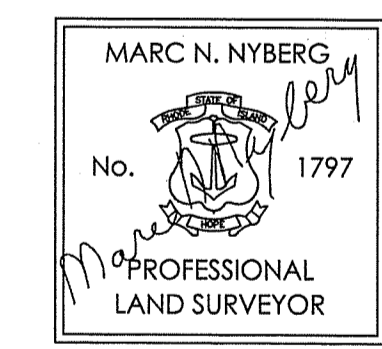


- GENERAL NOTES:**
1. WETLAND DELINEATION BY NATURAL RESOURCE SERVICES, INC.
 2. STRAW WATTLE TO BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND TO REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND AREA HAS STABILIZED. STRAW WATTLE TO BE INSPECTED PERIODICALLY OR AFTER SIGNIFICANT RAINFALL, AND REPAIRED OR REPLACED AS NECESSARY.
 3. NO UTILITY CONNECTIONS ARE PROPOSED. THE HOUSE WILL BE SERVICED BY ROOFTOP SOLAR PANELS AND A GEOTHERMAL HEATING SYSTEM.
 4. AREA OF DISTURBANCE WITHIN THE SWAMP: 1,360 SF.
 5. AREA OF DISTURBANCE WITHIN THE 50 FOOT PERIMETER WETLAND: 4,997 SF.

- LEGEND**
- 400 --- 400 EXISTING CONTOUR
 - 1200 --- PROPOSED CONTOUR
 - ▲ WETLAND FLAG
 - ▲ WETLAND EDGE
 - STRAW WATTLE
 - LIMIT OF DISTURBANCE
 - WHITE SPRUCE
 - ✱ MOUNTAIN LAUREL

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED: JAN 30 2023 FILE #: 22-0313
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

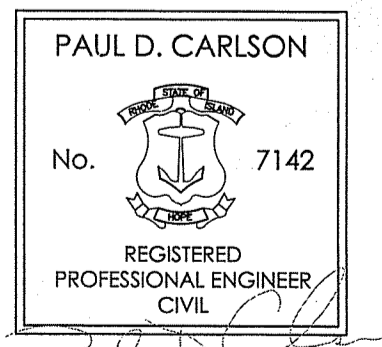
Marc N. Nyberg



CERTIFICATION
 THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:
 -LIMITED CONTENT BOUNDARY SURVEY: CLASS 1
 -TOPOGRAPHIC ACCURACY: T-4
 STATEMENT OF PURPOSE
 THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND THE PREPARATION OF THE PLAN IS AS FOLLOWS: PROPOSED HOUSE.

Marc N. Nyberg
 MARC N. NYBERG LICENSE No. 1797 COA No. AS2
 APR 19 2023
 Office of Water Resources

WETLANDS PLAN



ASSESSOR'S PLAT 20 LOT 6
 ROCKY HILL ROAD, NORTH SMITHFIELD, RI

PREPARED FOR: BERTRAM MALLE
 86 BROWN STREET, PROVIDENCE, RHODE ISLAND 02906

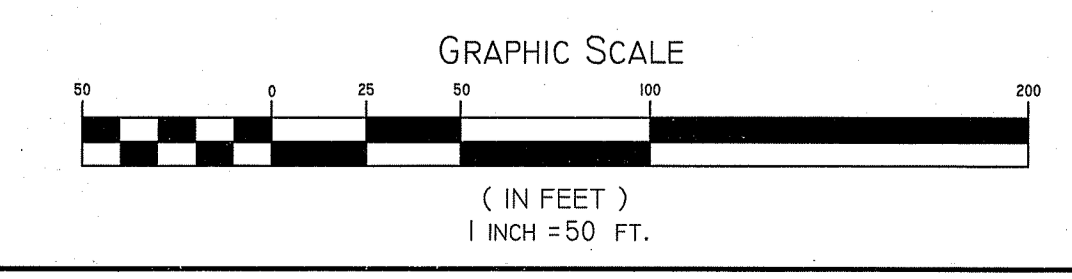
JOB # 20-147 SCALE: 1" = 50' DRAWN BY: LMB DATE: OCTOBER, 2022

