*Prepared for:*

**Anniston Calhoun County**
**Fort McClellan Joint Powers Authority**
Anniston, Alabama

and

**Matrix Environmental Services, LLC**
Anniston, Alabama

# FINAL (100%) TECHNICAL SPECIFICATIONS

# LANDFILL COVER SYSTEMS LANDFILL 3 AND FILL AREA NORTHWEST OF REILLY AIRFIELD McCLELLAN, ANNISTON, ALABAMA

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# TECHNICAL SPECIFICATIONS OUTLINE

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# SECTION 01010

# SUMMARY OF WORK

# SECTION 01010

# SUMMARY OF WORK

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. The Contractor shall provide facilities, plans, equipment, materials, labor, overhead, administration, and profit to satisfactorily construct and perform the specified items. The following general summary does not limit the Contractor's responsibility to provide a complete and usable installation in accordance with the Plans, Specifications, and Drawings. This summary provides the general sequence of construction, the Contractors schedule showing the proposed sequence of operations shall be provided with the Contractors bid and will be approved by the Owner's Representative prior to the start of work.

1. Planning and Administration.
   a. Attend preconstruction conference.
   b. Perform site inspection.
   c. Prepare required project Plans and Submittals.

2. Preliminary Work.
   a. Take preconstruction photographs of site.
   b. Perform preconstruction site survey as specified to layout site, establish limit of work and boundary lines, establish roadway alignments, provide initial record survey, and define survey control locations from existing benchmarks.
   c. Install approved signs.
   d. Install erosion and sediment control measures prior to start of work. Interim measures shall be installed as the work progresses and as defined by the approved Schedule.

3. Site Work.
   a. Mobilize items necessary to perform the work. Improve entrance roadways and construct borrow area access roads as defined by the Borrow Area Management

Plan and the Drawings. Install temporary facilities as specified. Provide temporary decontamination pad and other decontamination facilities.

b. Install temporary utilities such as electricity, telephone, internet connection, water and sewer hookup that may be needed.
c. Perform site survey activities as necessary to construct cap, waste excavation, structures, and earthwork to the lines and grades shown on the Drawings and as necessary to provide record surveys for measurement purposes. Survey and set initial boundaries for clearing, grubbing, and stump grinding for inspection and acceptance by the Construction Manager.
d. Install field offices and temporary facilities for Contractor, Construction Manager, and CQA Consultant.
e. Designate areas for soil and mulch (chipped and ground trees) stockpiling for inspection and acceptance by the Construction Manager.
f. Construct temporary and permanent surface water, sediment, and erosion controls (may include initial excavation of FANWR sediment basin to control temporary stormwater runoff; contractor is responsible for phased implementation of interim Erosion and Sediment Control measures in accordance with the Construction Best Management Practices Plan).
g. Perform clearing and stump grinding of areas as specified. Grubbing shall be performed as indicated on the approved schedule as the work progresses to control sediment. Remove loose organic material and debris as specified within Specification Section 02115 prior to hauling fill material. Loose organics shall include trees, limbs, shrubs, and vegetation. Stumps and grass shall remain in place.
h. Perform cut, fill, compaction, and grading of waste material and prepare the relocated waste surface for soil placement.
i. Maintain existing roadways, parking areas, and decontamination facilities and construct any new facilities needed to perform the work.
j. Place the cover system soil components, including structural fill, low permeability soil, and topsoil.
k. Construct cover system surface water drainage system and drainage ditches outside of cover system area.
l. Install trails, roadways, and parking area within the cover system area.
m. Perform final grading for remainder of site including borrow areas. Install vegetation (grass, trees, plantings, and wildflowers) in the specified areas

including borrow areas. Install chipped material as mulch around plantings as specified.

n. Construct new spit rail fence fencing.
o. Collect, store, and sample wastewater from equipment and personnel decontamination. Test and transport to an offsite treatment and/or disposal facility as necessary. Collected surface water can be used for dust suppression over waste areas or soils moisture conditioning in accordance with Specifications and approval by the Construction Manager.
p. Decontaminate and dispose of waste materials as specified.
q Decontaminate (i.e., loose debris) and remove from the site equipment, trailers, and other appurtenances which may have been brought to the site.
r. Remove or dispose of unused materials from the site.
s. Perform site clean up and debris removal activities.
t. Disconnect temporary utilities.
u. Remove any temporary structures remaining onsite and dispose of debris.
v. Perform post-work maintenance.

