

AMENDED RESPONSE PLAN FOR COLISEUM BOULEVARD PLUME

**Submitted to:
The Alabama Department of Environmental
Management**

January 5, 2001



DEPARTMENT OF TRANSPORTATION

AMENDED RESPONSE PLAN FOR COLISEUM BOULEVARD PLUME

JANUARY 4, 2001

Introduction

The Alabama Department of Transportation ("ALDOT"), in cooperation with the Alabama Department of Environmental Management ("ADEM"), has been performing a comprehensive investigation of soil and groundwater in the Coliseum Boulevard area due to the discovery on an adjacent property of trichloroethylene ("TCE"), a common industrial solvent, in the groundwater. After an initial series of investigations, ALDOT entered into a Voluntary Assessment Agreement with ADEM to continue the investigation. The investigation has been focused on the ALDOT complex and on other areas west of Fairground Road. In addition to soil and groundwater investigations, samples of surface water in a concrete-lined ditch east of Coliseum Boulevard were taken. Concentrations of TCE in these samples have fluctuated, at times showing small amounts of TCE and at other times showing no detectable TCE. Based on these results, as well as the need to obtain additional information about the geology and concentrations of TCE in the groundwater east and west of Coliseum Boulevard, ALDOT submitted to ADEM a plan for an expanded investigation. ALDOT currently intends to commence the additional investigation on January 15, 2001.¹

Also as a result of the small concentrations of TCE being found in the surface water in the concrete-lined ditch east of Coliseum Boulevard, ADEM directed that immediate steps be taken to limit or eliminate the public's potential access to the ditch. The State Toxicologist, Dr. Neil Sass, indicated that, although the levels of TCE found in the surface water in the ditch only slightly increased the risk of potential exposure, the installation of a barrier, such as a silt or storm fence, to prevent access was sufficient. ALDOT immediately installed a temporary construction safety fence. Then, ALDOT submitted a "Provisional Remedial Fence for Ditch at Coliseum Boulevard" plan to ADEM on December 8, 2000.

ADEM, the City of Montgomery, and the Alabama Department of Public Health ("ADPH"), have submitted comments to the proposed plan. These submissions, as well as meetings held and conversations had with ADEM, included not only comments on the details of the fence itself, but

¹ Initiation of this work is conditioned on gaining the property owner's permission for access.

also suggested that the scope of work be expanded not only to quickly eliminate the immediate problem of the public's access to the ditch, but also to address certain other issues, including: 1) remediation of the surface water contamination in the ditch, 2) investigation and remediation of certain areas of the groundwater plume that have been found to be substantially higher than others, and 3) investigation to determine the extent of TCE in the groundwater. All of these comments have been taken into consideration and, in cooperation with these governmental entities and agencies, ALDOT is submitting this Amended Response Plan.

The changes in this Amended Response Plan from the first plan submitted to ADEM are twofold. First, to the extent it was not already made clear in the original plan, ALDOT emphasizes that its proposal to erect a fence is a temporary remedy, and is not a permanent solution to the issue of contamination in the surface water in the concrete ditch. The fence is a short-term remedy that can be implemented quickly to eliminate casual and unintentional entry. The fence, while not perceived as attractive to the residents, is the quickest interim solution for the potential exposure of the public to the TCE found in the surface water in the ditch. ALDOT considered other options, such as installing a concrete pipe and covering the ditch. However, ALDOT found unacceptable, and believes ADEM, ADPH, the City and the nearby residents would find similarly unacceptable, the additional time that would be needed to engineer and obtain permits for such an effort. ALDOT also was concerned that any piping and covering of the ditch could 1) actually interfere with and delay subsequent investigation and remediation efforts, 2) result in simply moving the contamination to a different location, and 3) possibly present a new and hazardous condition. Therefore, ALDOT concluded that the fence presented the most expedient and technically supportable means to immediately eliminate or reduce the public's access and exposure to the surface water in the concrete ditch. ALDOT understands that both ADEM and the United States Environmental Protection Agency have approved similar fence plans on other sites.