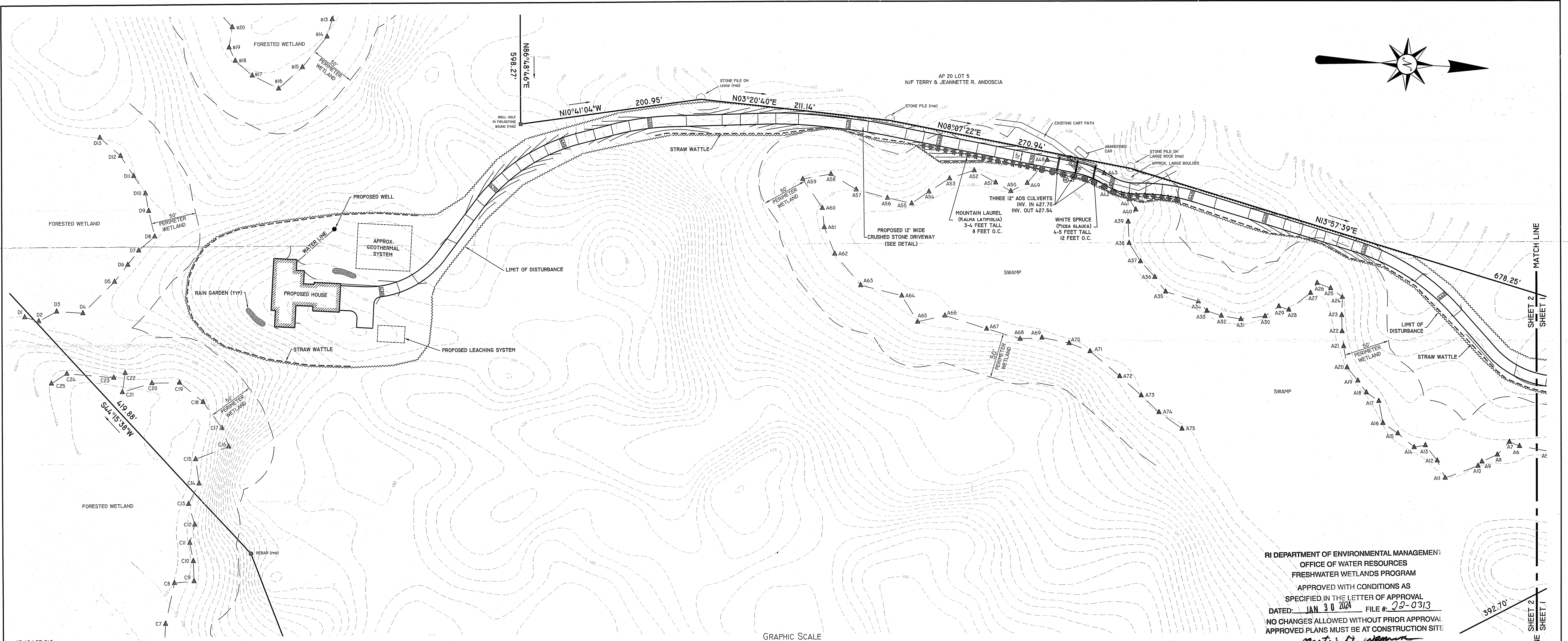
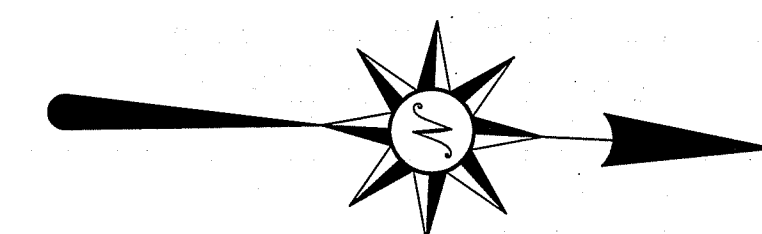
REVISED: 1-24-23

INSITE Engineering Services, LLC
 PROFESSIONAL ENGINEERS | LAND SURVEYORS
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 Phone: (401) 762-2870 Fax: (401) 762-2871
 Web Address: InsiteEngineers.com