4. Maintain cover system, drainage features, access roads, signs, and gates for one year following acceptance of construction by the Construction Manager and the Engineer. Contractor is required to maintain site gate access control while on site performing maintenance.

5. Remove erosion and sediment control measures as approved by the Construction Manager.

## 1.02 CONTRACTOR'S DUTIES

A. The Contractor shall prepare and obtain approval from the Construction Manager for project Plans and Submittals required by these Specifications.

B. The Contractor shall obtain approval for subcontracts.

C. The Contractor shall obtain necessary building, construction, operating approvals, permits, and consents that are not provided by the Owner.

D. The Contractor shall start, construct, and complete the project in accordance with the approved Plans, Specifications, and Drawings.

E. The Contractor shall establish means of, and techniques and procedures for, constructing and otherwise executing the project.

F. The Contractor shall furnish and pay the cost of the following.
   1. labor and supervision;
   2. supplies, materials, equipment, tools, and machinery;
   3. water, electricity, telephone, and other utilities necessary to properly execute and complete the work; and
   4. other facilities, permits, and services necessary to properly execute and complete the work.
   5. Insurance, overhead and administration, and other costs required to make the project complete.

G. The Contractor shall pay costs associated with transport and disposal of materials disposed offsite.

H. The Contractor shall pay costs of legally required sales, consumer, payroll and use taxes, and governmental fees.

I. The Contractor shall perform the work in accordance with codes, ordinances, rules, regulations, orders, and other legal requirements of governmental bodies and public agencies which bear upon performance of the work.

J. The Contractor shall maintain order, safe practices, and proper conduct at all times among Contractor's employees.

K. The Contractor shall coordinate activities of the suppliers and subcontractors, if any, performing the work. Work performed by subcontractors for the Contractor shall be the responsibility of the Contractor.

L. The Contractor shall perform the work as specified and in a timely manner.

## 1.03 CONTRACTOR USE OF WORKSITE

A. The Contractor shall confine worksite operations to those areas permitted by laws, ordinances, permits, and the Contract Documents.

B. When determining amount, location, movement, and use of materials and equipment on the worksite, the Contractor shall consider the safety of performing the work, and that of people and property adjacent to the worksite.

C. The Contractor shall conduct work at the worksite and on surrounding streets and highways in a clean and orderly manner.

D. The Contractor shall coordinate work with any other Contractors on the site.

## PART 2 — PRODUCTS

(Not used.)

## PART 3 — EXECUTION

(Not used.)

[END OF SECTION]

# SECTION 01025

# MEASUREMENT AND PAYMENT

# SECTION 01025

# MEASUREMENT AND PAYMENT

## PART 1 - GENERAL

### 1.01 RELATED SECTIONS

A. Section 00300 – Bid Form

B. Final Design Report Appendix A – Design Calculations

### 1.02 MEASUREMENT OF QUANTITIES

A. The Works completed under the Contract shall be measured according to United States standard measures. Payment will be based on the actual quantity of the Works performed under the various classifications of the Works in the Contract unless otherwise provided below or in the method of measurement for the various classes of the Works involved. The Construction Manager will exercise such controls and make such measurements as are necessary to assure that each item of the Works is performed in substantial compliance with the Contract Documents.

B. The Contractor shall receive and accept payment for the Works performed measured in accordance with the following section except as hereafter modified by Change Order.

C. For Landfill No. 3 (LF3), the contractor will not be permitted to cut into the waste. Grading activities will consist of placing fill above the existing grades. For FANWR, the waste excavation grading plan is presented on Drawing 7. Test pit logs from the investigation activities conducted at the FANWR are provided as Appendix A of the CMI Plan. If the Construction Manager (CM) determines that additional waste material needs to be excavated, the lump sum payment will be adjusted according to the unit price provided by the Bidder on Bid Schedule, Form B (Bid Documents Volume I of IV).

## 1.03 MEASUREMENT, PAYMENT, AND DEFINITIONS

A. Items for which there is a separate Task Pay Item in the Bid Form, contained in the Contract are herein defined and the manner and the method of measurement and payment are described.

B. For the Works specified and shown on the Drawings, but for which no separate Task/Works Item is provided on the Bid Form, it shall be the Contractor's responsibility to include those costs among the specified Task/Works Items shown on the Bid Form. In this respect, the cost of such items as safety provisions, submittals on materials and equipment, testing, clean-up, warranties, normal maintenance and maintenance during the one year period following acceptance of construction, and related items required shall be distributed by bidders among the Pay Items. The Pay Items reflect the actual payment for all labor, equipment, materials, taxes, overhead, profit, fees or other costs necessary to complete the Works. Any work required for the satisfactory completion of the project which is not itemized shall be considered incidental to the Pay Items. Inquiries regarding any specific details of any Pay Item can be directed to the Construction Manager as provided in the Notice Inviting Bids.