The second change from the first plan submitted to ADEM is that the scope of work described in this document has been substantially broadened. In addition to the installation of the fence, ALDOT is including a plan for evaluating and implementing appropriate remediation technologies for 1) the surface water in the ditch, 2) the areas within the groundwater plume

exhibiting higher concentrations of TCE, and 3) the entire plume itself.² Available data is currently being reviewed in order to not only consider remediation alternatives, but also to evaluate what additional data is needed before the applicability and effectiveness of the different available remediation technologies can be decided. As set out in this plan, ALDOT is already moving forward with this evaluation.

Finally, ALDOT will continue to work with ADEM and other appropriate agencies, and to continue to keep the public and community involved in the process, to keep the public and community informed about developments and the results of the additional investigations, as well as the remediation alternatives that will be presented for consideration as a result of the additional investigation.

After a discussion of the fence installation, this document provides a general description of the additional investigation needed to evaluate and select remedial alternative. Attached to this plan is the outline of a workplan that ALDOT will submit for this investigation within 30 days.

Goals Related to the Temporary Fence

ALDOT's plan is to erect an eight-foot chain link fence along the banks of the concrete-lined ditch that begins just east of Coliseum Boulevard and ends at Northern Boulevard ("East Coliseum Ditch Area"). This height and structure should prevent casual or unintentional entry into the ditch. This fence is temporary and should serve as the most effective and rapid response to concerns that may be associated with the ditch as an exposure pathway.

This proposal to erect a fence along the banks of the ditch is based in part on the ADPH Toxicological Evaluation performed by State Toxicologist Dr. Neil Sass (an electronic version of his assessment was included as Attachment C to the original plan and is not being included again here), the Preliminary Assessment prepared by the ADEM and approved by the United States Environmental Protection Agency, and the monitoring data from samples taken from surface water

²As stated in the first plan, ALDOT continues to deny liability for the TCE contamination, and reserves its right to pursue reimbursement of these remediation costs.

in the ditch by TTL, Inc. and ADEM. Although it is unknown precisely how TCE appeared in the concrete ditch, it is possible that groundwater at times interfaces with the ditch and that either weep holes in the sides of the ditch or construction joints in the base and sides of the concrete-lined ditch allow groundwater to seep into the ditch. According to the State Toxicologist, the presence of TCE in the surface water in the ditch increases the risk of exposure slightly but, because the levels of TCE in the surface water are so small, that risk is still well below risk levels established by EPA, OSHA and ACGIH.

In addition, the State Toxicologist suggested that "the installation of a barrier around the area where surface water containing TCE has been found would be sufficient to prevent access to adults and children who otherwise may desire to enter these areas." Consistent with this professional opinion, the installation of a temporary fence around the ditch is the most expedient and effective means of preventing exposure to the community from the surface water in the ditch.

In addition to preventing exposure to the surface water in the ditch, this plan allows for continued monitoring and collection of data. A response plan that is more invasive to the ditch could prevent the collection of valuable monitoring and sampling data, exacerbate the TCE in the groundwater, and result in inappropriate decisions about a long-term remedy.

At the time of this submission, an agreement with the property owners to gain access to the ditch for installation of the fence and to conduct other investigative activities requested by ADEM has not been obtained. The schedule for implementing this plan is contingent on access being granted either to ALDOT or its contractors. ALDOT shall maintain the fence structure itself and is leaving to the property and/or ditch owners the maintenance of the ditch.

A summary of the sampling and analysis of surface waters and a detailed description of the fence also was provided in the original submission and will not be repeated here.

Construction of Temporary Fence

ALDOT has modified the fence design based on all the comments submitted to the design of the fence itself. Included with this plan is the new fence drawing which illustrates the new design, which simply is the erection of an eight-foot chain link fence, with tension wire for structural integrity. Also included is the layout of the temporary fence. ALDOT will monitor the

fence to determine its effectiveness as a barrier, and is considering the installation of 24-hour video monitoring to assist in that monitoring effort. Signs will also be posted on the outside of the fence so that they are clearly visible to anyone approaching the fence, to act as an additional deterrent.

Remediation Investigation

ALDOT proposes the following phased approach to expedite the implementation of corrective measures for the East Coliseum Ditch Area and, ultimately, the implementation of a remedial plan for the Coliseum Boulevard Plume. The work plan outlined represents our conceptual approach to development of a Work Plan which assures that the East Coliseum Ditch Area receives the highest priority for assessment and clean-up.

Implementation of Rapid Response Plan with Interim Corrective Measures

The goal of Phase I is to establish an interim remedial system to divert or intercept contaminated groundwater before it enters the ditch.