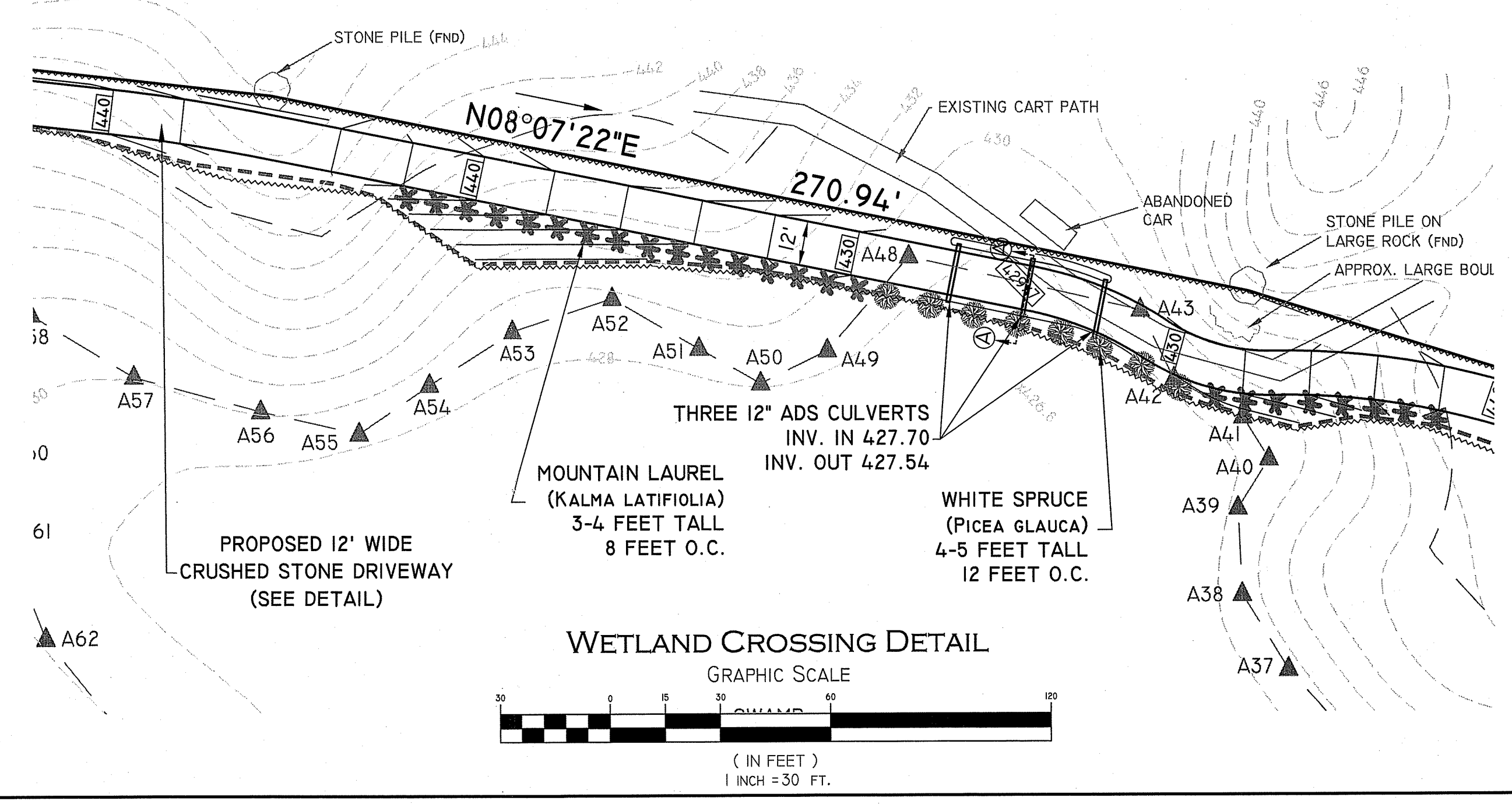
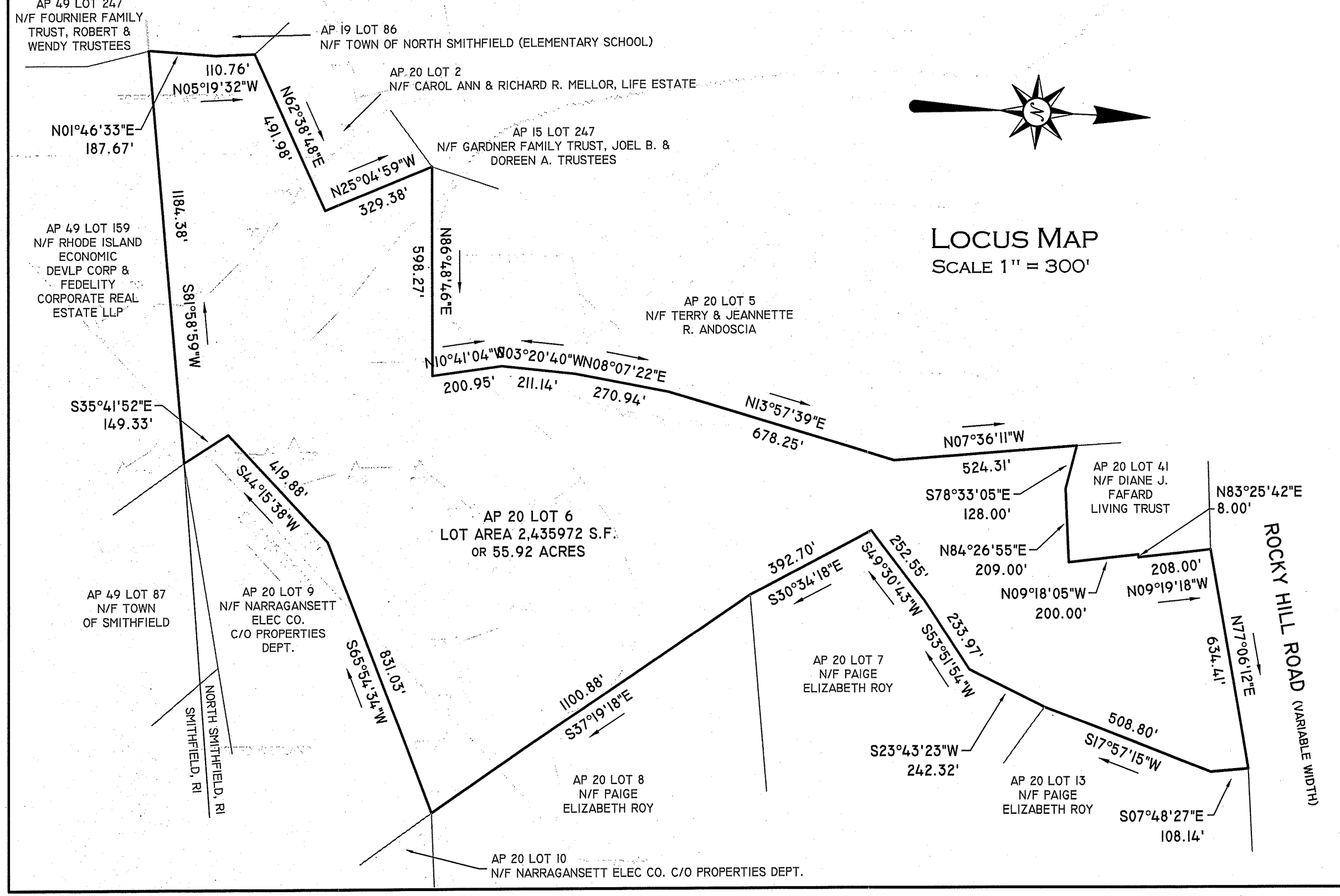
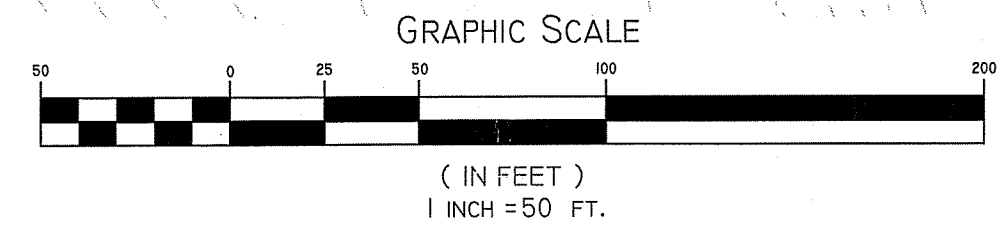
SHEET 1 OF 3





RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Yaroslav D. Wemmer



- LEGEND
- EXISTING CONTOUR
 - - - PROPOSED CONTOUR
 - ▲ WETLAND FLAG
 - ▲ WETLAND EDGE
 - - - STRAW WATTLE
 - - - LIMIT OF DISTURBANCE
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 - ★ MOUNTAIN LAUREL

RI Environmental Management
 APR 19 2023
 Office of Water Resources

WETLANDS PLAN

ASSESSOR'S PLAT 20 LOT 6
 ROCKY HILL ROAD, NORTH SMITHFIELD, RI

PREPARED FOR: BERTRAM MALLE
 86 BROWN STREET, PROVIDENCE, RHODE ISLAND 02906

Job # 20-147 SCALE: AS NOTED DRAWN BY: LMB DATE: OCTOBER, 2022
 REVISED: 1-24-23

PAUL D. CARLSON
 No. 7142
 REGISTERED PROFESSIONAL ENGINEER CIVIL

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SHEET
2
 OF 3

CONSTRUCTION PROCEDURES & SEQUENCING

- THE ENGINEER SHALL HAVE THE SOLE RESPONSIBILITY FOR THE DESIGN IMPLEMENTATION. HE SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONTRACTORS AND SUBCONTRACTORS ARE AWARE OF THE PROVISIONS ON THE PLANS.
- THE CONTRACTOR SHALL ORGANIZE SITE CONSTRUCTION IN A MANNER WHICH WILL ENSURE THE IMMEDIATE STABILIZATION OF SURFACES. PERIMETER CONTROLS EQUAL APPROVED PROJECT LIMITS.
- PRIOR TO ANY CONSTRUCTION ON SITE, THE CONTRACTOR SHALL SETUP PRE-CONSTRUCTION MEETING WITH OWNER, ENGINEER, TOWN PLANNING AND DPW PERSONAL.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, A LINE STRAW WATTLES, WILL BE PLACED AT ALL CONSTRUCTION TOE OF SLOPES IN THE AREA OF ROADWAY, PONDS, LANDSCAPED AREAS, AND ALONG PERIMETER OF PROJECT LIMIT OF DISTURBANCE WHERE INDICATED ON PROJECT PLANS.
- RESERVE EROSION CONTROL DEVICES SHALL BE STOCKPILED ON SITE IN THE EVENT OF EMERGENCIES. AND SHALL BE LOCATED 50' FROM REGULATED WETLAND RESOURCE AREAS.
- THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS FOR THE PROPER STORAGE AND/OR REMOVAL OF DEBRIS ON SITE TO AVOID UNNECESSARY ACCUMULATION ON SITE.
- DRAINAGE STRUCTURES SHALL BE CONSTRUCTED FROM DOWNSTREAM UP AND CONSTRUCTION SHALL INCLUDE THE PLACEMENT OF STONE AT THE FLARED PIPE ENDS AND OUTLET STRUCTURE INLETS AND OUTLETS AS SHOWN ON PROJECT PLANS.
- IN STREAM CONTROLS SUCH AS HAY BALE CHECK DAMS SHALL BE ESTABLISHED PRIOR TO CONSTRUCTION IF NEEDED.

