NATIVE GRASS ESTABLISHMENT PLOTS

PLOT NUMBER 1A - HERBICIDE/TILL
Plot Location: Subarea 1

PLOT NUMBER 1B - HERBICIDE/NO TILL
Plot Location: Subarea 1

PLOT NUMBER 2 - SOLARIZATION AND TILLAGE ONLY
Plot Location: Subarea 1

PLOT NUMBER 3A - TILLAGE ONLY
Plot Location: Subarea 1

PLOT NUMBER 3B - ACID pH
Plot Location: Subarea 1

SUB 2 LOCATION? #4 NATIVES ONLY?

FALLOWING DEMONSTRATION PLOTS

PLOT NUMBER 5A - SWATHING TO CONTROL RYEGRASS
Plot Location: Subarea 2

PLOT NUMBER 5B - FLAIL MOWING TO CONTROL RYEGRASS
Plot Location: Subarea 2

CONTROL PLOTS

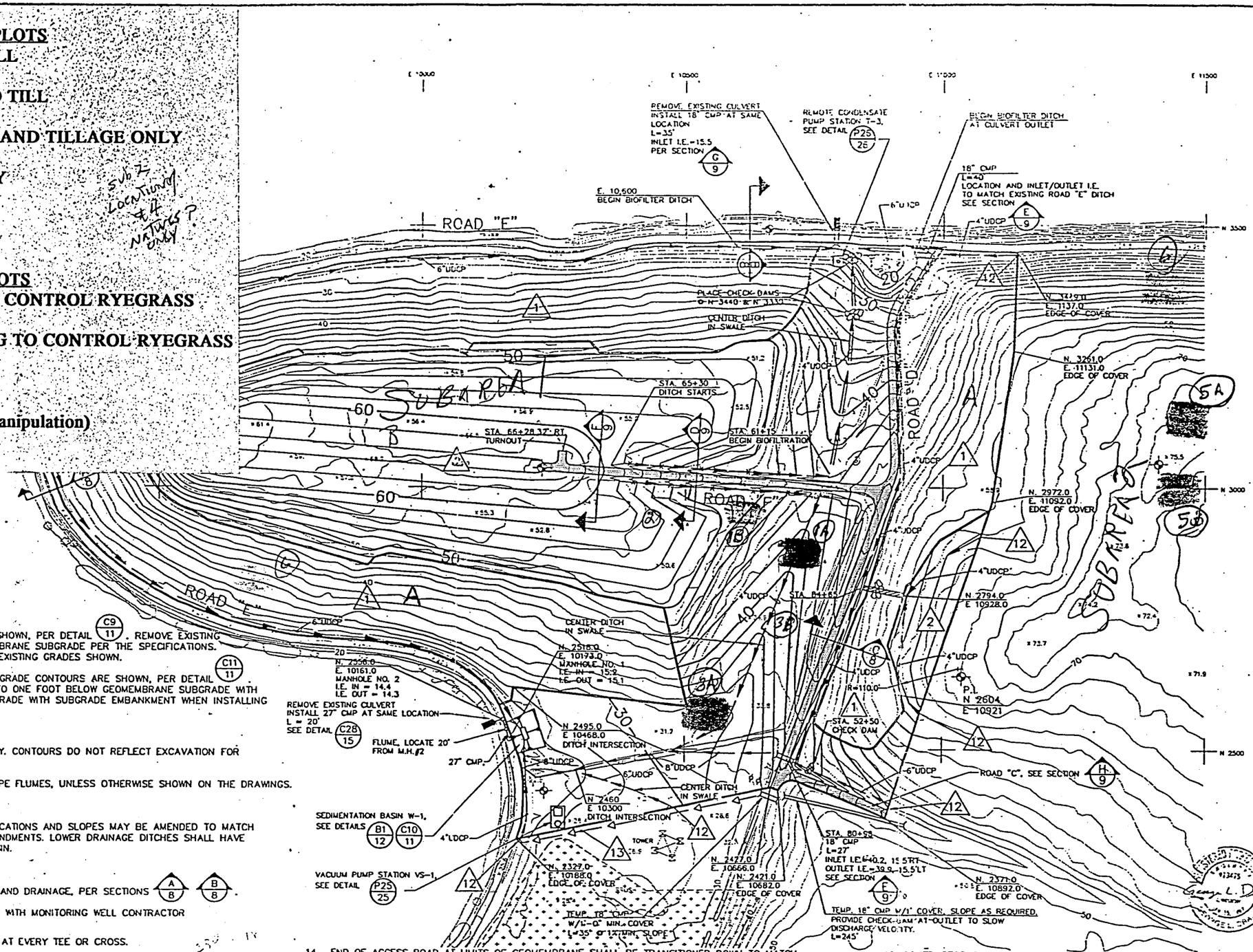
PLOT NUMBER 6 - CONTROL (No manipulation)
Plot Locations: Subarea 1 and 2

