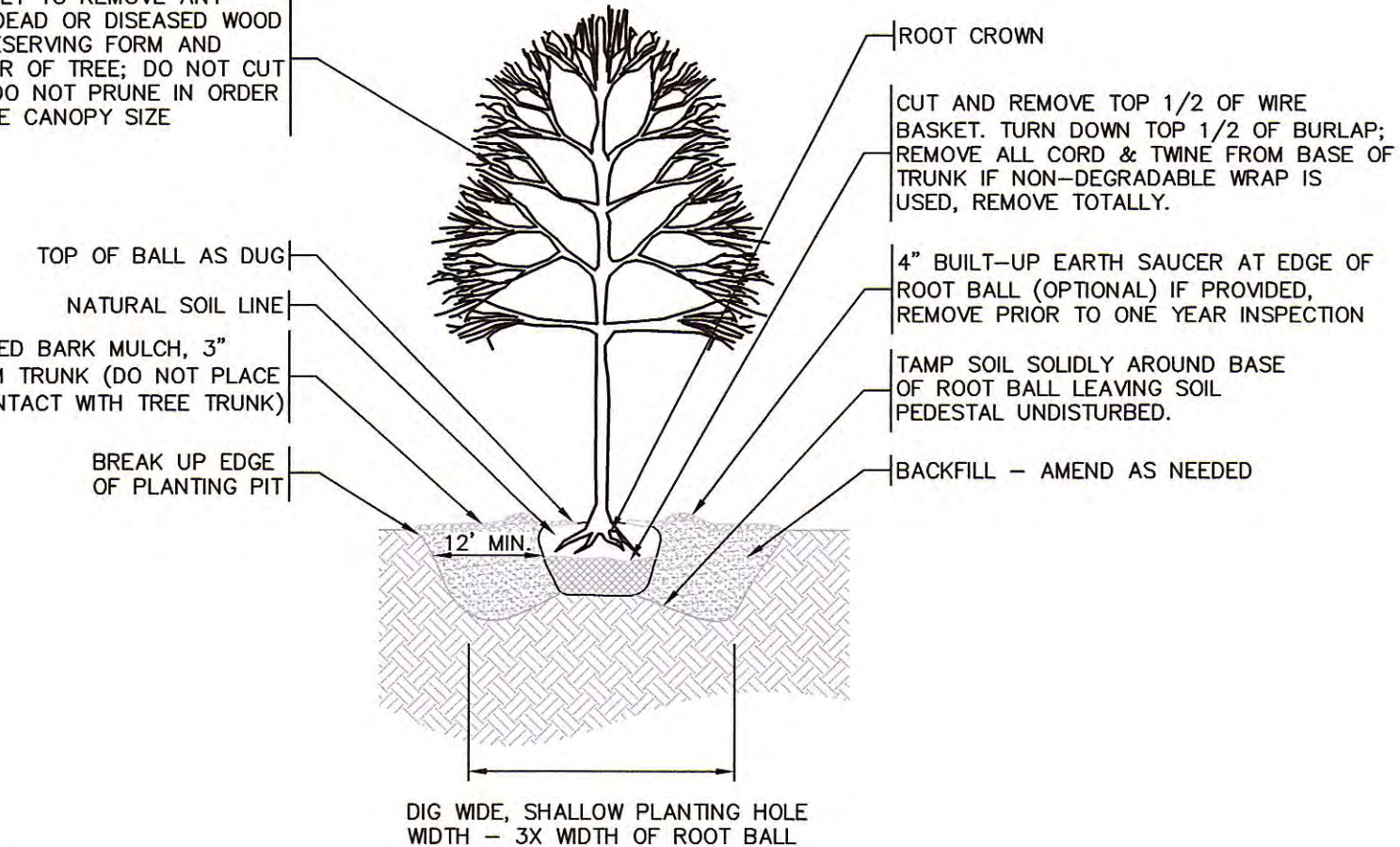
### ADDITIONAL WETLAND REPLICATION NOTES:

EXISTING SPECIES OBSERVED IN THE WETLANDS BEING DISTURBED CONSIST LARGELY OF WINTERBERRY AND ALDERS, AS WELL AS CATTAILS. THE EXISTING SOILS ARE ENTIRELY FREETOWN MUCK.

