

March 7th, 2023

City of Auburn Planning Board 60 Court Street Auburn, Maine 04210

Dear City of Auburn Planning Board Members,

On behalf of Auburn Suburban Baseball and Softball, Jones Associates, Inc. is pleased to submit information regarding their Development Review Application for their proposed project located at Stevens Mill and Hotel Road in Auburn, Maine. This information is being submitted by request of the Planning, Permitting, and Code Department, as outlined in an email sent on February 21st, 2023, and during a remote meeting held on February 27th, 2023.

Details regarding no parking signs are now shown along Stevens Mill Road to Garfield Road. The shoulder of Stevens Mill Road has also been widened by approximately 10 feet, specifically between the road and under drained soil filter (UGF) #1, which is located between the two little league fields. A crash gate between Stevens Mill Road and the easternmost little league field has also been added to the plans.

The location of a future footpath has been added to the plans, connecting the easternmost little league field to Hotel Road. This future footpath may be subject to additional permitting.

The access road throughout the site has been widened from 18' to 20'. This increase in impervious area required UGF #2 and #4 to be expanded. The revised stormwater report and plans have been updated accordingly and attached to this letter.

Notes on site distance have been adjusted to reflect site distance for a 45 miles per hour (mph) zone. The site distance was remeasured by Bill Bray of Barton & Loguidice on March 3rd, 2023.

280 Poland Spring Road Auburn, Maine 04210 (207) 241-0235

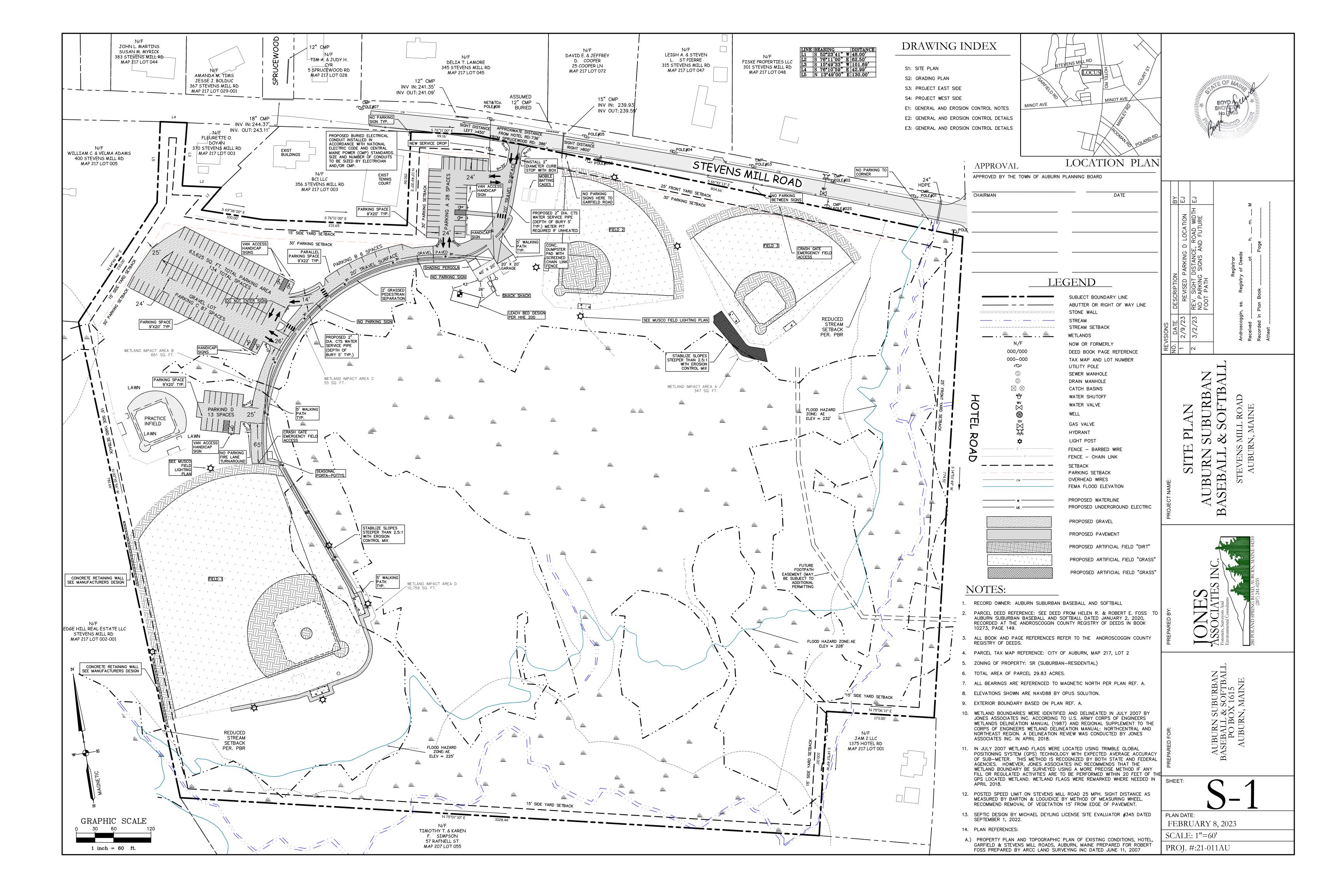
Email: <u>ejones@jonesai.com</u>
Website: <u>www.jonesai.com</u>