C. The intent of the measurement and payment, as defined as to the specific work to be included in each Pay Item, is for the use of the Construction Manager to designate specific items of the Works which are to be included in specific Pay Items and items of the Works which must be completed to complete the Contract Works as specified and shown on the Drawings. The Pay Item list may not be complete nor is it intended to be a complete list for the bidder/Contractor.

D. **For items that will require disposal of materials in the Industrial Landfill, the Bidder shall include costs to operate, maintain, and re-close the Industrial Landfill for material placed as a part of this project. Work shall be performed per the requirements of the Specifications and the existing permit in the Industrial Landfill.**

E. The Contractor shall implement and include the cost to implement the Construction Best Management Practices Plan (CMBPP) as presented within the Construction Documents.

F. Pre-bid testing of proposed soil materials is not permitted.

## G. PAY ITEM DEFINITION

**General**

Pay Item 1 – Mobilization/Demobilization

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. **A payment of 50 percent** will be made when the Contractor has established and occupied a field office and has the equipment necessary to start work. **A payment of 30 percent** will be made when the stump grinding milestone is completed. **A payment of the remaining 20 percent** will be paid upon completion of demobilization of the Contractor from the site.
3. Definition: The price shall include materials, labor, tools, and equipment necessary for the assembling and setting up for the project, including: the initial movement of personnel and equipment to the project site; the application, fee payment and acquisition for necessary permits; the establishment of the Contractor's shops, plants, storage areas; and other initial expense required for the start of work. The Contractor may locate the construction trailer within the areas shown as available for use in Drawing 2B. Recognize that other traffic may use the entrance gate to the site. Demobilization shall include removal of site trailers, equipment, materials, tanks, piping, and final acceptance by the Construction Manager.

Pay Item 2 - Provision and Maintenance of Temporary Facilities and Equipment

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment shall be made monthly throughout the project in equal installments according to the total construction duration presented on the final baseline schedule. However, no payment beyond the lump sum amount will be made in the event construction occurs over a longer period than shown in the schedule.
3. Definition:
   a. The price shall include and cover labor, materials, and equipment necessary to furnish and maintain temporary facilities including, but not limited, to the Contractor's Field Office and Storage Facilities, Decontamination Equipment and Facilities, temporary fences; Emergency Spill, Air and Dust Emission Control and Fire Control Equipment, tanks and storage areas and items not mentioned but required to complete the work.
   b. The price shall include materials, labor and equipment necessary to furnish and maintain the Construction Manager and CQA Consultant Field Offices.

c. The price shall include and cover labor, materials, and equipment necessary to make arrangements for utility service and secure permits required by public authorities for water, electricity, and telephone; and install, provide, maintain and remove at the completion of the Work, onsite temporary electricity, onsite temporary lighting, onsite temporary telephone service, onsite temporary internet service, onsite temporary water, and onsite temporary sanitary facilities. The price shall include payment of utility bills for the duration of the project excluding water obtained fro the fire hydrant designated on the Drawings. Contractor is required to meter water usage from this hydrant and report usage volume to the Construction Manager.

Pay Item 3 – Health and Safety

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Schedule of Prices for this item. Payment shall be made monthly throughout the project in equal installments according to the total construction duration presented on the final baseline schedule. However, no payment beyond the lump sum amount will be made in the event construction occurs over a longer period than shown in the schedule.
3. Definition: The price shall include labor, materials, and equipment necessary to provide overall site responsibility for Health and Safety and oversight. The associated work will include, but not be limited to provision of a site Health and Safety Officer, management of personnel records, coordination of health and safety issues for visitors, daily H&S inspections and tailgate meetings, providing appropriate medical monitoring and training for site workers, establishment of exclusion and support zones, supplying exclusion and support zones with necessary supplies and equipment, supplying and erecting temporary fencing around exclusion and support zones. All work is to be performed in Level D personal protective equipment. Contractor shall provide force account rates for costs associated with Level C or B personnel protective equipment with his bid.