CONSTRUCTION PROCEDURES & SEQUENCING

- THE ENGINEER SHALL BE CALLED ON SITE DURING THE CONSTRUCTION OF THE CULVERTS.
- THE ENGINEER SHALL BE ON SITE DURING THE CONSTRUCTION AND LAYOUT OF ALL OUTLET STRUCTURES.
- THE ENGINEER SHALL PERFORM FREQUENT INSPECTION OF THE STORMWATER SYSTEM DURING CONSTRUCTION, WITH CLEANING AND MAINTENANCE AS WARRANTED. DURING ACTIVE CONSTRUCTION PERIODS, WEEKLY INSPECTION IS REQUIRED.
- IF CONSTRUCTION IS SUSPENDED (E.G., OVER THE WINTER), THEN MONTHLY INSPECTIONS ARE REQUIRED. IN ADDITION, THE SYSTEM SHOULD BE CHECKED AFTER ANY SIGNIFICANT RAINFALL, TO INSURE IT IS FUNCTIONING CORRECTLY AND TO MONITOR SEDIMENT ACCUMULATION FROM THE DISTURBED AREAS OF THE SITE.

ROUGH GRADING

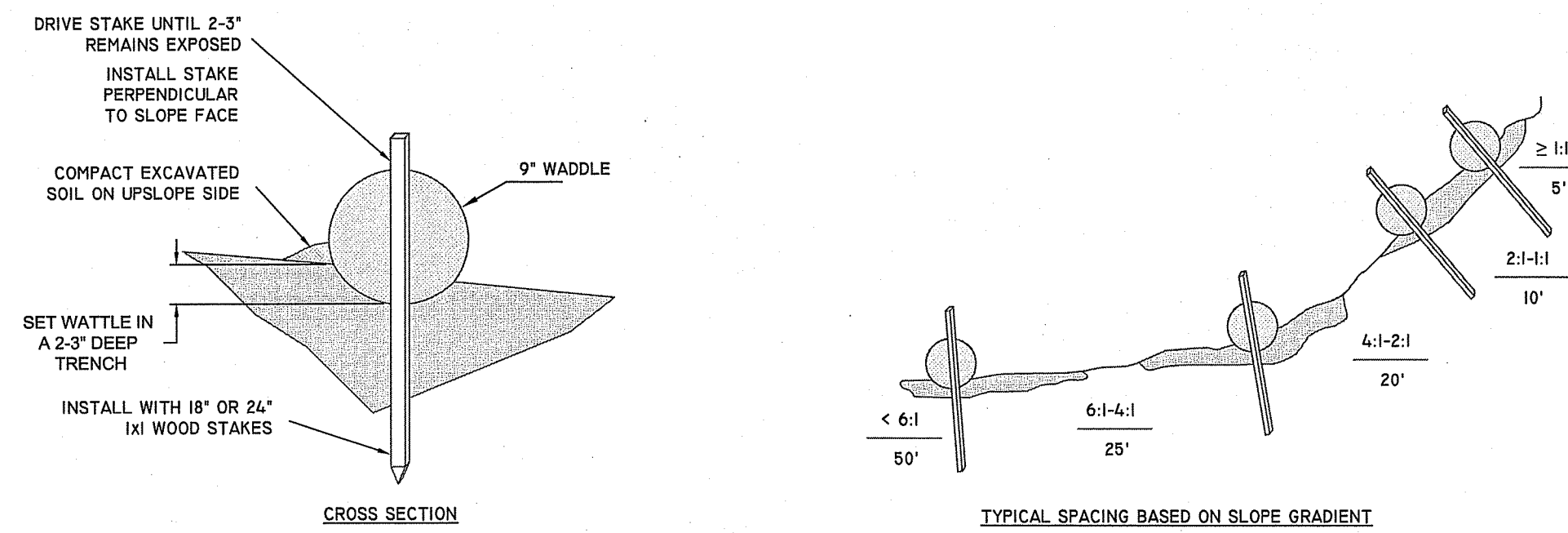
THE POTENTIAL FOR EROSION IS HIGH. DURING GRADING OPERATIONS, DISTURBED SLOPES WILL BE MULCHED AND VEGETATION ESTABLISHED TO PREVENT SEDIMENT EROSION TO THE SATISFACTION OF THE ENGINEER.