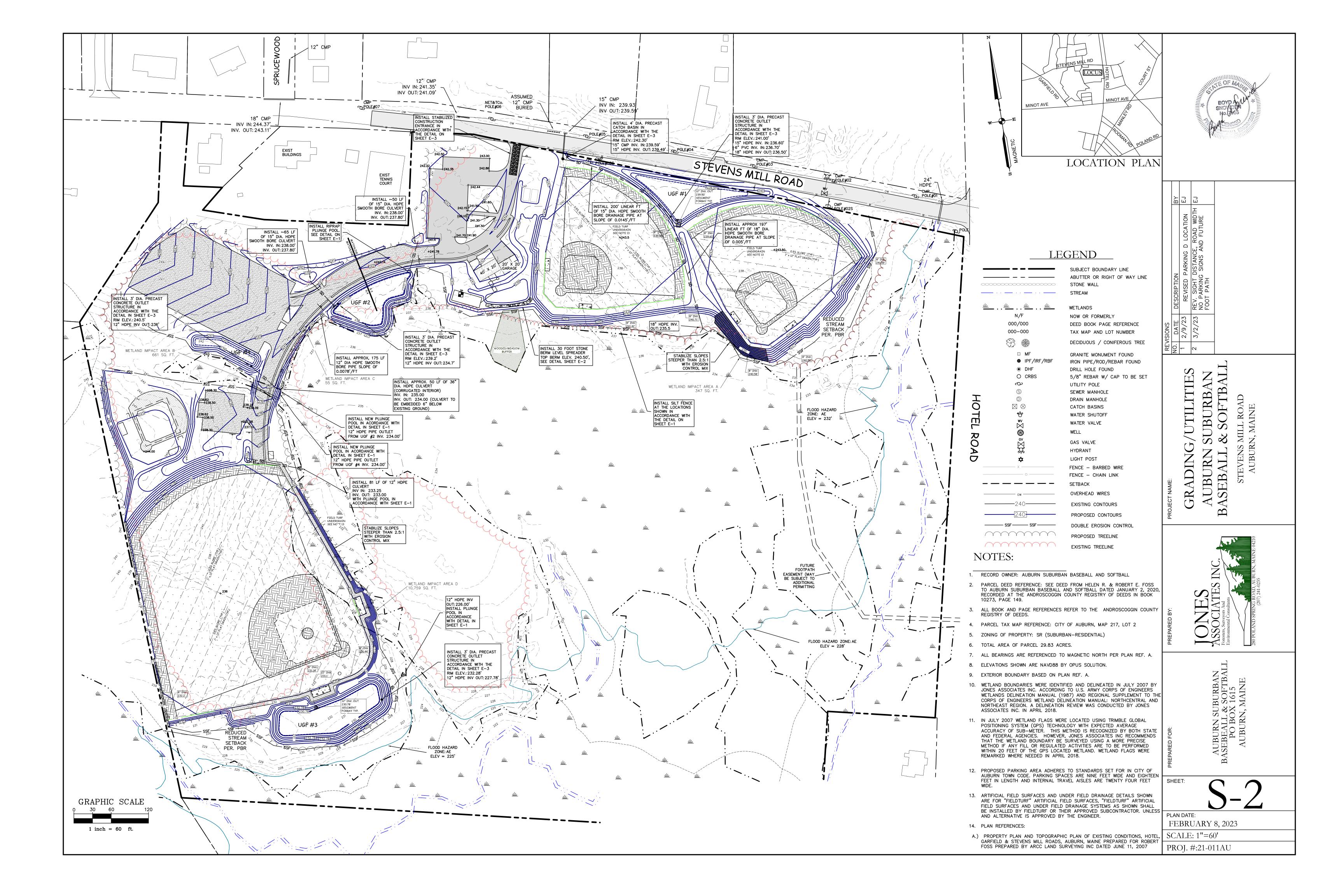
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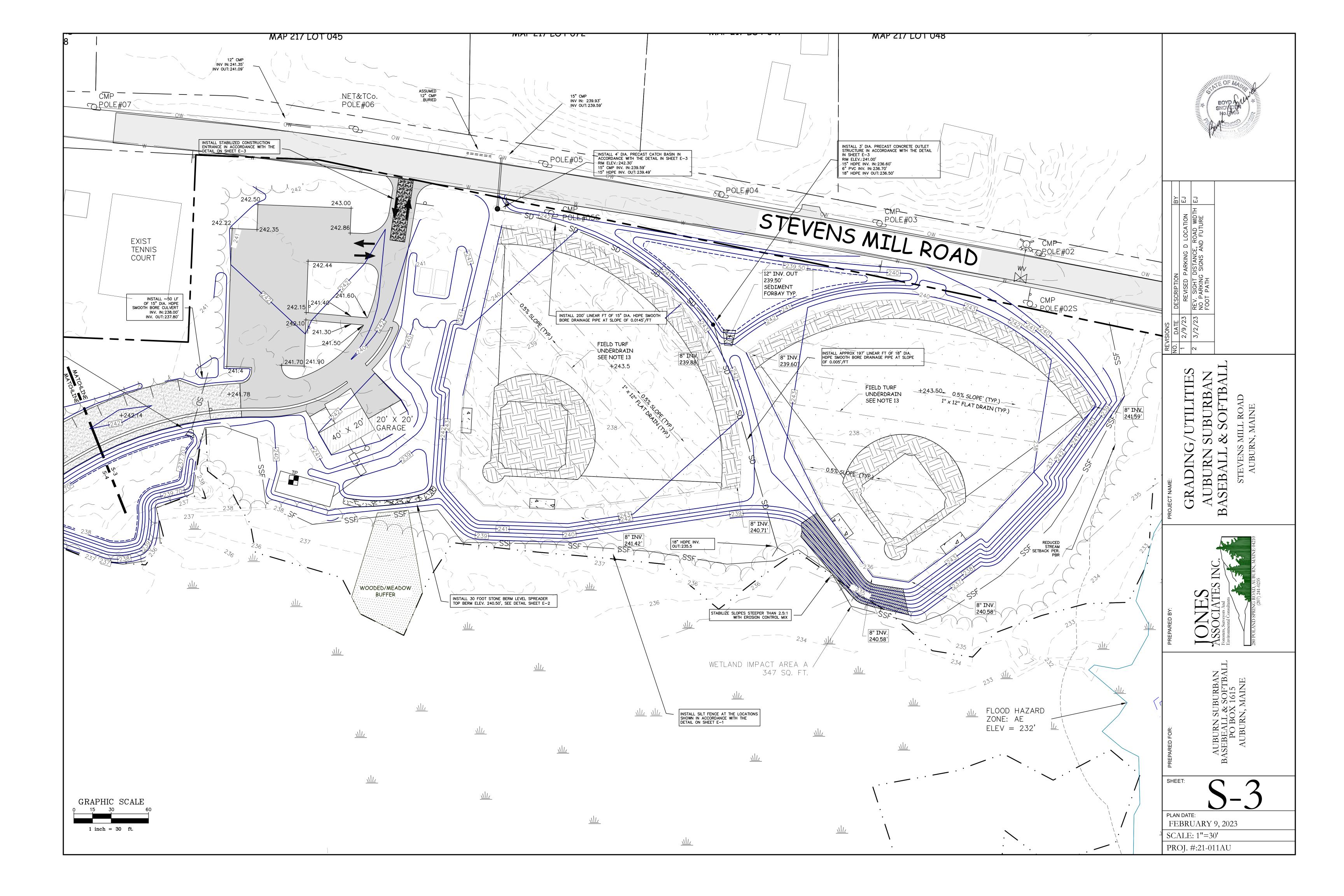
If you have any questions or need additional information, please do not hesitate to contact our office. We look forward to discussing this project with the Planning Board during the March $14^{\rm th}$ meeting.