An assessment focused on the East Coliseum Ditch Area will begin immediately following the installation of the fence (as detailed above). The assessment will be conducted in order to understand the nature and extent of the TCE contamination to the groundwater and to implement an interim measure to control the release of groundwater containing TCE into the ditch. The assessment of the East Coliseum Ditch Area will include a data collection/field investigation component and an interim corrective measure design/implementation component. The field investigation component of the East Coliseum Ditch Area assessment, part of which has already been submitted to ADEM for ALDOT by TTL that will begin on January 15, 2001, will include sampling of area soils, groundwater, and surface water. The interim corrective measures portion of the assessment will use appropriately engineered methods to mitigate or eliminate the presence of TCE in the concrete ditch.

The additional field investigation will focus on sampling and analysis of environmental media in the immediate vicinity of the ditch. Appropriate subsurface investigation technology will

be used to collect both subsurface soil and groundwater samples for laboratory analysis. Information gathered from samples obtained using the Geoprobe would permit the physical characterization of the shallow subsurface in the ditch area. Permanent groundwater sampling points (monitoring wells) will also be used in field investigation to permit the temporal tracking of TCE concentrations over the area. Data on the shallow aquifer, such as local hydraulic conductivity and groundwater levels, will also be collected. Finally, samples of surface water will be collected. The quality of the surface water with respect to any TCE impact will be evaluated.

The data generated from the field investigation will be used in conjunction with computer simulations to build a working model of the subsurface groundwater/surface water relationship in the vicinity of the East Coliseum Ditch Area. This working model will be used to assist in the selection and rapid implementation of an appropriate interim corrective measure. The overriding goal of the interim corrective measure will be to find an appropriate technology to mitigate or eliminate the presence of TCE in the concrete-lined ditch. The design and implementation of the interim corrective action will be completed in accordance with sound engineering practices and stringent quality control measures.

*Implementation of a Comprehensive Site Assessment to Assess Horizontal Plume
Extent and Identify Long Term Remediation Alternatives*

Following completion (or concurrently with) these activities, ALDOT will continue and further expand upon its comprehensive site assessment of the Coliseum Boulevard Plume. The goals of this phase will be:

- To obtain additional data and to further define the extent of the plume.
- To identify high concentrations of soil and groundwater contaminants for removal and/or treatment
- To develop a remedial plan for the site, as appropriate

Shallow soil and groundwater contamination will be assessed first through the use of appropriate subsurface investigation technology and the installation of permanent monitoring wells. Data from this assessment may be evaluated using computer models to simulate contaminant fate

and transport. If required, based on the results of the shallow zone investigation, the deep groundwater zone underlying the clay retarding unit at the site will be evaluated.

Data from the comprehensive assessment will be used to identify remedial alternatives for the site that will be protective of human health and the environment. These alternatives and recommendations will be included in a final report to ADEM to be submitted within 90 days of defining the horizontal extent of contamination.

Communications

It is understood that proactive and sustained communications and community outreach is critical to achieve the best outcome of this project. To that end, a strategic community relations plan will be developed and implemented in conjunction with the Rapid Response Plan, Interim Corrective Measures, and Comprehensive Site Assessment process.

Elements of that plan may include, but are not limited to: a informational web site, specific community outreach initiatives (e.g., public meetings, availability sessions), a public repository of all the assembled information updated on a regular basis, and a 24-hour automated information line providing callers with updates and schedules. A media outreach and briefing section will also be included in the plan to help ensure the media are provided project updates and prompt access to public information.

Finally, a Monthly Progress Report will be prepared for ADEM documenting schedule updates and project achievements.

DRAFT REMEDIATION INVESTIGATION WORK PLAN OUTLINE

Coliseum Boulevard Site Montgomery, Alabama

Implementation of Rapid Response Plan with Interim Corrective Measures

1.0 Rapid Response Plan

- 1.1 Develop Site-Specific Health and Safety Plan
- 1.2 Obtain Access to Site
- 1.3 Installation of Temporary Security/Barrier Fence Along the East Ditch