EROSION & SEDIMENT CONTROL NOTES

- EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. GRAVEL CONSTRUCTION ENTRANCE WILL BE INSTALLED BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF PROJECT AREA BEGINS. STABILIZATION OF ALL REGRADED AND SOIL STOCKPILE AREAS WILL BE INITIATED AND MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF NORTH SMITHFIELD REGULATIONS AND PER THE LATEST EDITION OF THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
- ADDITIONAL CONTROL MEASURES AND/OR ALTERNATE CONFIGURATIONS MAY BE REQUIRED TO ADDRESS EVOLVING SITE CONDITIONS. THESE ADDITIONAL CONTROLS WILL BE INSTALLED DURING CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE ENGINEER OR TOWN AGENCIES.
- THE SITE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION AND UNTIL THE SITE IS FULLY STABILIZED AND/OR THE OWNER HAS ASSUMED RESPONSIBILITY BY WRITING.
- SEEDING MIXTURE FOR FINISHED GRASSED AREAS WILL BE AS FOLLOWS:
 KENTUCKY BLUE GRASS = 45
 CREEPING RED FESCUE = 45
 PERENNIAL RYE GRASS = 10
 SEED TO APPLIED AT A RATE OF 8 LBS / 1000 S.F. FERTILIZER SHALL BE APPLIED AT A RATE OF 2 LBS / 1000 S.F. PLANTING SEASON SHALL BE APRIL 1 TO OCTOBER 15. AFTER OCTOBER 15 AREAS NOT SEEDED SHALL BE STABILIZED WITH STRAW WATTLES, HAY BALE CHECK DAMS, FILTER FABRIC OR WOODEN MULCH AS REQUIRED TO CONTROL EROSION.
- AREAS LEFT BARE BEFORE FINISH GRADING AND SEEDING IS ACHIEVED, SHALL RECEIVE A TEMPORARY SEEDING OF PERENNIAL RYE GRASS APPLIED TO A RATE OF 2 LBS / 1000 S.F. AT A DEPTH OF 1/2". LIMESTONE (EQUIVALENT TO BE 50% CALCIUM PLUS MAGNESIUM OXIDE) SHALL BE APPLIED AS SEEDBED PREPARATION AT A RATE OF 80 LBS / 1000 S.F.. WHERE GRASS PREDOMINATES, FERTILIZE ACCORDING TO A SOIL TEST AT A MINIMUM APPLICATION RATE OF 1 LB OF NITROGEN PER 1000 S.F. AREAS TO BE LEFT BARE BEFORE FINISH GRADING AND SEEDING OUTSIDE OF PLANTING SEASONS SHALL RECEIVE AN AIR-DRIED WOOD CHIP MULCH, FREE OF COURSE MATTER, TREATED WITH 12 LBS NITROGEN PER TON, APPLIED AT A RATE OF 185-275 LBS / 1000 S.F.
- CONTRACTOR SHALL BE ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFY THE PROPER TOWN AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLY FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
- THE CONTRACTOR SHALL REQUEST THE APPROPRIATE TOWNS AGENCIES TO INSPECT AND APPROVE THE INSTALLATION OF ALL EROSION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION. PERIODIC INSPECTIONS OF EROSION CONTROL MEASURES MAY BE PERFORMED BY THE AGENCIES, THE CONTRACTOR SHALL REPAIR, UPGRADE OR REPAIR ANY MEASURES THE AGENT MAY FEEL ARE IN NEED OF SUCH.
- STOCKPILES OF SOIL SHALL BE SURROUNDED BY A SEDIMENT BARRIER. SOIL STOCKPILES TO BE LEFT BARE FOR MORE THAN FIFTEEN (15) DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH, IF STOCKPILES ARE TO REMAIN FOR MORE THAN SIXTY (60) DAYS, FILTER FABRIC SHALL BE USED IN PLACE OF HAY BALES. SIDE SLOPES SHALL NOT EXCEED 2:1.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE LIFE OF THIS CONTRACT. DUST CONTROL SHALL INCLUDE BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED SOILS AND HAUL ROADS. CONTRACTOR SHALL CONTROL DUST TO PREVENT A HAZARD TO TRAFFIC ON ADJACENT ROADWAYS.
- SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES 1/4 TO 1/2 THE HEIGHT OF THE SILT FENCE OR HAY BALE, OR SILT SOCK.
- DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
- ALL FACILITIES USED AS TEMPORARY MEASURES SHALL BE CLEANED PRIOR TO BEING PUT INTO FINAL OPERATION.
- INFILTRATION BASINS ARE NOT TO BE USED FOR TEMPORARY STORMWATER RUNOFF COLLECTION DURING THE PROJECTS CONSTRUCTION.