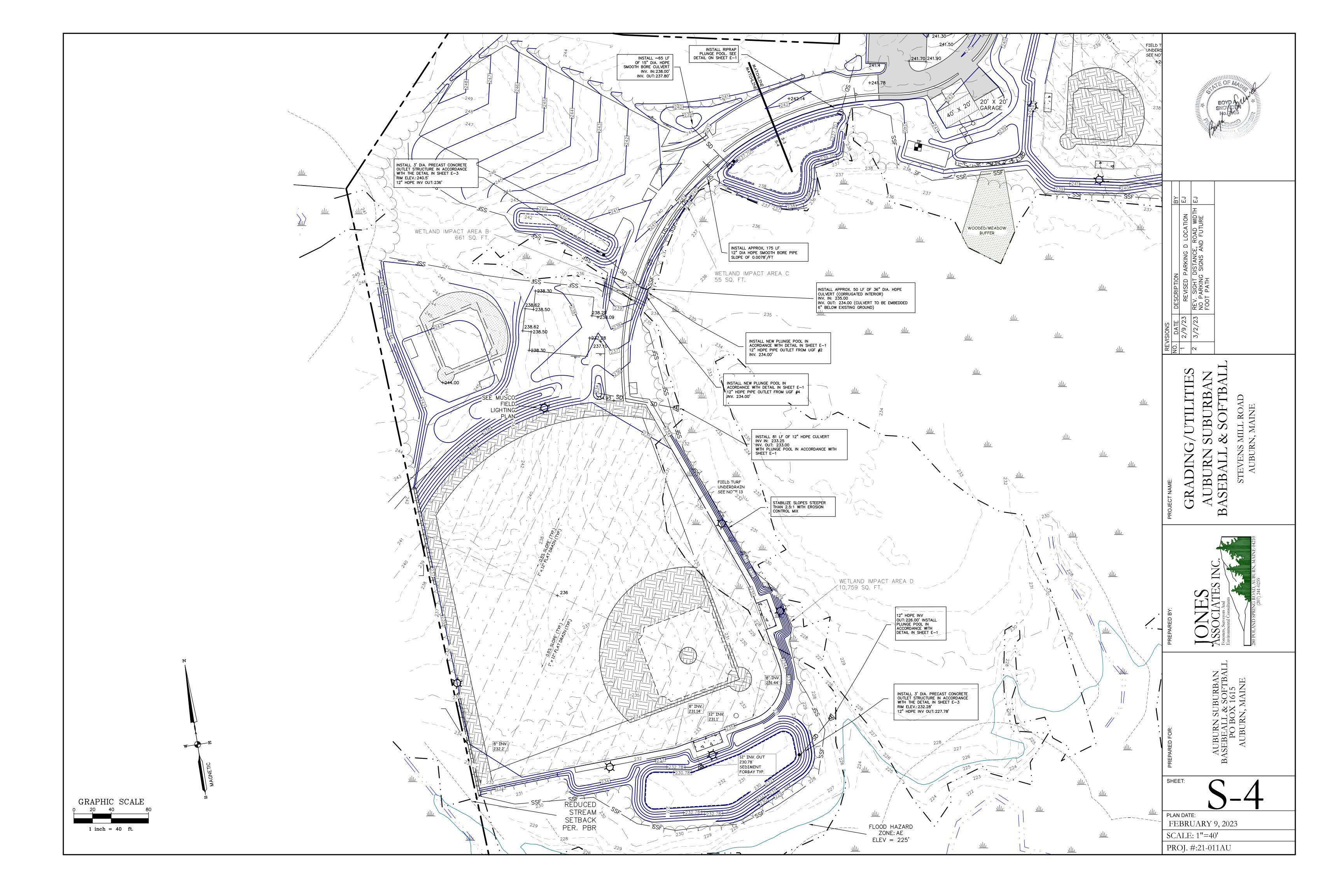
Sincerely,

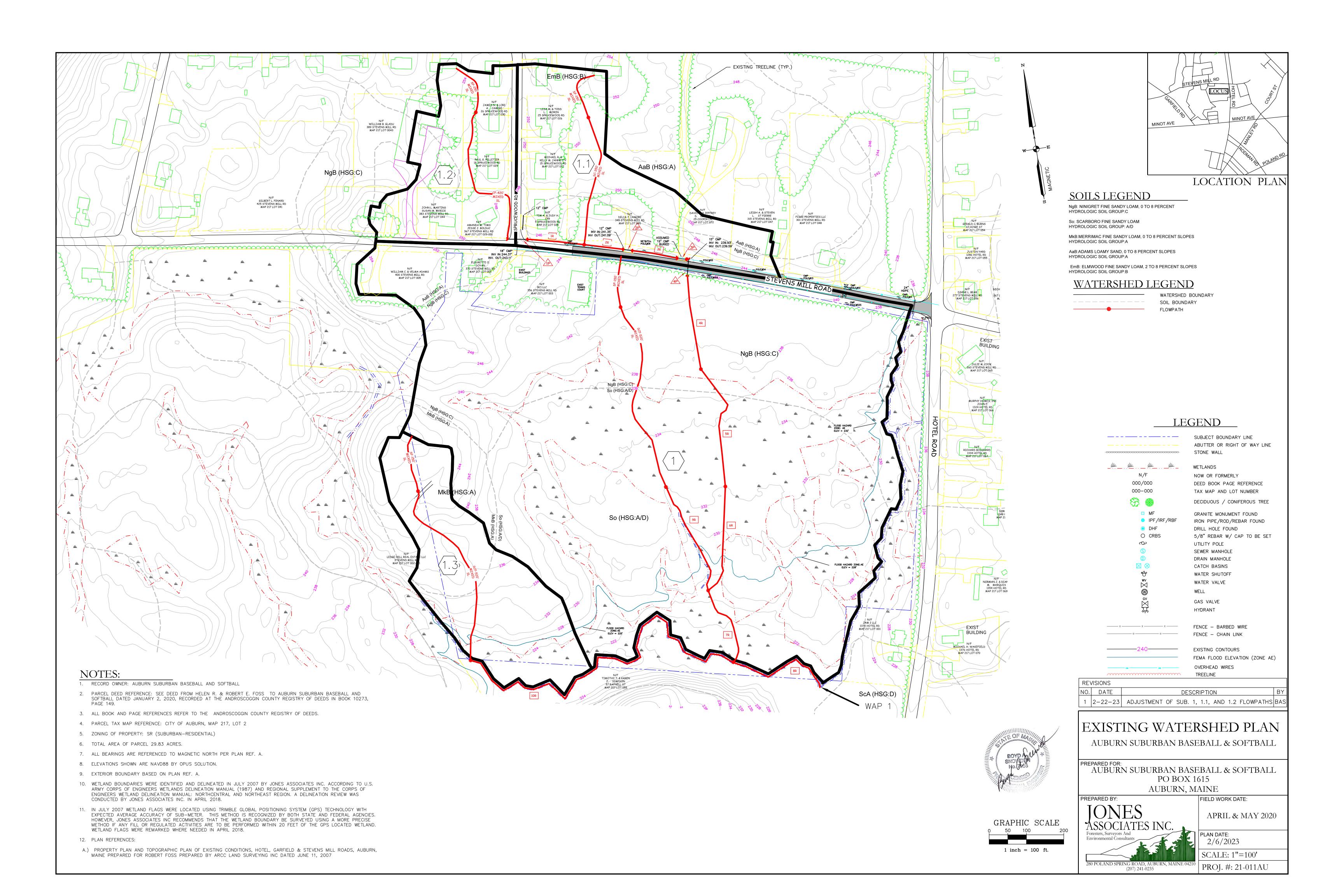
Evan Jones

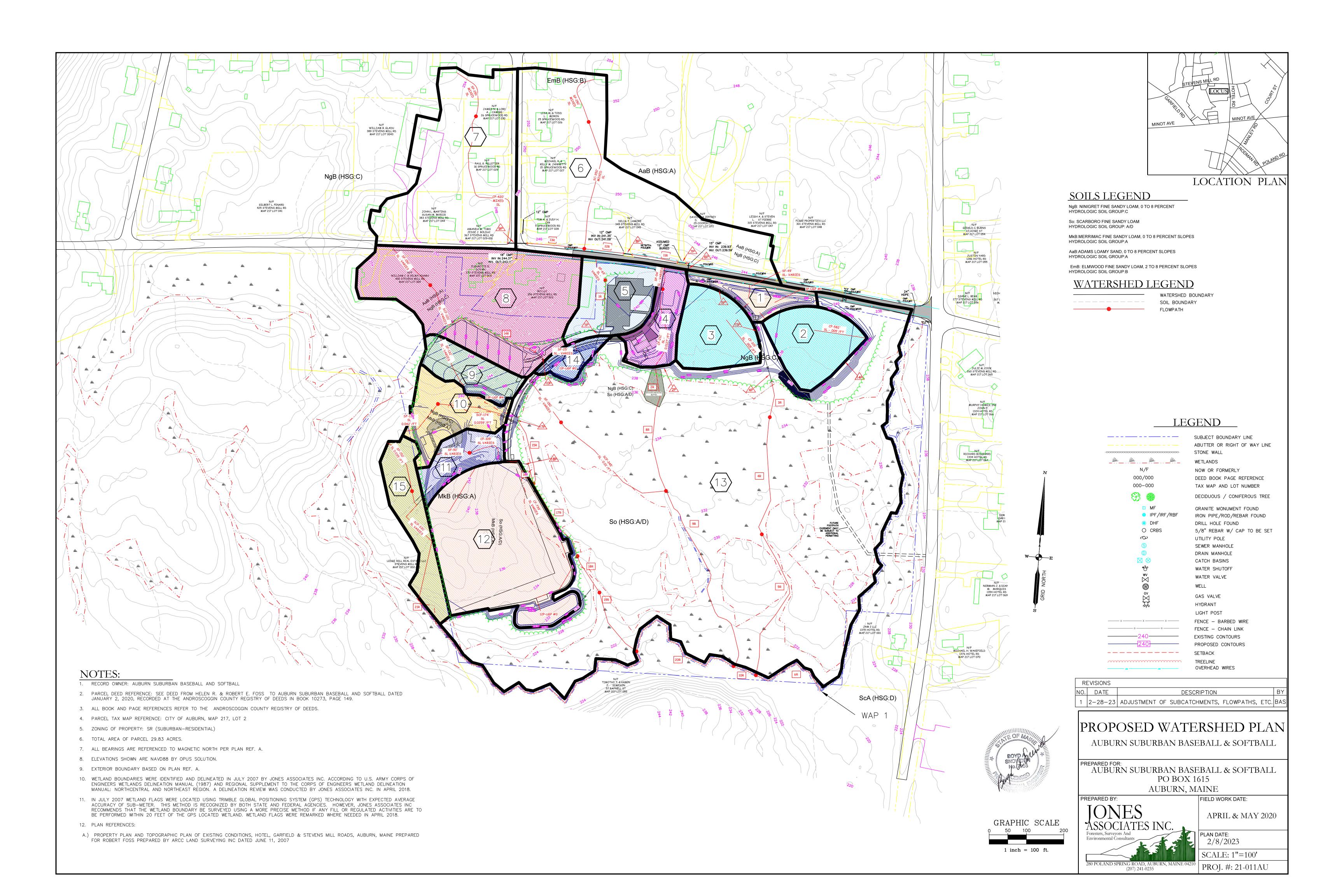


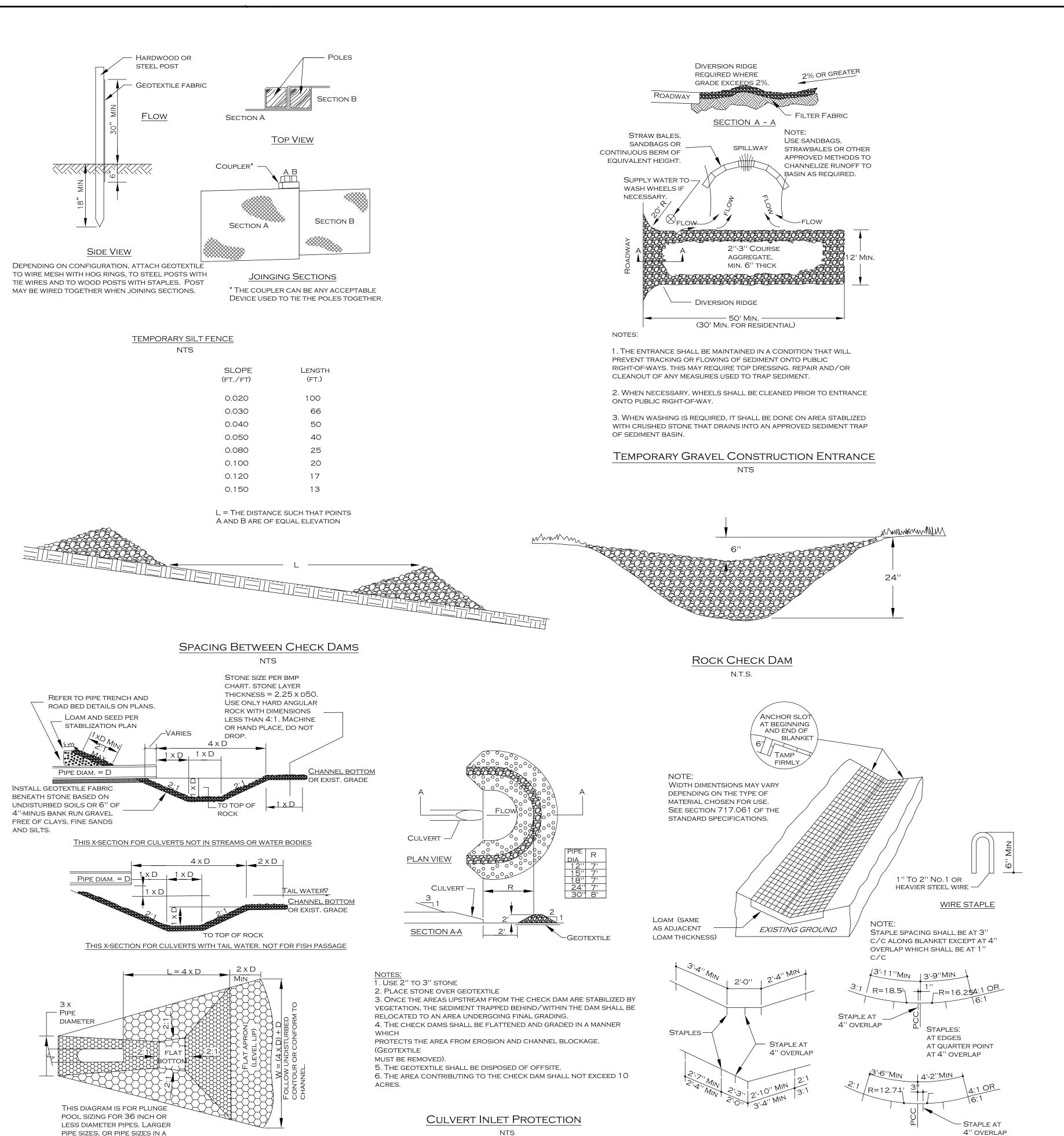












PIPE SIZES, OR PIPE SIZES IN A

STREAM, SHALL BE DESIGNED

BY THE ENGINEER.

EROSION AND SEDIMENTATION CONTROL PLAN

PROJECT DESCRIPTION THIS EROSION AND SEDIMENTATION CONTROL PLAN HAS BEEN PREPARED FOR THE CONSTRUCTION OF THE NEW AUBURN SUBURBAN BASEBALL AND SOFTBALL SPORTS FACILITY. THIS PROJECT INCLUDES APPROXIMATELY 8.69 ACRES OF DISTURBED AREA, WITH ONLY 6.07 ACRES OF NEW IMPERVIOUS AREA. 11,822 SQ. FT. OF WETLAND IMPACTS WILL BE REQUIRED FOR THE PROJECT.

EXISTING DRAINAGE ON THE SITE CURRENTLY FLOWS OVERLAND TOWARDS THE SOUTH INTO AN UNNAMED STREAM.

EXISTING SITE CONDITIONS THE SITE CURRENTLY CONSISTS OF LOW TO MODERATELY SLOPED TERRAIN WHICH VARIES IN SLOPE FROM 3 TO 15 PERCENT. THE SITE CURRENTLY FLOWS TOWARDS THE SOUTH AS NOTED ABOVE. THE EXISTING PARCEL IS UNDEVELOPED. THE SITE WILL BE PERMITTED THROUGH THE CITY OF AUBURN'S DELEGATED REVIEW PROCESS FOR SITE LOCATION OF DEVELOPMENT PERMIT THROUGH THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

ADJACENT AREAS ADJACENT PROPERTIES ARE ZONED AS SUBURBAN RESIDENTIAL TO THE NORTH, SOUTH, EAST, AND WEST.

SOILS DATA CAN BE FOUND WITHIN THE ANDROSCOGGIN COUNTY MEDIUM INTENSITY SOIL SURVEY MAPS.

USED FOR WOOD WASTE BERMS AT THE LOCATIONS DEFINED ON THE DESIGN PLANS.

NECESSARY PERMITS FROM THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE U.S. ARMY CORPS OF ENGINEERS HAVE BEEN OBTAINED FOR THE 11,822 SQ. FT. OF WETLAND IMPACTS NECESSARY FOR THE PROJECT. DOUBLE EROSION CONTROL SHALL BE USED ADJACENT TO ANY WETLANDS OR STREAMS AS