2.0 East Coliseum Ditch Area Assessment

2.1 Phase I Assessment Activities

- 2.1.1 Develop Site-Specific Health and Safety Plan
- 2.1.2 Obtain Access to Site
- 2.1.3 Shallow Soil Assessment
 - 2.1.3.1 Subsurface Investigation
 - 2.1.3.2 Collection and Analysis of Samples
- 2.1.4 Shallow Groundwater Assessment
 - 2.1.4.1 Subsurface Investigation
 - 2.1.4.2 Collection and Analysis of Samples
 - 2.1.4.3 Installation of Monitoring Wells
 - 2.1.4.4 Water Level Survey
 - 2.1.4.5 Aquifer Recharge Characterization
 - 2.1.4.6 Data Analysis
- 2.1.5 Groundwater/Surface Water Assessment
 - 2.1.5.1 Collection and Analysis of Samples
 - 2.1.5.2 Groundwater Flow Modeling
 - 2.1.5.3 Groundwater Contamination Fate & Transport Modeling
 - 2.1.5.4 Determination of Groundwater and Surface Water Connection
Using Data from the Groundwater Assessment

2.2 Interim Corrective Measures Activities

- 2.2.1 Develop Site-Specific Health and Safety Plan
- 2.2.2 Analysis of Assessment Data
- 2.2.3 Development of Interim Measure Alternatives
- 2.2.4 Selection of an Interim Corrective Measure
- 2.2.5 Obtain Regulatory Permits
- 2.2.6 Interim Measure Design
- 2.2.7 Receive Permit Approval
- 2.2.8 Interim Measure Implementation
- 2.2.9 Performance Monitoring

Implementation of a Comprehensive Site Assessment to Assess Horizontal Plume Extent and Identify Long Term Remediation Alternatives

3.0 Additional Data Analysis

- 3.1 Previous Investigations
- 3.2 Potable Well/Receptor Survey
- 3.3 Data Quality Assessment
- 3.4 Data Analysis
 - 3.4.1 Geological/Hydrogeological
 - 3.4.2 Chemical/Contaminant Plume

4.0 Comprehensive Assessments of Plume

- 4.1 Develop Site-Specific Health and Safety Plan
- 4.2 Obtain Access to Sample Locations
- 4.3 Shallow Zone Assessment
 - 4.3.1 Soil Assessment
 - 4.3.2 Groundwater Assessment
- 4.4 Deep Zone Assessment (if required, based on results of shallow assessment)
 - 4.4.1 Deep Stratigraphic Boring
 - 4.4.2 Deep Monitor Well Installation
 - 4.4.3 Deep Groundwater Sampling

5.0 Sample Handling, Storage and Shipment

6.0 Quality Assurance/Quality Control

- 6.1 Field and Physical Testing Investigations
- 6.2 Sample Collection
- 6.3 Laboratory Analysis

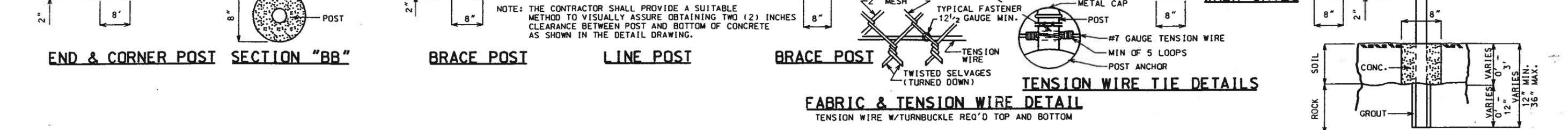
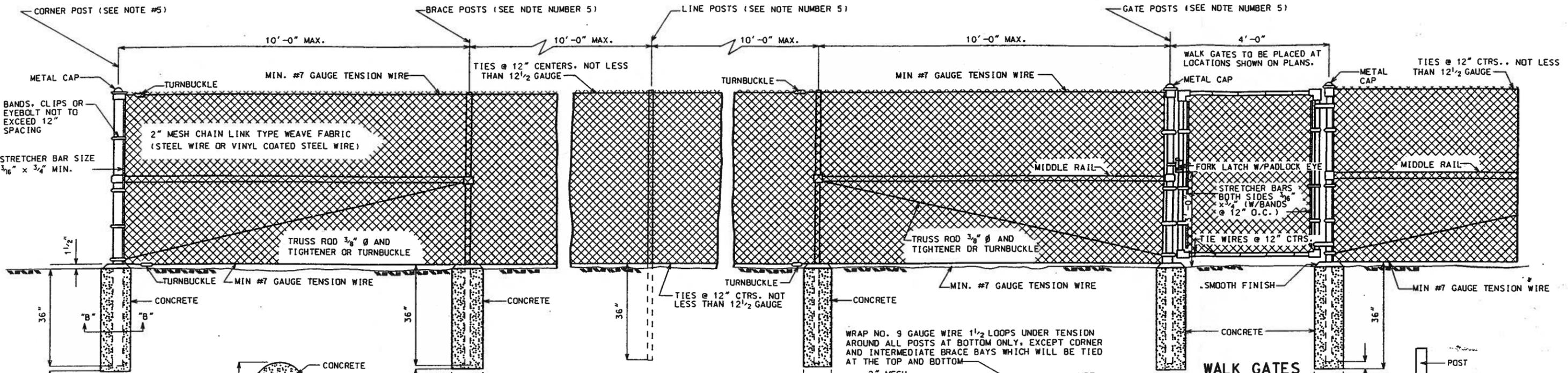
7.0 Report Preparation