MONITORING WELLS, PROTECT IN PLACE, SEE DETAIL (C4/10)

MONITORING WELLS, TO BE ABANDONED BY OTHERS PRIOR TO CONSTRUCTION

APPROXIMATE LIMITS OF FINAL COVER TYPE "A" SEE DETAIL (C12/11) FOR TRANSITION TO FINAL COVER TYPE "B"

SOIL PROCUREMENT WORK, BY OTHERS



NOTES:

1. TYPE 'A' COVER SHALL BE INSTALLED ON EXISTING SLOPES, AS SHOWN, PER DETAIL (C9/11). REMOVE EXISTING TOPSOIL AND RECOMPACT EXISTING LOW PERM SOIL FOR GEOMEMBRANE SUBGRADE PER THE SPECIFICATIONS. GEOMEMBRANE SUBGRADE WILL GENERALLY BE 6 INCHES BELOW EXISTING GRADES SHOWN.

2. TYPE 'B' COVER SHALL BE INSTALLED WHERE GEOMEMBRANE SUBGRADE CONTOURS ARE SHOWN, PER DETAIL (C11/11). REMOVE EXISTING TOPSOIL AND LOW PERMEABLE SOIL AND FILL TO ONE FOOT BELOW GEOMEMBRANE SUBGRADE WITH SUBGRADE EMBANKMENT MATERIAL (FILL TO GEOMEMBRANE SUBGRADE WITH SUBGRADE EMBANKMENT WHEN INSTALLING BENTONITE MAT IN PLACE OF LOW PERMEABLE SOIL LAYER).

3. FOR ACCESS ROAD ALIGNMENTS SEE SHEET 6.

4. CONTRACTOR SHALL PLAN FOR DITCH EXCAVATION AS NECESSARY. CONTOURS DO NOT REFLECT EXCAVATION FOR DRAINAGE DITCHES.

5. PLACE QUARRY SPALL CHECKDAMS AT MID-SLOPE OF DOWN SLOPE FLUMES, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

6. SEE SHEET 10 FOR GEOMEMBRANE PENETRATION DETAILS.

7. UPPER DRAINAGE DITCHES SHALL MAINTAIN A MIN. 1% SLOPE. LOCATIONS AND SLOPES MAY BE AMENDED TO MATCH ACTUAL SITE CONDITIONS. ENGINEER MUST PREAPPROVE ALL AMENDMENTS. LOWER DRAINAGE DITCHES SHALL HAVE CONTINUOUS DRAINAGE TO CULVERT AND/OR SEDIMENTATION BASIN.

8. FOR DOWN SLOPE FLUME INLET AND OUTLET, SEE DETAIL (C25/14)

9. ROAD "E" ALIGNMENT AND DRAINAGE TO FOLLOW EXISTING ROAD AND DRAINAGE, PER SECTIONS (A/8) (B/8).

10. CONTRACTOR TO SCHEDULE EXTENSION OF MONITORING WELL H-1 WITH MONITORING WELL CONTRACTOR AS NECESSARY.

11. INSTALL CLEANOUT IN UDCP'S AT EVERY 300' O.C. MINIMUM AND AT EVERY TEE OR CROSS.

12. CAP END OF UDCP.

13. TEMPORARY DITCH IS A 2' DEEP 3H:1V V-DITCH. HYDROSEED AND PLACE EROSION CONTROL MAT IN TEMPORARY DITCH. SLOPE AT MINIMUM 0.5%.

14. END OF ACCESS ROAD AT LIMITS OF GEOMEMBRANE SHALL BE TRANSITIONED DOWN TO MATCH EXISTING GRADES AT 10% SLOPE. ROADWAY EMBANKMENT AND CSBC SHALL CONTINUE PAST LIMITS OF GEOMEMBRANE SIMULAR TO TYPE 1 SAND AND TOPSOIL IN DETAIL (C13/11)

15. LOCATIONS OF VERTICAL GAS WELLS AND HORIZONTAL GAS TRENCH RISERS ARE SHOWN, IN GENERAL, ON SHEET 4. SEE SHEETS 16-18 FOR DETAILED LOCATIONS.

16. CONTRACTOR SHALL NOT DAMAGE THE AREA BETWEEN THE WATERWAYS AND ROAD 'E' EXCEPT AS REQUIRED AT THE OUTLET CULVERTS. WORK AT CULVERTS SHALL BE CONTAINED TO MINIMIZE DAMAGE TO EXISTING VEGETATION. RESTORATION OF EXISTING VEGETATION SHALL BE PERFORMED AS QUICKLY AS POSSIBLE FOLLOWING REQUIRED CONSTRUCTION WORK.