THE EROSION AND SEDIMENTATION CONTROL PRACTICES INCLUDES THE USE OF HDPE SMOOTH BORE STORM DRAIN PIPES, PRECAST CONCRETE DRAINAGE STRUCTURES, VEGETATED DITCHES AND DIVERSION SWALES WITH EROSION FABRIC, GEOTEXTILE FABRIC / RIP RAP PROTECTION, VEGETATIVE SLOPES, INLET AND OUTLET PROTECTION FOR CULVERTS, TEMPORARY HAY MULCH PLACES OVER DISTURBED SOILS AND SILT FENCE.

A. STRUCTURE MEASURES

1 CULVERTS / STORM DRAIN PIPES: SMOOTH BORE HDPE CULVERTS / DRAIN PIPES SHALL BE INSTALLED ACCORDING TO THE SIZE AND LOCATION ON THE DESIGN PLANS. THE CULVERTS / DRAIN PIPES HAVE BEEN DESIGNED TO ACCOMMODATE A 25-YEAR STORM EVENT. ALL CULVERTS ARE TO BE CONSTRUCTED WITH INLET AND OUTLET RIPRAP PROTECTION FOR EROSION CONTROL. WOOD WASTE BERM: WOOD WASTE BERMS MAY BE USED IN LIEU OF SILT FENCE AS LONG AS THE BERM IS INSTALLED IN ACCORDANCE WITH MOST RECENT BEST MANAGEMENT PRACTICES AS OUTLINED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. EXISTING STUMPS REMOVED DURING GRUBBING OF THE SITE SHALL BE

3 SILT FENCE: SILT FENCE SHALL BE CONSTRUCTED AT THE LOCATION SHOWN ON THE PLANS. THE SILT FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ON THIS SHEET, AND SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF ANY DITCHING OR GRUBBING FOR THE PROJECT AREAS. THE SILT FENCE WILL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND AFTER RAIN EVENTS. THE SILT FENCE WILL REMAIN IN PLACE UNTIL THE SITE AREAS THEY ARE PROTECTING ARE FULLY VEGETATION, AT WHICH TIME THEY SHOULD BE REMOVED. 4 CATCH BASINS / F-STRUCTURES: ALL CATCH BASINS AND F-STRUCTURES INSTALLED AS PART OF THIS PROJECT ARE REQUIRED TO BE INSTALLED WITH DANDY

SACK INLET PROTECTION AS MANUFACTURED BY MIRAFI OR APPROVED EQUAL. DANDY SACK SHALL BE INSTALLED BETWEEN FRAME AND GRATE AND SHALL BE MONITORED WEEKLY OR AFTER RAIN EVENTS. DANDY SACK SHALL BE CLEANED WEEKLY TO ENSURE PROPER OPERATION AND TO ENSURE RUNOFF IS ALLOWED TO PASS THROUGH THE SACK AND NOT BYPASS CATCH BASINS.