8.0 Communications

- 8.1 Community Relations Plan
 - 8.1.1 Web Site
 - 8.1.2 Community Outreach
 - 8.1.3 Public Repository
 - 8.1.4 24-Hour Information Line
- 8.2 Monthly Progress Reports to ADEM

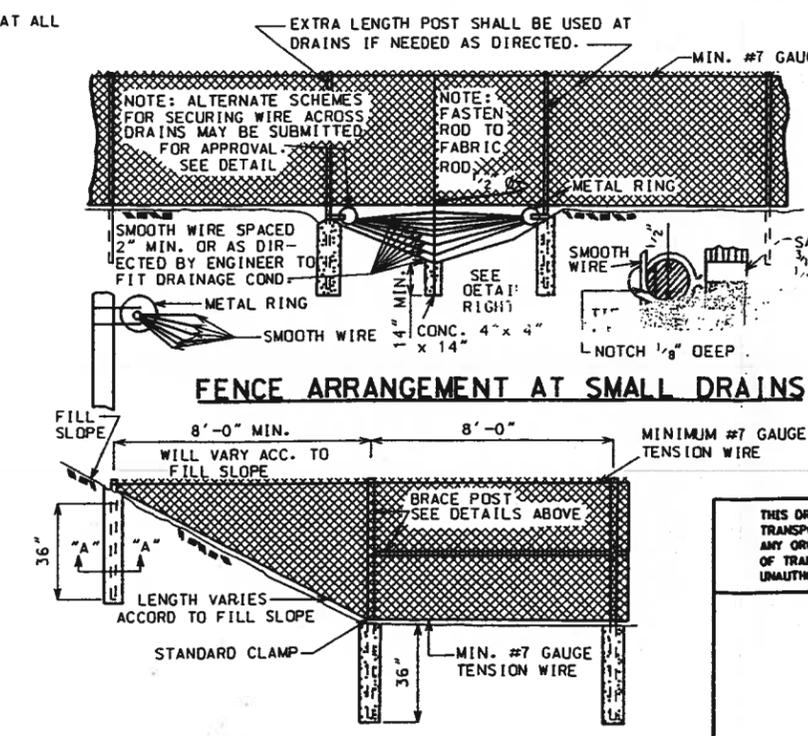
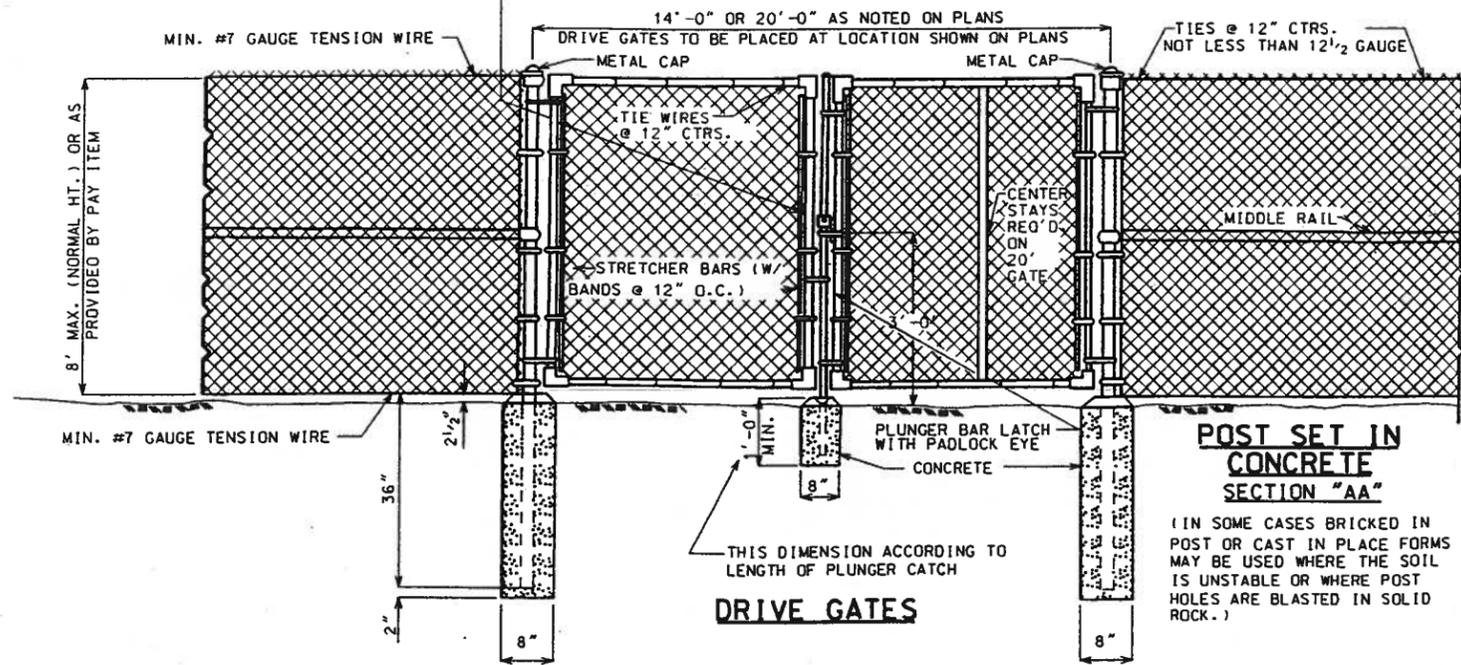
9.0 Project Schedule