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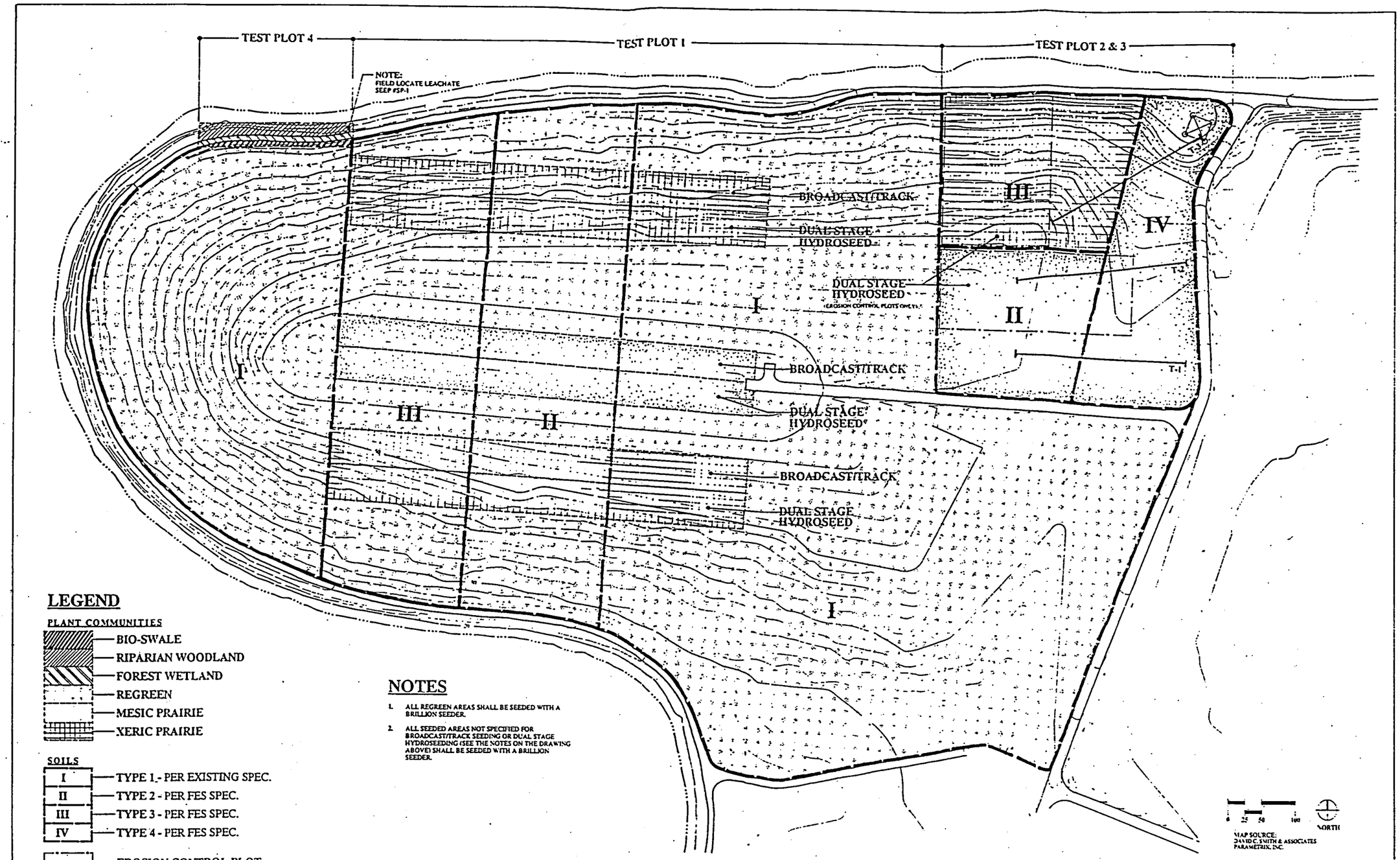
	NAME	DATE
DESIGNED:	JLU	11/91
CHECKED:	GA	11/91
DRAWN:	ACA/MK	11/91
CHECKED:	GA	11/91
DESIGN REVIEW:	EMF	11/91

METROPOLITAN SERVICE DISTRICT
Solid Waste Department
Jim Watkins, Engineering Manager
Dennis O'Neil, Project Manager