B. VEGETATIVE MEASURES:

1 TOPSOIL STOCKPILING: TOPSOIL DURING SITE CONSTRUCTION SHALL BE STOCKPILED AND USED IN SITE RECLAMATION. STOCKPILES SHALL BE MULCHED WITH HAY UNTIL IT IS USED. MULCH SHALL BE APPLIED AT A RATE OF 90 LBS / 1000 SQUARE FEET. SILT FENCE SHALL BE INSTALLED ON THE DOWN SLOPE SIDE OF THE TOPSOIL PILE TO PROVIDE A SEDIMENTATION BARRIER

2 STUMP STOCKPILING: THE STUMPS SHALL BE STOCKPILED DURING THE SITE CONSTRUCTION IN A LOCATION THAT IS EASILY ACCESSIBLE FOR TRUCKS AND EQUIPMENT. THE STOCKPILE SHALL BE MULCHED WITH HAY UNTIL THEY ARE REMOVED FROM THE SITE AND BURIED IN AN APPROVED LOCATION. MULCH SHALL BE APPLIED AT A RATE OF 90 LBS / 1000 SQUARE FEET. SILT FENCE SHALL BE INSTALLED ON THE DOWN SLOPE SIDE OF THE STUMP PILE TO PROVIDE A SEDIMENTATION BARRIER. STUMPS WITHIN THE ROAD RIGHT OF WAY WILL BE GROUND AND USED FOR CONSTRUCTION OF THE WOOD WASTE BERM. Permanent seeding: All disturbed areas and areas of exposed soil shall be seeded with Conservation Mix #2 at a rate of 42 lbs/acre. This

SHALL INCLUDE 20 LBS CREEPING RED FESCUE, 2 LBS. REDTOP AND 20 LBS. TALL FESCUE. LIME SHALL BE APPLIED AT A RATE OF 3 TONS/ACRE. HAY MULCH WILL BE APPLIED AT A RATE OF 90 LB/1000 SQUARE FEET. ALL VEGETATION WATERWAYS AND CRITICAL AREAS OF CONCENTRATE FLOW SHALL BE STABILIZED WITH GEOTEXTILE OR SIMILAR. THIS SEEDING MIXTURE SHALL NOT APPLY TO VEGETATION REQUIREMENTS IN THE UNDER DRAINED GRASS FILTER.

SPECIAL PROVISIONS:

1. ALL DISTURBED AREAS WILL BE MULCHED WITHIN SEVEN DAYS OF INITIAL DISTURBANCE OR PRIOR TO ANY STORM EVENT. 2. Any area to have a permanent cover of vegetation shall have loam, permanent seeding, and mulch applied within seven days of completing the

FINAL GRADING FOR THAT AREA. 3. VEGETATIVE AND RIP-RAP DITCH INNINGS WILL BE INSTALLED WITH 48 HOURS OF COMPLETING THE FINAL GRADING FOR ANY SECTION OF DITCH.

4. CULVERT / STORM DRAIN OUTLET PROTECTION WILL BE INSTALLED WITH 24 HOURS OF SETTING CULVERT OR PIPE. 5. LIMIT THE GRUBBED AREA FOR SITE CONSTRUCTION TO THAT WHICH IS MANAGEABLE IN ORDER TO REDUCE POTENTIAL FOR HIGH SEDIMENT LOADING FROM RUNOFF.

COMPLETE CULVERTS, INLET AND OUTLET PROTECTION AND MULCH AREAS BEFORE MOVING TO A NEW AREA. 6. ALL SLOPES EXCEEDING 15 PERCENT SHALL BE REQUIRED TO HAVE ONE OF THE FOLLOWING CONTROL MEASURES APPLIED TO PREVENT SCOURING AND EROSION:

A. MULCH SHALL BE APPLIED OVER THE LOAM AND SEED AND SHALL BE ANCHORED BY NETTING, OR B. EROSION CONTROL BLANKET SHALL BE APPLIED OVER THE LOAM AND SEED, OR

D. HYDROSEEDING ONTO LOAM SURFACE WITH MULCH APPLIED AND TACKIFIER TO STABILIZE THE MULCH.

MAINTENANCE

DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL LONG TERM PERMANENT VEGETATION HAS BEEN ESTABLISHED, THE SITE WILL BE MAINTAINED IN ACCORDANCE A. DISTURBED AREAS SHALL BE RESEEDED AND MULCHED AS NEEDED TO ENSURE ADEQUATE VEGETATION TO STABILIZE THE UNDERLYING SOILS.

B. WATERWAYS AND RIPRAP PLUNGE POOLS SHALL BE VISUALLY INSPECTED WEEKLY AND AFTER RAIN EVENTS DURING CONSTRUCTION PERIOD. THEY WILL BE RESTORED AS REQUIRED. REPAIRS WILL INCLUDE REPAIRS TO JUTE MESH, FILLING IN ERODED AREAS, RESEEDING AND REMULCHING AND PROVIDING ADDITIONAL MULCH. C. HAY BALE BARRIERS, WOOD WASTE BERM AND SILT FENCE WILL BE INSPECTED WEEKLY AND WILL BE REPAIRED AS NEEDED. SUCH REPAIRS WILL INCLUDE REMOVE OF SEDIMENT TRAPPED AGAINST SILT FENCE / WOOD WASTE BERM WHEN HEIGHT OF SEDIMENT CREATES A LOADING PROBLEM ON THE BARRIER, REPAIR OF WATERWAY AREAS, OR DETERIORATION OF THE BARRIERS.

D. ALL DISTURBED SOILS SHALL HAVE HAY MULCH APPLIED AT A RATE OF 90 LBS. PER 1000 SQUARE FEET WITHIN 48 HOURS OF THE DISTURBANCE OF THE SOIL, AND PRIOR TO ANY PREDICTABLE RAIN EVENT. ALL MEASURES DESCRIBED ABOVE SHALL BE MAINTAINED AS DIRECTED IN THE LATEST EDITION OF BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION.

WINTER STABILIZATION

TEMPORARY EROSION CONTROL BLANKET

1. STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS: THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

INSTALL A SOD LINING IN THE DITCH: THE CONTRACTOR WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. INSTALL A STONE LINING IN THE DITCH: THE CONTRACTOR WILL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15. THE CONTRACTOR WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING, FROM

REDUCING THE DITCH'S CROSS-SECTIONAL AREA. • 2. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES: THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. HE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 8% TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE

FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS: BY OCTOBER 1, THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS (OR MULCH WITH JUTE NETTING) OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH AN ADDITIONAL LAYER OF WINTER MULCH APPLICATION, STONE RIPRAP. OR WOODWASTE COMPOST AS DESCRIBED BELOW.

STABILIZE THE SLOPE WITH SOD: THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33%.

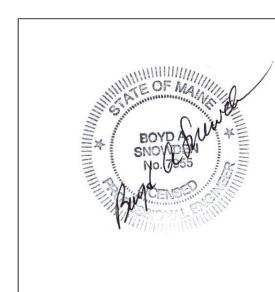
STABILIZE THE SLOPE WITH EROSION CONTROL MIX: THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF EROSION CONTROL MIX ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE EROSION CONTROL MIX, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE CONTRACTOR WILL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE. STABILIZE THE SLOPE WITH STONE RIPRAP: THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE CONTRACTOR WILL HIRE REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP. 3. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS: BY SEPTEMBER 15, THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS

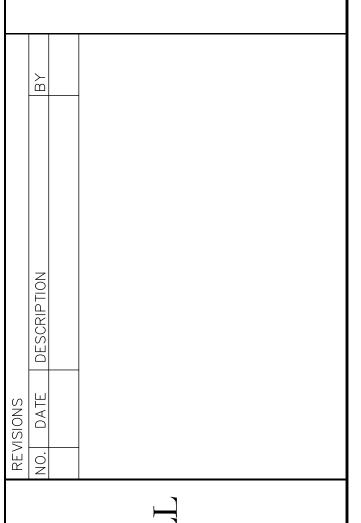
HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING

ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER: STABILIZE THE SOIL WITH TEMPORARY VEGETATION: BY OCTOBER 1, THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH plastic or jute netting. The contractor will monitor growth of the rye over the next 30 days. If the rye fails grow at least three inches or COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE CONTRACTOR WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ONE OF THE ITEMS BELOW OF THIS STANDARD.