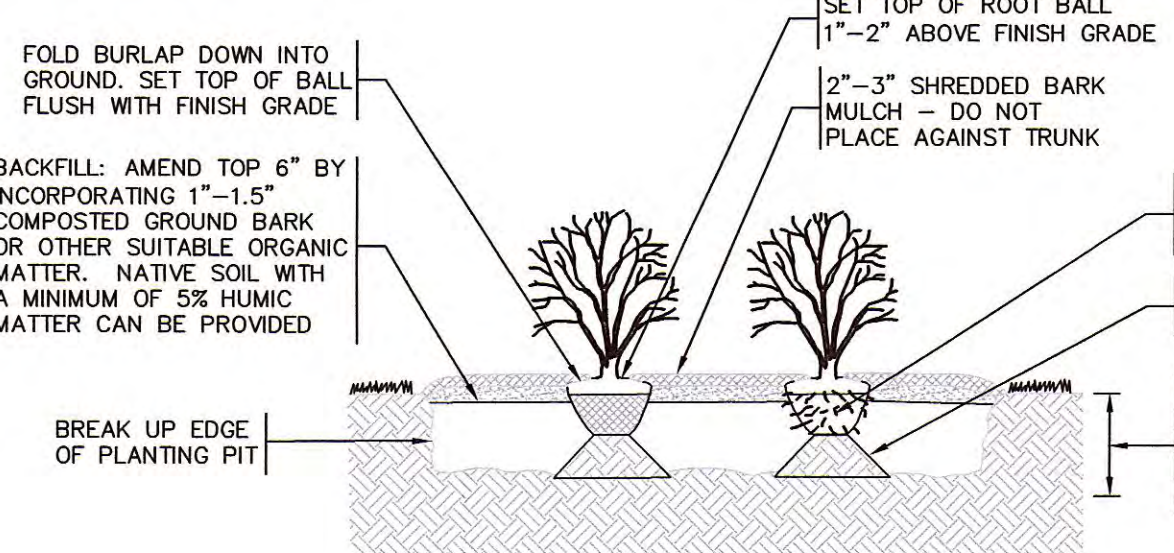
### PLANT LIST

Symbol	Botanical Name	Common Name	Size	Quantity	Condition
AR	ACER RUBRUM	RED MAPLE	6'-8" HT. 1.5"-2" CAL.	15	B & B
IV	ILEX VERTICILLATA	WINTERBERRY	2'-3" HT.	36	CONT. GROWN
OS	ONOCLEA SENSIBILIS	SENSITIVE FERN	#1 POT	40	CONT. GROWN

PRUNE ONLY TO REMOVE ANY BROKEN, DEAD OR DISEASED WOOD WHILE PRESERVING FORM AND CHARACTER OF TREE. DO NOT CUT LEADER; DO NOT PRUNE IN ORDER TO REDUCE CANOPY SIZE.



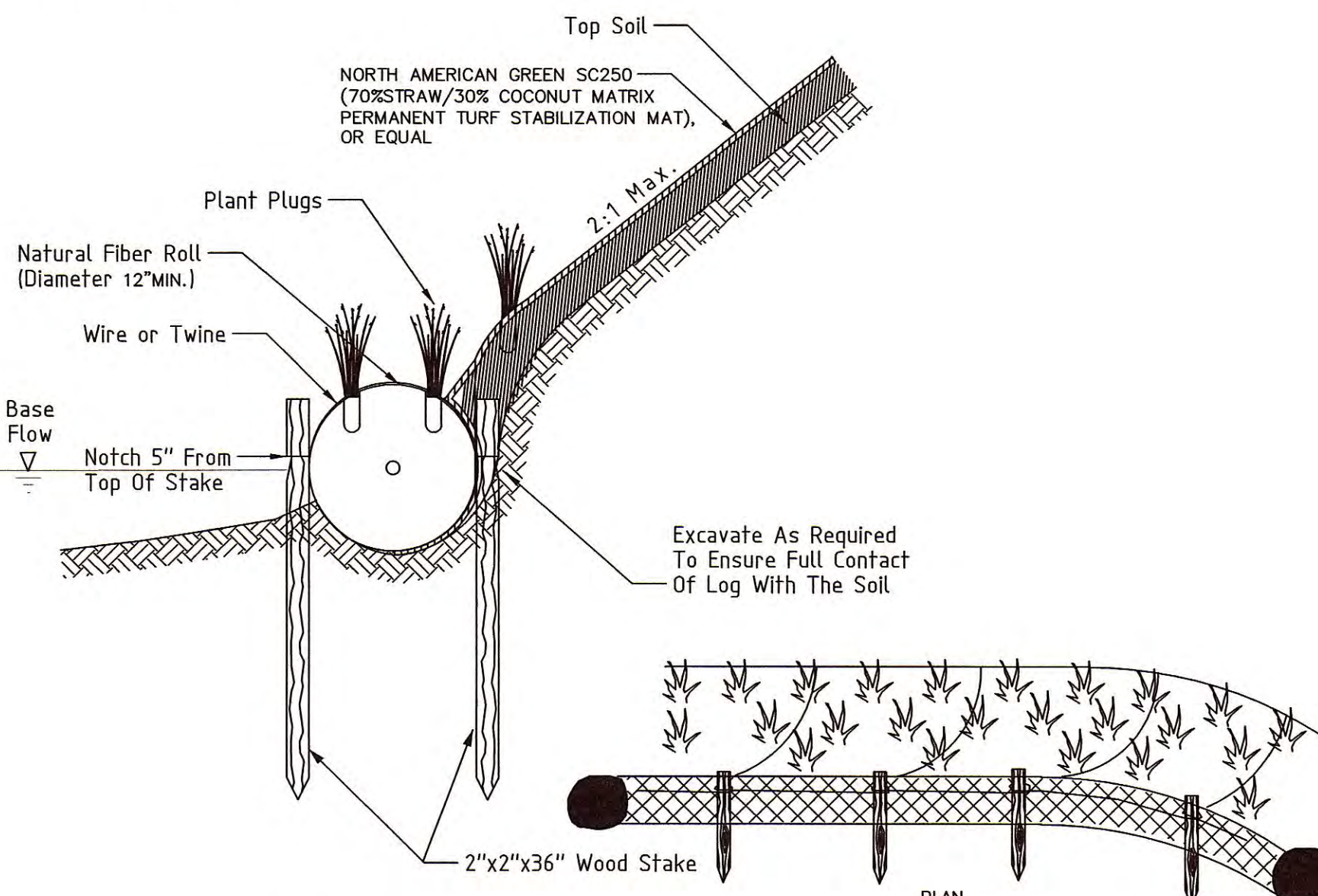
- NOTES:**
- CONTRACTOR TO VERIFY THAT ADEQUATE DRAINAGE EXISTS PRIOR TO PLANTING.
  - DO NOT WRAP TRUNK OF TREE.
  - STAKING OF TREES IS NOT RECOMMENDED, EXCEPT ON WINDY SITES OR FOR LARGE EVERGREEN TREES. IF STAKING IS DONE, FLEXIBLE STRAPS - NOT HOSE AND WIRE - SHOULD BE USED AND MUST BE REMOVED AT APPROPRIATE TIME.
  - ALL TREES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).
  - TREES WITH ROOT FLARE COVERED BY MORE THAN 1.5" OF SOIL WILL BE REJECTED PRIOR TO INSTALLATION.