STRAW WATTLE (OR SILT SOCK) DETAIL

NOT TO SCALE

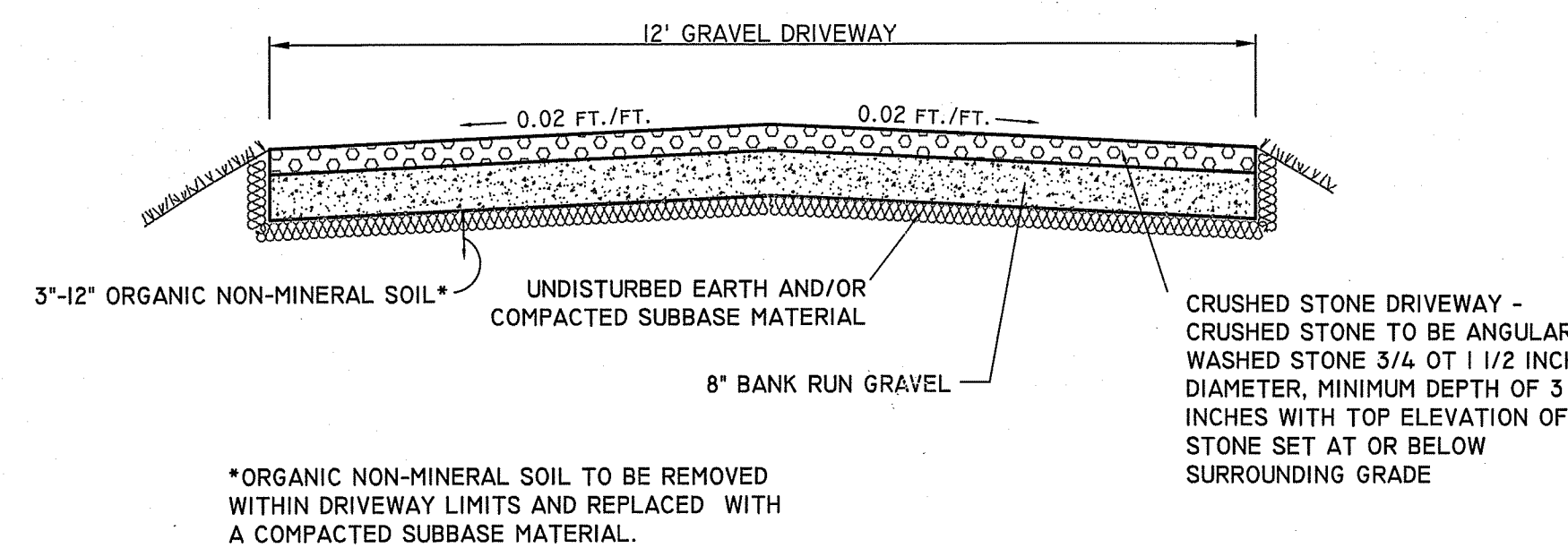


GENERAL NOTES

- BEGIN AT THE LOCATION WHERE WATTLE IS TO BE INSTALLED BY EXCAVATING 2-3" DEED x 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP SLOPE FROM THE ANCHOR TRENCH.
- PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
- SECURE THE WATTLE WITH 18-24" STAKES EVERY 3-4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE OF THE WATTLE LEAVING AT LEAST 2-3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE.
- CONTRACTOR IS RESPONSIBLE TO MAINTAIN INTEGRITY OF STRAW WATTLE FOR DURATION OF CONSTRUCTION.
- EROSION CONTROLS TO REMAIN UNTIL SOIL CONDITIONS STABILIZE.
- LOOSE HAY TO BE SPREAD ON AREAS OF EXPOSED LOAM & SEED UNTIL GERMINATION AND STABILIZATION OCCURS.