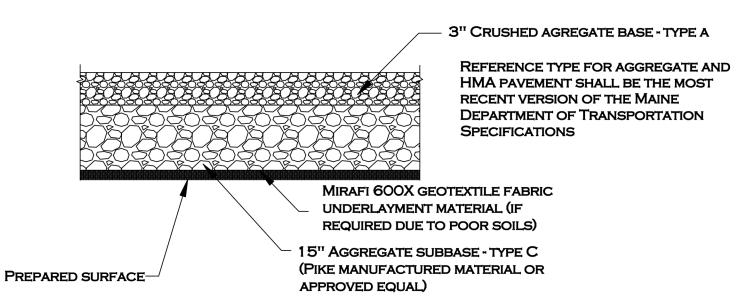
STABILIZE THE SOIL WITH SOD: THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

STABILIZE THE SOIL WITH MULCH: BY NOVEMBER 15, THE CONTRACTOR WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE CONTRACTOR WILL ANCHOR THE MULCH WITH PLASTIC OR JUTE NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

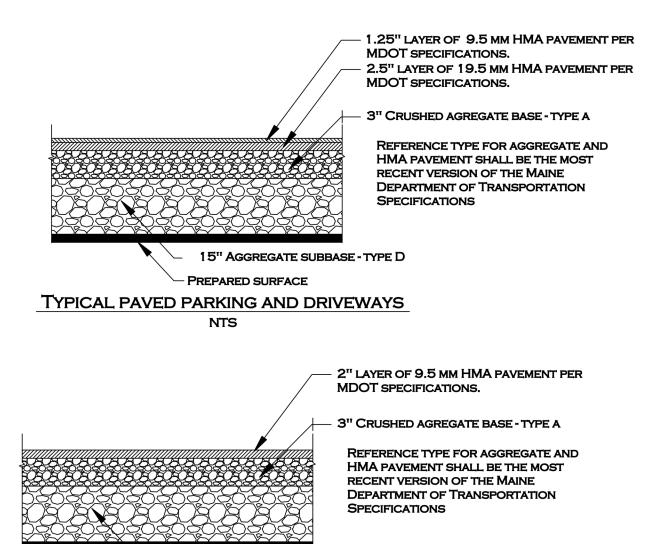


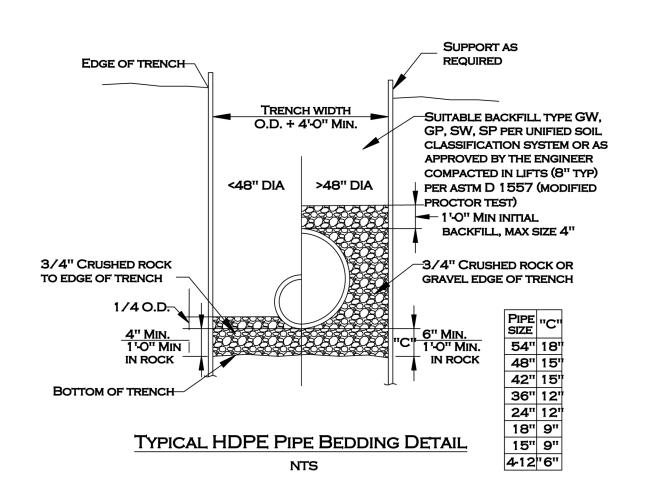


PLAN DATE: **FEBRUARY 9, 2023** SCALE: N/A PROJ. #:21-011AU



TYPICAL GRAVEL PARKING AND DRIVEWAYS





9" AGGREGATE SUBBASE - TYPE D

- PREPARED SURFACE

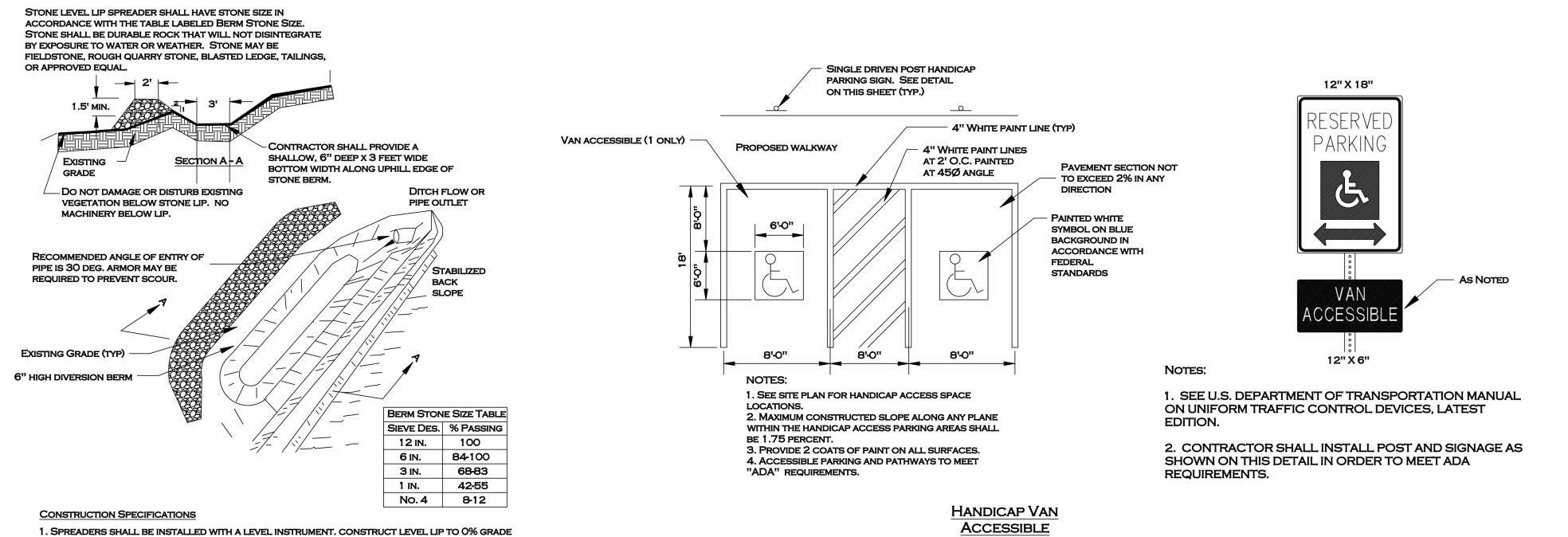
TYPICAL ASPHALT WALKWAY DETAIL

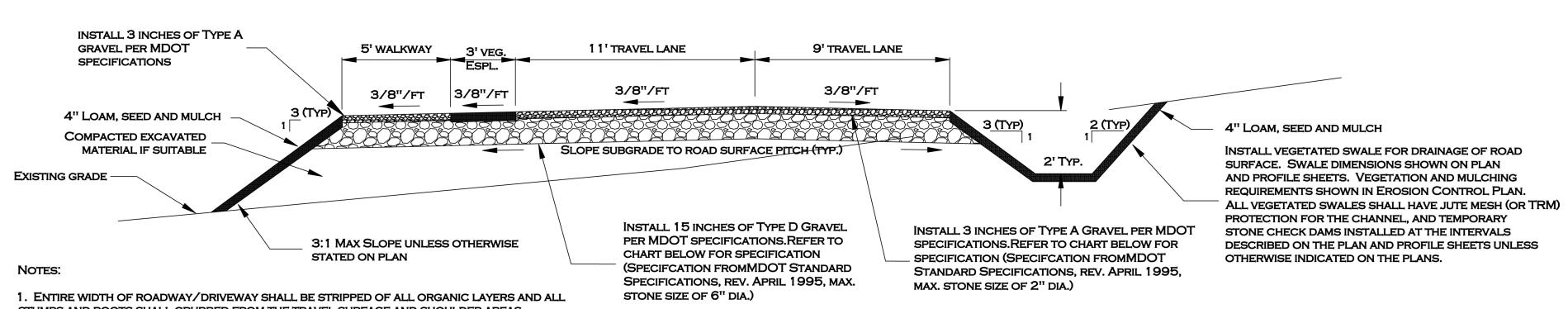
TRANSVERSE SECTION THROUGH FIELD

ARTIFICIAL FIELD SURFACES AND UNDER FIELD DRAINAGE DETAILS SHOWN ARE FOR "FIELDTURF" ARTIFICIAL FIELD SURFACES, "FIELDTURF" ARTIFICIAL FIELD SURFACES AND UNDER FIELD DRAINAGE SYSTEMS AS SHOWN SHALL BE INSTALLED BY FIELDTURF OR THEIR APPROVED SUBCONTRACTOR. UNLESS AND ALTERNATIVE IS APPROVED BY THE ENGINEER.