Pay Item 4 – Preparation of Plans, Submittals, and Schedules

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this Pay Item. **A payment of 50 percent** will be made to the Contractor upon acceptance of the Plans listed in Table 01350-1 by the Construction Manager. **A payment of 30 percent** will be made to the Contractor upon acceptance of the technical submittals listed in Table 01350-1 by the Construction Manager. **Payment of the remaining 20 percent** will be paid in

equal installments according to the total construction duration presented on the final baseline schedule. However, no payment beyond the lump sum amount will be made in the event construction occurs over a longer period than shown in the schedule.

3. Definition: The price shall include labor, materials, and equipment necessary to prepare drafts, revise drafts in response to reviewer comments, submit final versions that are acceptable and approved by the Construction Manager, and items not mentioned but required to complete the Works. Individual Plans and Schedules are listed are listed in Specification Section 01350, Table 01350-1.

Pay Item 5 – Surveying

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Schedule of Prices for this item. Payment will be made in equal installments according to the total construction duration presented on the final baseline schedule. However, no payment beyond the lump sum amount will be made in the event construction occurs over a longer period than shown in the schedule.
3. Definition:
   a. The price shall include labor, materials and equipment necessary to conduct an initial site survey, final topographic survey, and required intermediate surveys.
   b. The Contractor shall conduct an initial survey of the site and update the Site Development Plans shown on the Drawings.
   c. The Contractor shall survey the top of the structural fill, bottom of waste excavation, and bottom of surface water/sediment detention pond.
   d. The Contractor shall survey the top of the low permeability soil layer on a maximum 50 ft. grid pattern to prove that the minimum layer thickness of 18 in. was achieved.
   e. The Contractor shall survey drainage swale inverts, stormwater diversion berms (crest and toes), top of topsoil layer, pipe inverts, and spillway inverts and breaklines.
   f. The Contractor shall provide a final topographic survey of the site at the completion of the work including road construction.
   g. The surveying described in this section shall be performed by a surveyor licensed in the State of Alabama in accordance with survey requirements outlined in the Construction Quality Assurance Plan and Specification Section 02010.

Pay Item 6 – Construction and Maintenance of Access Roads, Haul Roads, and Laydown Area

1. Measurement: Measurement for payment will not be made for this item.

2. Payment: Payment will be made at the lump sum price listed in the Schedule of Prices for this item. Payment will be made each month for the percentage of roadway that has been constructed.
3. Definition: The price shall include labor, material, and equipment necessary to construct, improve, and maintain the existing and proposed access/haul roads **outside** of the Landfill Cover System Areas including excavation, grading, filling, and placement of new material. If a new access or haul road is considered by the contractor, the access road shall be constructed, repaired and maintained, as necessary, for the duration of the project and left in a condition acceptable to the Construction Manager at the finish of the project at no additional cost to the Owner. Construction access roads and haul roads shall remain after construction.

Pay Item 7 –Gates and Signs

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon installation of gates and signs and upon acceptance by the Construction Manager.
3. Definition: The price shall include labor, materials and equipment and performance of work required to furnish and install gates and signs required by the Specifications and by applicable Permits.

Pay Item 8 – Surface Water Control and Treatment

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment shall be made monthly throughout the project in equal installments according to the total construction duration presented on the final baseline schedule approved by the Construction Manager. However, no payment beyond the lump sum amount will be made in the event construction occurs over a longer period than shown in the schedule.
3. Definition: The price shall include labor, materials, and equipment necessary to control surface water/stormwater throughout the duration of the project in accordance with the requirements outlined within the Specifications. Price shall include collection, containerizing, laboratory testing, treatment, and disposal of surface water/stormwater that has contacted waste.

Pay Item 9 – Boundary Survey Permanent Monument

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and acceptance by the Construction Manager.
3. Definition: The price shall include labor, materials, and equipment necessary to install the boundary survey permanent markers as shown in the Drawings. The concrete monument will be provided by the Owner.

Pay Item 10 – Payment Bond

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: Contractor shall provide a payment bond in accordance with the Project General Conditions.

Pay Item 11 – Performance Bond

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: Contractor shall provide a performance bond in accordance with the Project General Conditions.

Pay Item 12 – Insurance

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: Contractor shall provide insurance in accordance with the Project General Conditions.