- NOTES:**
- ALL SHRUBS MUST CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.)
  - SOIL ANALYSIS SHALL BE OBTAINED PRIOR TO PLANTING. SOIL SHALL BE AMENDED AS RECOMMENDED.
  - SHEET PREPARATION OF BEDS IS HIGHLY PREFERRED TO INDIVIDUALLY DUG HOLES.

## SHRUB PLANTING

NOT TO SCALE



- INSTALLATION NOTES:**
- EXCAVATE A SHALLOW (3 TO 4 INCHES DEEP) TRENCH ALONG THE TOE OF THE STREAM BANK.
  - PLACE LOG IN THE TRENCH SO THAT THE BOTTOM AND BACK ARE INTACT WITH THE STREAM SUBSTRATE AND THE STREAMBANK.
  - DRIVE STAKES DOWN ALONG THE SIDES OF THE LOG. DRIVE STAKES FLUSH WITH THE TOP OF THE COIR LOG.
  - WEAVE COIR OR NYLON TWINE BETWEEN AND AROUND THE STAKES.
  - DRIVE STAKES IN FIRMLY, SECURING THE COCONUT FIBER LOG TO THE STREAMBED.
  - STABILIZE STREAMBANK ABOVE LOG USING BANK STABILIZATION TECHNIQUE AS SPECIFIED ON PLANS.
  - PLACE 12"-18" DIA. SINGLE BOULDERS IN FRONT OF LACED JOINTS, BUT NOT PROJECTING INTO CHANNEL.

## COIR LOG REVETMENT

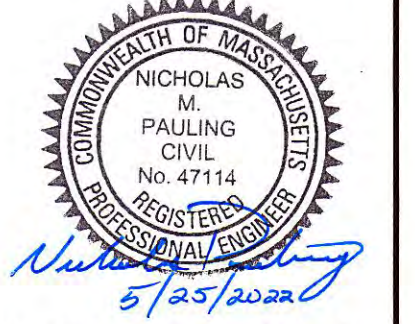
TYPICAL CROSS SECTION NOT TO SCALE

## TREE PLANTING

NOT TO SCALE

## DRAWING ISSUED FOR:

- CONCEPT  CONSTRUCTION  
 PERMIT  CONSTRUCTION RECORD



THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO.	DATE	BY	APP.	REVISION DESCRIPTION

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## RESIDENTIAL DEVELOPMENT ACCESS NOTICE OF INTENT

### WETLAND REPLICATION PLAN

NORTH ROYALSTON ROAD  
 WINCHENDON, MA

PREPARED FOR:  
 RYAN HAMILTON  
 37 PINEWOOD ROAD  
 BOLTON, MA 01740

DES. BY: JFB	DATE: MAY 2022	JOB 211069	3 OF 3
CHK. BY: NMP			

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