TRANSVERSE SECTION THROUGH FIELD





STUMPS AND ROOTS SHALL GRUBBED FROM THE TRAVEL SURFACE AND SHOULDER AREAS.

TO ENSURE UNIFORM SHEET FLOW. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED

2. SELECT GEOTEXTILE FABRIC FOR UNDER RIP RAP OUTLET PROTECTION OF CULVERT BASED ON

3. STORM RUN-OFF CONVERTED TO SHEET FLOW ACROSS OUTLET APRON SHALL FLOW ONTO

8. DISCHARGE IS NOT PERMITTED WITHIN 25' OF A STREAM OR WETLAND. CONSULT DEP IF

STONE BERM LEVEL LIP SPREADER

4. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PROVIDED.

6. CONSTRUCT SPREADER WITH LIP AT EXISTING ELEVATION AS SPECIFIED.

STRUCTURE MUST BE WITHIN 75' OF STREAM OR WATER BODY.

7. DOWNGRADIENT RECEIVING AREA MUST BE NATURALLY WELL VEGETATED.

STABILIZED AREAS. RUN-OFF SHALL NOT BE RECONNECTED IMMEDIATELY BELOW THE POINT OF

5. CONSTRUCTION OF LEVEL SPREADER LIP SHALL BE FROM UPHILL SIDE ONLY. LEVEL LIP AND AREA BELOW SPREADER SHALL BE AT EXISTING GRADES AND UNDISTURBED BY EARTHWORK EQUIPMENT.

SOILS (NOT FILL)

UNDISTURBED SOILS (SAND, SILTS, CLAYS, ETC.)

TALL FESCUE

2. SUBGRADE SHALL BE SLOPED IN SUCH A MANNER AS TO PROMOTE WATER MOVEMENT IN SUBBASE AND BASE AGGREGATE OF ROAD/DRIVEWAY TO SIDE DITCH OR LOW SIDE BANK.

3. VEGETATED SHOULDER SHALL BE CONSTRUCTED WITH 2 INCH LAYER OF 50:50 LOAM/SAND MIX, WHICH SHALL BE SEEDED IN ACCORDANCE WITH THE SEED SPECIFICATION LISTED BELOW: CREEPING RED FESCUE 20 LBS/ACRE REDTOP 2 LBS/ACRE

20 LBS/ACRE

4. This detail shows gravel portion of driveway. For pavement sections, dimensions and DEPTHS OF AGGREGATE ARE THE SAME AS SHOWN ON THE DETAIL ABOVE, ONLY THE TOP SURFACE

PAVEMENT DEPTHS IN ACCORDANCE WITH THE OTHER MATERIAL DETAILS ON THIS SHEET.

0-7.0 No. 200 NOTE: ALL AGGREGATE FOR BASE AND SUBBASE SHALL BE FREE FROM VEGETATIVE MATTER, LUMPS OR BALLS OF CLAY, OR ORGANIC MATTER.

0-30

PERCENT PASSING BY WEIGHT

TYPE A BASE GRAVEL TYPE D SUBBASE GRAVEL

RESERVED PARKING

TYPICAL ROAD/DRIVEWAY CROSS SECTION

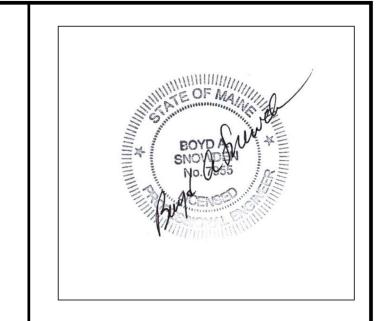
SIEVE SIZE

1/2 INCH

1/4 INCH

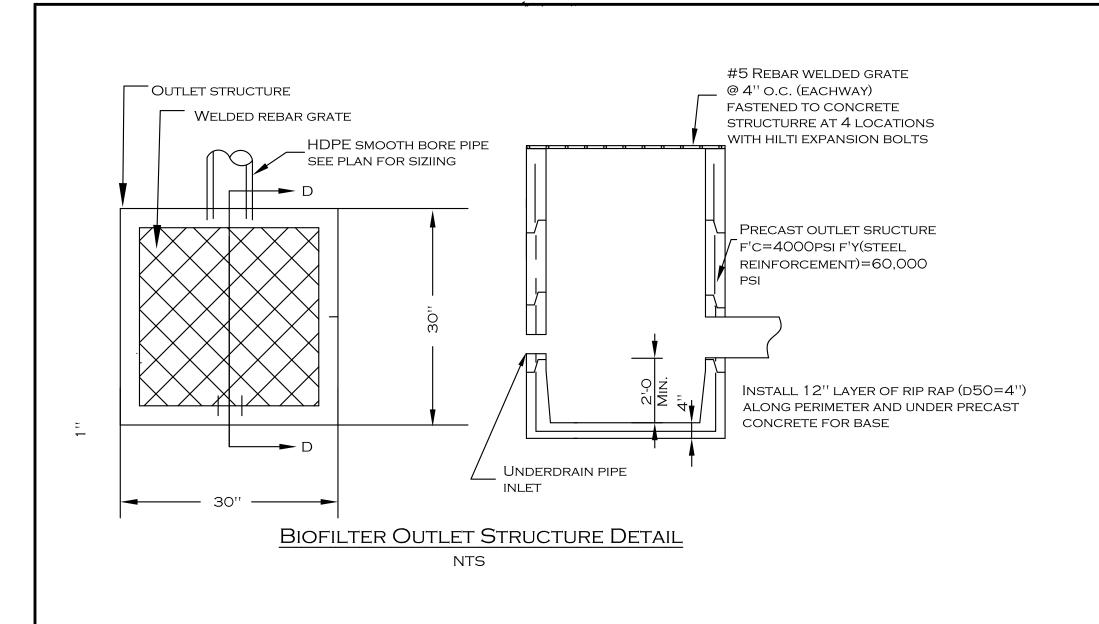
No. 40

45-70



PLAN DATE: **FEBRUARY 9, 2023** SCALE: N/A

PROJ. #:21-011AU



CAREFUL NOT TO OVEREXCAVATE THE AREA UNDER THE FILTER. IF ters are on fill sites, Contractor shall ensure that soils. BELOW THE FILTERS ARE COMPACTED TO A DENSITY OF 95% OF THE OPTIMUM DENSITY FOR THE SUBGRADE SOILS. 2. THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE FILTER

1. DURING EXCAVATION FOR THE FILTER, THE CONTRACTOR SHALL BE

SIDESLOPES WITH GEOTEXTILE OR OTHER APPROVED MEANS TO PREVENT EROSION UNTIL VEGETATION HAS BEEN ESTABLISHED. 3. FILTER SIDE SLOPES SHALL BE COVERED WITH A 4 INCH LAYER OF COMPACTED LOAM, SEEDED AND MULCHED (ABOVE UNDERDRAIN GRASS

4. THE SOIL FILTER SHALL BE USED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTUION OF THE PROJECTAND UNTIL THE AREA IS STABILIZED. STABILIZATION IS INDICATED BY VEGETATIVE COVER OF AT LEAST 75 PERCENT OF DISTURBED AREAS.