Pay Item 13 – Maintenance During One Year Warranty Period

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made in accordance with the General Conditions.
3. Definition: The price shall include labor, materials, and equipment necessary to maintain erosion and sediment control measures, to remove and dispose of

accumulated sediments within drainage structures (removed materials will be disposed of in the Industrial Landfill), reseeding and matting of disturbed areas, reseeding of borrow areas, regrading of erosion areas, installation of sand within locally settled areas, cleaning of the surface water/sediment detention pond one time after final acceptance and before the end of the one year warranty period at the discretion of the Construction Manager. The Contractor will only be responsible for the first year of the 5-year maintenance period. All required Contractor's insurance policies must remain in effect through Final Completion. The one year warranty period shall include routine and expected maintenance items (i.e., settling, re-vegetation, erosion gullies, planting (based on the mortality rate)). Contractor shall assume that two significant rainfall events occur during the maintenance period prior to establishing a full stand of vegetation. Contractor shall detail maintenance activities and costs associated with the repair of minor erosion associated with these two rainfall events.

**Borrow/Stockpile Areas**

Pay Item 14 – Erosion and Sediment Control

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Schedule of Prices for this item. Payment will be made upon completion of the work for each borrow area and upon acceptance by the Construction Manager.
3. Definition: The price shall include labor, materials, and equipment necessary to construct and maintain erosion and sediment control measures, and to remove and dispose of the materials after the completion of the work. Contractor shall assist the Construction Manager with coordination of erosion and sediment control inspections by the State of Alabama. Work within the borrow/stockpile area shall not begin until erosion and sediment control measures have been completely installed and have been accepted by the Construction Manager. Removed materials will be disposed of in the Industrial Landfill upon completion of the project and upon full restabilization of the borrow/stockpile areas per the requirements of the Borrow Area Management Plan. Erosion and sediment control measures shall not be removed without written authorization from the Construction Manager.

Pay Item 15 – Clear, Grub, and Strip Borrow Area 2

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has

been completed and accepted by the Construction Manager within the invoice cycle.

3. Definition: The price shall include all labor, materials, and equipment necessary to remove trees, stumps, roots, and vegetation from BAS-2 to prepare BAS-2 for excavation activities.

Pay Item 16 – Demolition of Existing Facilities

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include all labor, materials, and equipment necessary to remove the existing structures and utilities located within BAS-2. Existing structures and utilities shall include but not be limited to: buildings, concrete slabs, fire hydrants, water lines, wood platforms, and asphalt roads. Demolished materials shall be disposed of in the Industrial Landfill. It is the Contractors responsibility to perform site surveys and inventories of the materials to be removed from BAS-2 during the mandatory bid walk.

Pay Item 17 – Vegetation/Restabilization

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon acceptance of the area by the Construction Manager as being fully stabilized. Acceptance shall be as defined by Specification 02204.
3. Definition: The price shall include labor, materials, and equipment for procurement and installation of seeding and amendments to restabilize the borrow/stockpile areas prior to demobilization. Contractor shall test for necessary soil amendments to provide a sufficient stand of vegetation as required by the Specifications.

**Landfill 3**

Pay Item 18 – Erosion and Sediment Control

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has

been completed and accepted by the Construction Manager within the invoice cycle.

3. Definition: The price shall include labor, materials, and equipment necessary to construct and maintain erosion and sediment control measures, and to remove and dispose of the materials after the completion of the work. Contractor shall assist the Construction Manager with coordination of erosion and sediment control inspections by the State of Alabama. Work within the Landfill 3 area shall not begin until erosion and sediment control measures have been completely installed and have been accepted by the Construction Manager. Removed materials will be disposed of in the Industrial Landfill upon completion of the project and upon full restabilization of the cover system area. Erosion and sediment control measures shall not be removed without written authorization from the Construction Manager.

Pay Item 19 – Areas to be cleared

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Clearing shall be as defined in Specification Section 02115.

Pay Item 20 – Areas requiring stump grinding

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Stump grinding shall be as defined in Specification Section 02115.

Pay Item 21 – Well Extension

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition:

Pay Item 22 – Structural Fill (varying thickness)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct structural fill to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Structural fill shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 23 – Low Permeability Soil Fill (18 in. thickness)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct to low permeability soil layer to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Low permeability soil shall be placed in accordance with the Drawings, Specifications, and CQA Plan. Specifically low permeability soil shall be compacted and moisture conditioned to achieve a maximum permeability of $1 \times 10^{-5}$ cm/sec and placed to a minimum thickness of 18 inches.

Pay Item 24 – Top Soil (6 in. thickness)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has

been completed and accepted by the Construction Manager within the invoice cycle.

3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from BAS-2 to the work face, temporary stockpiling and second handling (if necessary), material placement, grading, and all else required to construct the top soil layer to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Top soil shall be placed in accordance with the Drawings, Specifications, and CQA Plan and placed to a minimum thickness of 6 inches.

