

NARRATIVE

Project Description

The purpose of the project is to construct two large commercial buildings with associated paved roads and parking area. Another building will be added in the future. The site is 7.2 acres located in Copiah County, 1/2 mile southwest of Hazlehurst, Mississippi, off Terri Road (see Vicinity Map). The entire site will be disturbed at some point during construction.

Site Description: before

The site has rolling topography with slopes generally 4 to 6 percent. Slopes steepen to 10 to 20 percent in the northwest portion of the property where a small, healed-over gully serves as the principal drainageway for the site. The site is now covered with volunteer heavy, woody vegetation, predominantly pines, 15 to 20 feet high. There is no evidence of significant erosion under present site conditions. The old drainage gully indicates severe erosion potential and receives flow from 5 acres of woods off-site. There is one large oak tree, located in the western central portion of the property, and a buffer area, fronting Terri Road, that will be protected during construction.

Site Description: after

Impervious areas will increase from 0 to 1.07 acres (parking lot, roofs) and land use will change on 4.57 acres from wooded to grass. The remainder of the property will be in buffer zone, waterways, etc. Increases in peak runoff and total runoff will occur due to these changes and will be addressed.

The 10 year, 24 hour storm event will be used to design stormwater runoff controls to meet predevelopment conditions. The 10 year, 24 hour storm will also be used to design construction sediment and erosion control practices. The 2 year, 24 hour storm will be used to design protection of measures during construction.

Adjacent Property

Land use in the vicinity is commercial/industrial. The land immediately to the west and south has been developed for industrial use. Areas to the north and east are undeveloped and heavily wooded, primarily in volunteer pine. Hocutt Creek, the off-site outlet for runoff discharge, is presently a well-stabilized, gently flowing perennial stream. Sediment control measures will be taken to prevent damage to Hocutt Creek. Approximately 5 acres of wooded area to the east contribute runoff into the construction area.

Soils

The soil in the project area is mapped in the soil survey as Smithdale sandy loam in D and E slope classes. Smithdale soils are considered moderately well to somewhat poorly drained with permeability rates up to 6 inches/hour at the surface but less than 0.6 inches/hour in the subsoil. The surface layer is brown sandy loam about 7 inches thick. The upper part of the subsoil, to a depth of about 28 inches, is yellowish red, sandy clay loam. The middle part to 39 inches is yellowish red sandy clay loam with pale yellow sand pockets. The lower part of the subsoil to a depth of 80 inches is a red sandy loam. The soil erodibility factor (K value) ranges from 0.28 at the surface to 0.24 in the subsoil.

Due to the slow permeability of the subsoil that will be exposed during grading, a surface wetness problem with high runoff is anticipated following significant rainfall events. No groundwater problem is expected. A small amount of topsoil exists on-site and will be stockpiled for use in landscaping.

Planned Erosion, Sediment, and Stormwater Control Practices

1. Sediment Basin #1

A sediment basin will be constructed in the northwest corner of the property. All water from disturbed areas, about 6.4 acres, will be directed to the basin before leaving the site (NOTE: The undisturbed areas to the east and north could have been diverted, but this was not proposed because it would have required clearing to the property line to build the diversion and the required outlet structure.)

After construction this sediment basin will be utilized as a detention basin.

2. Construction Entrance

A temporary gravel construction entrance will be installed near the northwest corner of the property. During wet weather it may be necessary to wash vehicle tires at this location. The entrance will be graded so that runoff water will be directed to an inlet protection structure and away from the steep fill area to the north.

3. Storm Drain Inlet Protection

A temporary block and gravel drop inlet protection device will be installed at the drop inlet located on the south side of the construction entrance. Runoff from the device will be directed into the sediment basin. (NOTE: The presence of this device reduces the sediment load on the sediment basin and provides sediment protection for the pipe. In addition, sediment removal at this point is more convenient than from the basin.)

4. Diversion

Temporary diversions will be constructed above the 3:1 cut slopes south of buildings A and B to prevent surface runoff from eroding these banks. (NOTE: Sediment-free water may be diverted away from the project sediment basin.) A temporary diversion will be constructed near the middle of the disturbed area to break up this long, potentially erosive slope should the grading operation be temporarily discontinued. A temporary diversion will be constructed along the top edge of the fill slope at the end of each day during the filling operation to protect the fill slope. This temporary diversion will outlet to the existing undisturbed waterway near the north edge of the construction site and/or to the temporary inlet protection device at the construction entrance as the fill elevation increases.

5. Level Spreader

A level spreader will serve as the outlet for the diversion east of building A and south of building B. The area below the spreader is relatively smooth and heavily vegetated with a slope of approximately 4 percent.

6. Tree Preservation and Protection

A minimum 2.0 foot high protective fence will be erected around the large oak tree at the dripline to prevent damage during construction. Sediment fence materials may be used for this purpose.