5. THE CONTRACTOR SHALL INSTALL A SACRIFICIAL LAYER OF SANDY LOAM, 2-3" DEEP THROUGHOUT FILTER AREA TO BE LEFT IN PLACE FOR ONE FULL YEAR FROM THE DATE OF COMPLETION OF THE SITE AND STORM WATER CONSTRUCTION. AFTER THIS YEAR, ASSUMING ALL AREAS ARE STABILIZED, THE CONTRACTOR SHALL REMOVE THE TOP 2-3 INCH LAYER AND SPREAD THE DISPOSED MATERIAL ON SITE OUTSIDE OF THE FILTER, AND SEED THE DISPOSED MATERIAL.

6. FILTER MUST DRAIN WITH IN 24 AND 48 HOURS. 7. SEDIMENT TRAP MUST BE INSTALLED AT THE ENTRANCE TO THE GRASS FILTER FROM VEGETATIVE DITCHES OR CULVERTS TO REDUCE/ELIMINATE SEDIMENT LOADING TO GRASS FILTER.

8. IF VEGETATION HAS NOT ESTABLISHING ITSELF WITHIN A REASONABLE GROWTH PERIOD, THE CONTRACTOR SHALL INSTALL 2-3 INCHES OF LOAM (W/LESS THAN 1% CLAY CONTENT) ON THE SURFACE OF THE GRASS FILTER (UNCOMPACTED), AND RESEED WTIH UNDERDRAIN GRASS FILTER SEED MIX. IF ADDITIONAL LOAM WILL BE PROVIDED FOR GRASS GROWTH, AN EQUAL DEPTH OF MEDIA WILL NEED TO BE REMOVED. CONTRACTOR SHALL SEED THE FILTER MEDIA ACCORDING TO THE SPECIFICATIONS LISTED ON THIS DETAIL AND MULCH THE FILTER MEDIA WITH STRAW MULCH AFTER SEEDING IS COMPLETE. CONTRACTOR SHALL NOT FERTILIZE THE FILTER MEDIA AREA.

UNDERDRAIN GRASS FILTERS MUST BE SEEDED AND MULCHED TO PROMOTE GRASS GROWTH.

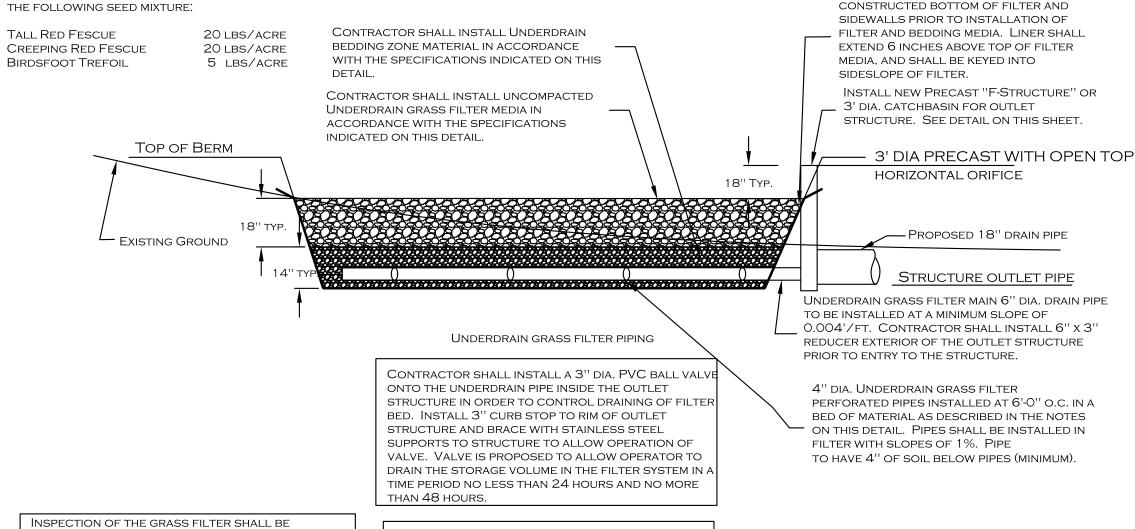
SEED MIXTURE FOR UNDERDRAIN GRASS FILTER FOR BOTTOM OF FILTER AND SIDE SLOPES SHALL INCLUDE THE FOLLOWING SEED MIXTURE:

PROVIDED FOR EACH PHASE OF CONSTRUCTION OF

ENGINEER. SEE THE DESCRIPTION ON THIS SHEET

FOR THE MDEP REQUIREMENTS.

EACH GRASS FILTER BY THE DESIGN AND THIRD PARTY



FOR SIZING AND ELEVATIONS OF UNDERDRAIN GRASS

FILTERS, SEE SHEET 1 OF THIS PLAN SET.

Underdrain Grass Filter Section View (Typ.)

6" THICK SOIL TRANSITION ZONE I INDERDRAIN PIPE REDDING

GRASS FILTER MEDIA SHALL MEET THE FOLLOWING SPECIFICATIONS.

O THICK SOIL TRANSPHON ZOIL		CINDERDINATITE BEDDING	
(BETWEEN PIPE	BEDDING AND FILTER		
MATERIAL)			
SIEVE #	% Passing	SIEVE#	% Passing
1 ''	90-100	1 "	100
1/2"	75-100	3/4"	90-100
# 4	50-100	3/8"	0-75
# 20	15-80	#4	0-25
# 50	O-15	# 10	0-5
# 200	0-5		

SOIL FILTER MEDIA

INSTALL IMPERMEABLE LINER ALONG

SOIL FILTER MEDIA SHALL BE COMPOSED OF A THOROUGHLY BLENDED MIXTURE OF MATERIALS MEETING THE FOLLOWING SPECIFICATIONS:

SILTY SAND SOIL OR SOIL MIXTURE COMBINED WITH 20-25 PERCENT BY VOLUME (NO LESS THAN 10% BY DRY WEIGHT) OF MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH.

RESULTING MIX OF SOIL FILTER MEDIA MUST HAVE NO LESS THAN 8 PERCENT PASSING THE NO. 200 SIEVE.

MEDIA SHALL HAVE A MAXIMUM CLAY CONTENT LESS THAN 2 PERCENT.

ALL FILTER BED MEDIA MATERIALS MUST BE TESTED BY GEOTECHNICAL LABORATORY, AND APPROVEDBY THE DESIGN ENGINEER PRIOR TO USE. CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF FILTER MEDIA (I.E., SELF DEVELOPED, PURCHASED, ETC.). TESTS SHALL INCLUDE THE FOLLOWING:

- 1. SILTY/SAND COMPONENT SIEVE ANALYSIS 2. FINE SHREDDED BARK OR WOOD FIBER MULCH SIEVE ANALYSIS
- 3. ORGANIC MATERIAL SIEVE ANAYSIS
- 4. HYDROMETER TEST (CLAY CONTENT) IN MIXED MATERIAL
- 5. PERMEABILITY RATE AT OPTIMIMAL LABORATORY DENSITY

ALL TEST RESULTS SHALL BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO MIXING OF THE MATERIAL, AND ALSO PRIOR TO SHIPPING OF THE MATERIAL AFTER

Underdrain Grass Filter Construction Oversight Req.

CONSTRUCTION OVERSIGHT

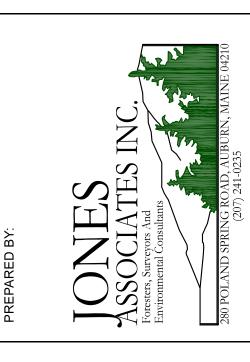
THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THE PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE, OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS

CONSTRUCTION INSPECTIONS: AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION WILL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL, AFTER ANY IMPERMEABLE LINER IS INSTALLED, AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT YET BACKFILLED, AFTER THE PIPE BEDDING FILL IS PLACED BUT PRIOR TO THE PLACEMENT OF THE TRANSITION LAYER GRAVEL, AND AFTER THE TRANSITION LAYER AND FILTER MEDIA HAVE BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS: ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAIN SOIL FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FOR EACH MATERIAL FOR TESTING. ALL TESTING MUST BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAIN SOIL FILTER BASIN'S CONSTRUCTION.

- OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL, AND WOOD FIBER MULCH (OR OTHER APPROVED ORGANIC SOURCE). THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2%, AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.
- OBTAIN A SAMPLE OF THE TRANSITION LAYER GRAVEL FILL TO BE USED ABOVE THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) of the gravel to be used for the underdrain pipe bedding. The gravel fill MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B.
- IF THE UNDERDRAIN PIPES WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE of three different locations (grabs) from the stockpile. The sample size REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C 136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE C.



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