Pay Item 25 – Grading of Closure Area

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to fine grade the final landfill cover surface to the lines and grades shown on the Drawings.

Pay Item 26 – Vegetation

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: The price shall include labor, materials, and equipment for procurement and installation of seeding, matting, and amendments for the final cover. Contractor shall test for necessary soil amendments to provide a sufficient stand of vegetation as required by the Specifications. Price shall include materials and installation for the Landfill 3 area, drainage swales, perimeter sideslopes, and perimeter drainage channels.

Pay Item 27 – Diversion Berms

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has

been completed and accepted by the Construction Manager within the invoice cycle.

3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct the diversion berms to the lines and grades, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. The diversion berms shall be constructed of structural fill material and shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 28 – Outlet Structure Pipe (6 in. diameter CMP)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement of materials, equipment, and labor necessary to install the 6 in. diameter CMP in the locations and to the grades shown on the Drawings.

Pay Item 29 – Rip Rap Slope Protection

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement of materials, equipment, and labor necessary to install rip rap slope protection in the locations and thickness shown on the Drawings.

Pay Item 30 – Access Road

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement and delivery of materials, materials testing, equipment, and labor necessary to construct the access roads

to the width, alignment, and thickness of material as shown on the Drawings and as required in the specifications. Price shall include temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct the landfill access roads. No additional payment will be made for losses due to settlement or wastage. Aggregate and geotextile shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 31 – Perimeter Channel

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include cut and fill of soils necessary to construct the landfill perimeter channel as shown in the Drawings.

**Fill Area Northwest of Reilly Airfield**

Pay Item 32 – Erosion and Sediment Control

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include labor, materials, and equipment necessary to construct and maintain erosion and sediment control measures, and to remove and dispose of the materials after the completion of the work. Contractor shall assist the Construction Manager with coordination of erosion and sediment control inspections by the State of Alabama. Work within the Fill Area Northwest of Reilly Airfield shall not begin until erosion and sediment control measures have been completely installed and have been accepted by the Construction Manager. Removed materials will be disposed of in the Industrial Landfill upon completion of the project and upon full restabilization of the cover system area. Erosion and sediment control measures shall not be removed without written authorization from the Construction Manager.

Pay Item 33 – Areas to be completely cleared

1. Measurement: Measurement for payment will not be made for this item.

2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Clearing shall be as defined in Specification Section 02115.

Pay Item 34 – Areas to be selectively cleared

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Selectively cleared areas occur only along the trail located on the western boundary of the Fill Area Northwest of Reilly Airfield. Selectively clearing will include removal of trees per the discretion of the Construction Manager for aesthetic purposes. The Contractor shall survey the proposed alignment shown on the Drawings and perform a site walk with the Construction Manager to discuss specific trees and shrubs that shall be removed. Trees and shrubs shall be removed and cut flush with the surrounding ground surface.

Pay Item 35 – Areas to be grubbed and stripped

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Grubbing and stripping shall be as defined in Specification Section 02115.

Pay Item 36 – Areas requiring stump grinding

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: Stump grinding shall be as defined in Specification Section 02115.

Pay Item 37 – Road Removal

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include labor materials, and equipment necessary to remove the existing asphalt roads located on and surrounding the Fill Area Northwest of Reilly Airfield. Removed materials shall be disposed of in the Industrial Landfill.

Pay Item 38 – Well Extension

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include labor, materials, and equipment necessary to extend the wells located within Fill Area Northwest of Reilly Airfield as listed in the Well Extension Schedule shown on Drawing 16. Extensions of the specified wells shall be performed in accordance with Details 20 and 21 and the Well Extension Notes listed on Drawing 16.

Pay Item 39 – Waste Excavation, Placement, and Regrading

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, labor, tools, and equipment necessary to excavate, relocate, place, compact, and grade waste materials within the limits on the Drawing and relocate within the designate area for excavated waste placement shown on Drawing 5. Backfill of the waste excavation area shall be included in the structural fill pay item. Price shall include Level D PPE. For approved waste excavation in excess of the volume indicated in the bid form, the lump sum payment will be adjusted according to the unit price provided by the Contractor on Bid Schedule, Form B. If less waste material is required to be excavated, the lump sum payment will not be reduced. Verification of final waste removal will be made by visual observation

by the Construction Manager as stated in Technical Specification Section 02206, Part 3.02 A (Appendix C of the Final Design Report; Bid Documents Volume II of IV).