100 0 100 200
SCALE IN FEET

ST. JOHNS LANDFILL
CLOSURE OF SUBAREA 1
SA1 GRADING PLAN

SHEET: 5 OF 30
DATE: DECEMBER 1991
DWG NO.: 19190305



METROPOLITAN SERVICE DISTRICT
SOLID WASTE DEPARTMENT

FISHMAN ENVIRONMENTAL SERVICES

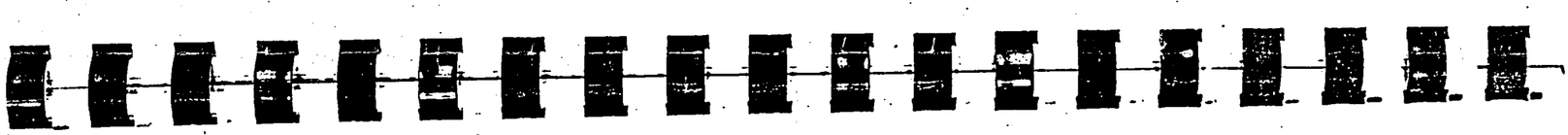
MARK G. WILSON - HORTICULTURIST • WES JARRELL • MIKE FAHA & ASSOCIATES - LANDSCAPE ARCHITECTS

SUBAREA 1 TEST PLOT PLAN

ST. JOHNS LANDFILL COVER VEGETATION PLAN

TABLE 3
SUBAREA 1 TEST PLOT SOIL PROFILES SUMMARY

SOIL PROFILE	SOIL TYPE 1	SOIL TYPE 2	SOIL TYPE 3	SOIL TYPE 4
C Sand B Subsoil A Topsoil **Total Depth**		1.0 ft 9 ins. - 6 ins. Existing topsoil plus 6 inches new subsoil 6 ins. - 3 ins. Compost disced into top 3 ins. **2.25 ft. subsoil**	1.5 ft. 9 ins. - 6 ins. Existing topsoil plus 6 ins. new subsoil 6 ins. - 3 ins. Compost disced into top 3 ins. **2.75 ft. subsoil**	
C Sand B Subsoil A Topsoil **Total Depth**		1.5 ft 6 ins. - 8 ins. New subsoil 4 ins. - 2 ins. compost disced into top 2 ins. **2.33 ft subsoil**	1.5 ft. - 3 ins. New subsoil - 3 ins. Compost disced into top 3 ins. **2.0 ft. subsoil**	
C Sand B Subsoil A Topsoil **Total Depth**				1.0 ft. 18 ins. - 15 ins. Existing topsoil plus 6 ins. imported subsoil 6 ins. - 3 ins. Compost disced into top 3 ins. **3.0 ft. subsoil**
C Sand B Subsoil A Topsoil **Total Depth**	1.5 ft. 6 ins. - 6 ins. Existing topsoil 6 ins. - 3 ins. Imported subsoil 3 ins. compost disced 6 ins. deep **2.5 ft.**	1.5 ft. 6 ins. - 6 ins. Existing topsoil 6 ins. - 3 ins. Imported subsoil 3 ins. compost disced 6 ins. deep **2.5 ft. deep**	1.5 ft. 6 ins. - 6 ins. Existing topsoil 6 ins. - 3 ins. Imported subsoil 3 ins. compost disced 6 ins. deep **2.5 ft. deep**	



TP3.Erosion plots.

Within the shrub test plots, we have the continuous long slopes needed to effectively test the effects of soil types on sensitivity to erosion. As seen from the test plot figure, the steep northwest portion of the test area will be split into a stretch which receives cull logs placed over the soil. These logs are in place to retain any surface runoff water longer on the site, thereby increasing infiltration rates and decreasing the potential for gully formation. In addition, they provide increased diversity of microhabitat and, as they decompose, add stable organic matter to the soil. We will intentionally use cull logs which are already infected with wood rot fungi, thus increasing the potential decomposition rates.

TP4.Bioswale/riparian woodland test plots

We propose to close off the road from just east of Seep Leachate SP-1 as designated on maps, westward to the point at which drainage breaks from north to south. The road should be regraded to provide a counterslope flow. The swale should be broken up with small check dams at 50' intervals. The dams should be as high as possible without causing surface water to overflow the banks into the slough.

Additional low permeability (10^{-5}) soil should be placed on top of the original soil to minimize infiltration and keep water on the site longer (see Figure 2).

The bioswale area will be planted with the sod mats described in Section 6.1.4. In addition, the areas on the banks themselves will be planted with shrubs.

The riparian zone below the bioswale will be densely planted with native forested wetland and riparian woodland species.

See the Soil Profile Summary Chart, the Subarea 1 Test Plot Plan and the seeding specifications elsewhere in Section II of this report.