7. Land Grading

Heavy grading will be required on approximately 4.7 acres. The flatter slope after grading will reduce the overall erosion potential of the site. The buildings will be located on the higher cut areas, and the access road and open landscaped areas will be located on fill areas.

All cut slopes will be 3:1 or flatter to avoid instability due to wetness, provide fill material, give an open area around the buildings, and allow vegetated slopes to be mowed. Cut slopes will be fine graded immediately after rough grading; the surface will be disked and vegetated according to the Vegetation Plan.

Fill slopes will be 2:1 with fill depths as much as 12 to 15 feet. Fill will be placed in layers not to exceed 8 inches in depth and compacted. (NOTE: Fills of this depth have detailed compaction specifications in the general construction contract. These specifications are not part of the erosion, sediment, and stormwater control plan.)

The fill slope in the north portion of the property is the most vulnerable area to erosion on the site. Temporary diversions will be maintained at the top of this fill slope at all times, and the filling

operation will be graded to prevent overflow to the north. Filling will be done as a continuous operation until final grade is reached. The paved road located on the fill will be sloped to the south and will function as a permanent diversion. The area adjacent to the roads and parking area will be graded to conduct runoff to the road culverts. Runoff water from the buildings will be guttered to the vegetated waterways. The finished slope face to the north will not be back-bladed. The top 2 to 6 inches will be left in a loose and roughened condition. Plantings will be protected with mulch, as specified in the Vegetation Plan.

A minimum 15-foot undisturbed buffer zone will be maintained around the perimeter of the disturbed area. (NOTE: This will reduce water and wind erosion, help contain sediment, reduce dust, provide noise abatement, and reduce final landscaping costs.)

8. Sediment Basin #2

A small sediment basin will be constructed at the intersection of the existing road ditch and waterway number 3 to protect the road ditch. Approximately 2 acres of disturbed area will drain into this basin.

After construction this sediment basin will be utilized as a detention structure.

9. Silt Fence

A silt fence will be constructed around the topsoil stockpile and along the waterway berm adjacent to the deep cut area as necessary to prevent sediment from entering the waterways.

10. Storm Drain Inlet Protection

Permanent sod drop inlet protection will replace the temporary block and gravel structure when the contributing drainage area has been permanently seeded and mulched.

11. Grassed Waterway

Grass-lined waterways with temporary straw-net liners will be constructed around buildings A and B to collect and convey site water to the project's sediment basin.

Should the disturbed areas adjoining the waterways not be stabilized at the time the waterways are vegetated, a silt fence will be installed adjacent to the waterway to prevent waterway siltation.

12. Lined Waterway or Outlet

A riprap lined waterway will be constructed in the old gully along the north side of the property starting in the northwest corner after all other construction is complete. This waterway will replace the old gully as the principal outlet from the site.

13. Construction Road Stabilization

As soon as final grade is reached on the entrance road, the subgrade will be sloped to drain to the south and stabilized with a 6-inch course of D.O.T. standard size ABC stone. The parking area and its entrance road will also be stabilized with ABC stone to prevent erosion and dust during the construction of the buildings prior to paving.

14. Rock Outlet Protection

A riprap apron will be located at the outlet of the three culverts to prevent scour.

15. Surface Roughening

The 3:1 cut slopes will be lightly roughened by disking just prior to vegetating, and the surface 4 to 6 inches of the 2:1 fill slopes will be left in a loose condition and grooved on the contour.

16. Buffer Zone

A 151 buffer zone will be maintained on the perimeter of the property. Native pines will be maintained. After construction is completed, trees will be thinned and undergrowth controlled according to final landscape plans.

17. Dust Control

Dust control is not expected to be a problem due to the small area of exposure, the undisturbed perimeter of trees around the site, and the relatively short time of exposure (not to exceed 9 months). Should excessive dust be generated, it will be controlled by sprinkling.

18. Retention Basin

A retention basin will be constructed to treat the first 1/2" of runoff from the parking lot in front of Building A. A smart box will be used to divert runoff in excess of the first 1/2" to a stable outlet waterway.

19. Concrete Grid and Modular Pavement

The utility drives to the north of buildings A and B will be paved with modular pavement since there will be low foot traffic in these areas. Vegetation will be plugged Zoysia. This will decrease runoff from and increase infiltration in this area.

20. Temporary Seeding

Temporary seeding will be used according to the vegetative plan whenever disturbed areas are to be unworked for more than 30 days.

21. Permanent Seeding

All disturbed areas will be permanently seeded (or sodded) once final grade is obtained according to the vegetative plan. Permanent cover will not be certified until after a minimum of 6 weeks of establishment and at least 1/2" of rainfall has occurred.

22. Detention Basin (Converted Sediment Basins #1 and #2)

Sufficient temporary storage of runoff will be constructed on-site to allow the peak runoff after construction to be designed to match the pre-construction peak runoff. Temporary sediment basins during construction will be converted to detention basins after construction, when all permanent vegetation has been established. This will include a final removal of accumulated sediment to restore required detention volume.