4. Decontamination of equipment shall be included within this item. Decontamination water may be used for dust control. Ensuring that decontamination water is free of characteristic hazards is not the only criteria required prior to discharge of waters to a surface water body. The criteria for sampling are identified in Section 1100, 1.08 Protection of Water Resources.

Pay Item 40 – Structural Fill (not including Surface Water/Sediment Detention Pond)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct structural fill to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Structural fill shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 41– Low Permeability Soil Fill (18 in. thickness)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct to low permeability soil layer to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Low permeability soil shall be placed in accordance with the Drawings,

Specifications, and CQA Plan. Specifically low permeability soil shall be compacted and moisture conditioned to achieve a maximum permeability of $1 \times 10^{-5}$ cm/sec and placed to a minimum thickness of 18 inches.

Pay Item 42 – Geotextile Separator

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement and delivery of materials, testing, equipment, and labor necessary to install the geotextile separator within the specified areas. Geotextile shall be installed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 43 – Top Soil (6 in. thickness)

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include materials, equipment, and labor necessary to: excavate, load to trucks, transport from BAS-2 to the work face, temporary stockpiling and second handling (if necessary), material placement, grading, and all else required to construct the top soil layer to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Top soil shall be placed in accordance with the Drawings, Specifications, and CQA Plan and placed to a minimum thickness of 6 inches.

Pay Item 44 – Grading of Closure Area and Surface Water/Sediment Detention Pond

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.

3. Definition: The price shall include materials, equipment, and labor necessary to fine grade the final landfill cover and surface water/sediment detention pond surface to the lines and grades shown on the Drawings.

Pay Item 45 – Vegetation

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: The price shall include labor, materials, and equipment for procurement and installation of seeding, plantings, matting, and amendments for the final cover and surface water/sediment detention pond. Contractor shall test for necessary soil amendments to provide a sufficient stand of vegetation as required by the Specifications. Price shall include materials and installation for the Fill Area Northwest of Reilly Airfield area, surface water/sediment detention pond area, wildflower planting area, tree and shrub planting areas, drainage swales, perimeter sideslopes, and perimeter drainage channels.

Pay Item 46 – Surface Water/Sediment Detention Pond

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: The price shall include materials, equipment, and labor necessary to construct the surface water/sediment detention pond to the lines and grades shown in the Drawings. The price shall include soil excavation and fill. The area is not a cut fill balance and the remaining soil fill shall be obtained from BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material). Material and placement shall conform to the specifications provided for Structural Fill. The price shall specifically include: excavate, load to trucks, transport from either BAS-2 or the stockpiled material located on Reilly Airfield (BAS-4 material) to the work face or cut and fill from the pond area, temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct the pond area to the elevations and limits, shown on the Drawings. No additional payment will be made for losses due to settlement or wastage. Soil fill shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 47 – Spillway

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item.
3. Definition: The price shall include materials, equipment, and labor necessary to construct the principal and emergency spillways as shown in the Drawings. The price shall include procurement and delivery of materials, installation of the materials, concrete base installation, pipe installation and performance of earthwork construction necessary to construct the principal and emergency spillways.

Pay Item 48 – Split Rail Fence

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement and delivery of materials, equipment, tools, and labor necessary to construct the spilt rail fence located west of the Fill Area Northwest of Reilly Airfield. Split rail fence shall be installed to the alignment shown on Drawing 8, and to the requirements provided in Specification 02830 and Detail 26 on Drawing 16.

Pay Item 49 – Gobbler and Reilly Lake Road Re-construction

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement and delivery of materials, materials testing, equipment, and labor necessary to construct the access roads to the width, alignment, and thickness of material as shown on the Drawings and as required in the specifications. Price shall include temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct the landfill access roads. No additional payment will be made for losses due to settlement or wastage. Aggregate and geotextile shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 50 – Parking Area

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made upon completion of the work and upon acceptance by the Construction Manager.
3. Definition: The price shall include procurement and delivery of materials, materials testing, equipment, and labor necessary to construct the parking area to the width, alignment, and thickness of material as shown on the Drawings and as required in the specifications. Price shall include temporary stockpiling and second handling (if necessary), material placement, moisture conditioning, compaction, grading, and all else required to construct the parking area. No additional payment will be made for losses due to settlement or wastage. Aggregate and geotextile shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