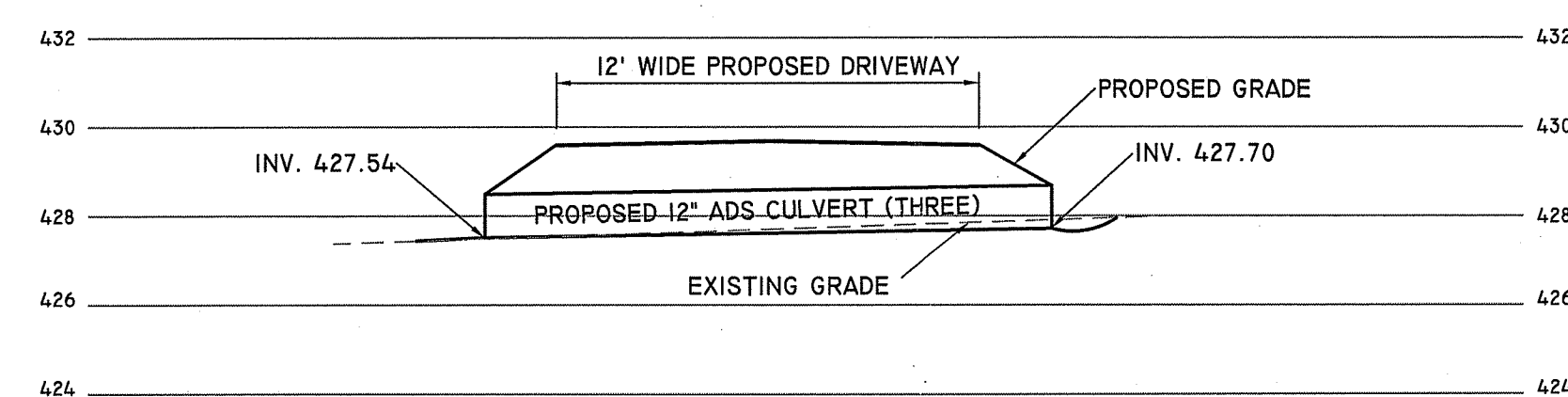
DRIVEWAY DETAIL

NOT TO SCALE



DRIVEWAY CROSS-SECTION A-A

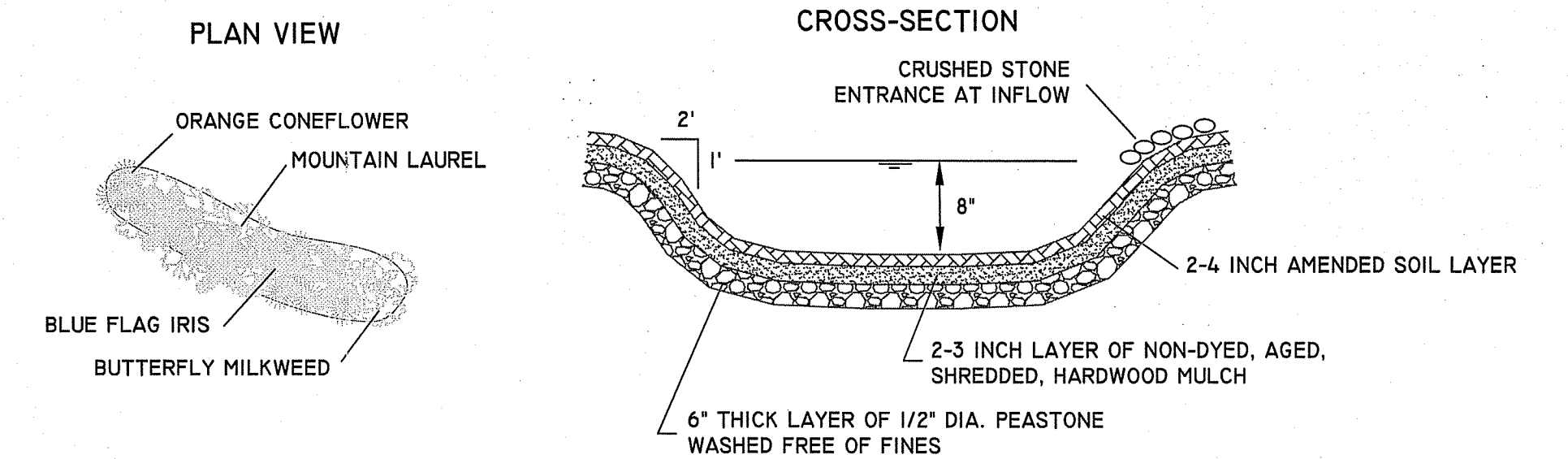
SCALE: HORIZONTAL - 1"= 5'
VERTICAL - 1"= 2'



RAIN GARDEN DETAIL

NOT TO SCALE

ROOF AREA: 1,400 SF (3,400 SF TOTAL)
RAIN GARDEN AREA: 144 SF
36 PLANTS



TREATMENT

RAIN GARDEN TO BE 8" DEEP WITH A 2 - 4 INCH AMENDED SOIL LAYER (50/50 MIXTURE OF THE EXCAVATED NATIVE SOILS AND MATURE ORGANIC COMPOST) AND A 2 - 3 INCH LAYER OF NON-DYED AGED SHREDDED HARDWOOD MULCH.

CONSTRUCTION

- A CRUSHED STONE ENTRANCE SHOULD BE INSTALLED AT THE INFLOW TO PREVENT CHANNELING.
- A BERM TO DETAIN STORMWATER SHOULD BE CONSTRUCTED ALONG THE DOWNHILL SIDE OF THE RAIN GARDEN, PERPENDICULAR TO THE SLOPE OF THE LAWN.
- BE SURE THAT THE SOIL WITHIN THE RAIN GARDEN AREA DOES NOT BECOME COMPACTED BY CONSTRUCTION ACTIVITIES (I.E. HEAVY MACHINERY). IF SOIL BECOMES SEVERELY COMPACTED IT MAY NEED TO BE TILLED AND AMENDED TO MAINTAIN PROPER

MAINTENANCE

- THE RAIN GARDEN SHALL BE INSPECTED FOLLOWING AT LEAST THE FIRST TWO PRECIPITATION EVENTS OF AT LEAST 1.0 INCH TO ENSURE THAT THE SYSTEM IS FUNCTIONING PROPERLY. THEREAFTER, THE RAIN GARDEN SHALL BE MONITORED AND MAINTAINED TO ASSURE PROPER FUNCTIONING, PLANT GROWTH AND SURVIVAL. PLANTS SHALL BE REPLACED ON AN AS-NEEDED BASIS DURING THE GROWING SEASON.
- SILT/SEDIMENT SHALL BE REMOVED FROM THE RAIN GARDEN WHEN THE ACCUMULATION EXCEEDS ONE INCH, OR WHEN WATER PONDS ON THE SURFACE OF THE RAIN GARDEN FOR MORE THAN 48 HOURS. THE TOP FEW INCHES OF MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH SOIL MIXTURE AND MULCH.
- PRUNING OR REPLACEMENT OF WOODY VEGETATION SHALL OCCUR WHEN DEAD OR DYING VEGETATION IS OBSERVED.
- SOIL EROSION GULLIES SHALL BE REPAIRED WHEN THEY OCCUR.
- FERTILIZER OR PESTICIDES SHALL NOT BE APPLIED TO PLANTS WITHIN RAIN GARDENS.
- PERENNIAL PLANTS AND GROUND COVERS SHALL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE VEGETATED GROUND COVER. ANNUAL PLANTS MAY ALSO BE USED TO MAINTAIN GROUND COVER.

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1-888-344-7233
OWNER OR CONTRACTOR TO CONTACT DIGSAFE 72 HOURS PRIOR TO ANY EXCAVATION.

RI Environmental Management
APR 10 2023
Office of Water Resources

DETAIL SHEET

PAUL D. CARLSON
No. 7142
REGISTERED PROFESSIONAL ENGINEER CIVIL

ASSESSOR'S PLAT 20 LOT 6
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PREPARED FOR: BERTRAM MALLE
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JOB # 20-147 SCALE: N/A DRAWN BY: LMB DATE: OCTOBER, 2022

REVISED:

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SHEET 3 OF 3