FYVA REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	AL				



NOTE: STRETCHER BARS FOR GATES ARE REQUIRED ON BOTH SIDES OF EACH GATE. STRETCHER BARS (SIZE 3/16" x 3/4") MINIMUM ANCHOR WITH BANDS NOT EXCEEDING 12" SPACING OR OTHER APPROVED ANCHOR.

NOTE: ONE PULL POST ASSEMBLY AS SHOWN WILL BE REQUIRED FOR EACH 500 FT. OF FENCE AND AT ALL SHARP BREAKS IN TERRAIN AND CHANGES IN DIRECTION OF 10° & OR MORE



POST INSTALLATION OVER ROCK

- GENERAL NOTES**
- HOG RINGS SHALL BE GALVANIZED OR ALUMINUM ALLOY.
 - THE TENSION WIRE SHALL BE EITHER NO. 7 GAUGE STEEL WIRE GALVANIZED AT THE RATE OF 0.7 OZ. MIN. OR ALUMINUM WIRE OF ALLOY ALCLAD 5056-H38 OR EQUAL WITH A WIRE DIAMETER OF 0.1875 IN. OR LARGER.
 - TENSION WIRE SHALL BE TIGHTENED TO SINGING TAUTNESS.
 - ALL TUBULAR POSTS TO HAVE A METAL CAP.
 - CORNER, LINE, BRACE, GATE POST, ETC. SHALL BE OF A SIZE SHOWN IN THE SPECIFICATION FOR A 7' TO 12' HIGH FENCE.

--SPECIFICATIONS--
CURRENT ALABAMA DEPARTMENT OF TRANSPORTATION

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ALABAMA DEPARTMENT OF TRANSPORTATION
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MONTGOMERY, AL 36130-3050
DESIGN BUREAU SPECIAL DRAWING

8 FOOT CHAIN LINK INDUSTRIAL FENCE WITH TENSION WIRE

DETAILS OF FENCE TIE TO FILL SLOPE

Layout of Temporary Fence

***Hard Copy available at the Coliseum Boulevard Branch of the Montgomery Public Library**

CPB Repository