Pay Item 51 – Walking Path

1. Measurement: Measurement for payment will not be made for this item.
2. Payment: Payment will be made at the lump sum price listed in the Bid Form for this item. Payment will be made per the percentage of the work that has been completed and accepted by the Construction Manager within the invoice cycle.
3. Definition: The price shall include procurement and delivery of materials, materials testing, equipment, and labor necessary to construct the walking path to the width, alignment, and thickness of material as shown on the Drawings and as required in the specifications. Price shall include temporary stockpiling and second handling (if necessary), material placement, earthwork cut and fill, moisture conditioning, compaction, grading, and all else required to construct the walking path. Contractor shall include procurement, delivery, and installation of solar lighting per Detail 26 on Drawing 16 within this pay item. No additional payment will be made for losses due to settlement or wastage. Aggregate and geotextile shall be placed in accordance with the Drawings, Specifications, and CQA Plan.

**Additional Unit Prices**

Additional Pay Item A1 – Provision of Level C health and safety and personal protective equipment

1. Measurement: Measurement will be based on a daily time log maintained by the Contractor. The log shall be signed and approved each day by the Contractor and Construction Manager.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment to provide an upgrade to Level C Health and Safety and Personal Protective Equipment from that specified in the Pay Item.

Additional Pay Item A2 – Provision of Level B health and safety and personal protective equipment

1. Measurement: Measurement will be based on a daily time log maintained by the Contractor. The log shall be signed and approved each day by the Contractor and Construction Manager.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment to provide an upgrade to Level B Health and Safety and Personal Protective Equipment from that specified in the Pay Item.

Additional Pay Item A3 – Sampling, testing, handling, and off-site treatment of non-hazardous decontamination water, collected surface water, and leachate

1. Measurement: Measurement for payment will be based on gallons treated.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include all labor, materials, and equipment required to furnish on-site storage tanks, collect, composite, store on-site, sample, test, load, unload and off-site treatment of non-hazardous decontamination water, collected surface water, and leachate including supply of transport vehicles licensed to haul waste; ensuring all units are properly placarded during transport; transport to the approved treatment facility; fuel costs; licenses and permitting fees; tipping fees; payment of any penalties or fines charged as a result of any vehicle overloadings or otherwise; clean up of

any spilled water along haul roads; taxes; insurance; full compliance with applicable Federal, State and local regulations; cleaning transport vehicles prior to leaving the exclusion zone or otherwise; acceptance of water by the treatment facility; treatment costs charged by the treatment facility; characterization/acceptance testing; special sampling and testing required for manifesting; and other miscellaneous items for which separate payment is not provided under other items. This line item is requested for work in addition to the requirements listed in the Bid Documents and Specifications and would be for additional treatment of surface water that is outside of the scope of work. Outside of scope of work means the quantity of surface water in excess of that which can be used for dust control and soil moisture conditioning as approved by the Construction Manager.

Additional Pay Item A4 – Screening of Structural Fill to project specifications

1. Measurement: Measurement will be made by pre and post survey per in-place structural fill quantities.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment to screen materials obtained from either or both BAS-2 and the stockpiled material located on Reilly Airfield (BAS-4 material) to the requirements of the specifications.

Additional Pay Item A5 – Screening of Low Permeability Soil to project specifications

1. Measurement: Measurement will be made by pre and post survey per in-place structural fill quantities.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment to screen materials obtained from either or both BAS-2 and the stockpiled material located on Reilly Airfield (BAS-4 material) to the requirements of the specifications.

Additional Pay Item A6 – Additional Waste Excavation, Placement, and Regrading

1. Measurement: Measurement will be made by pre and post survey per in-place structural fill quantities.

2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The price shall include materials, labor, tools, and equipment necessary to excavate, relocate, place, compact, and grade waste materials within the limits on the Drawing and relocate within the designate area for excavated waste placement shown on Drawing 5. Backfill of the waste excavation area shall be included in this item. Price shall include Level D PPE.

Additional Pay Item A7 – Project Standby Time

1. Measurement: Measurement will be based on a daily time log maintained by the Contractor. The log shall be signed and approved each day by the Contractor and Construction Manager.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: In the event that the Owner or Owner's Representative request the Contractor to stop work this unit price shall include the standby of labor, materials, and equipment until the start work notice is provided by the Owner or Owner's Representative.

Additional Pay Item A8 – Class IV Asbestos trained personnel

1. Measurement: Measurement will be based on a daily time log maintained by the Contractor. The log shall be signed and approved each day by the Contractor and Construction Manager.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment to provide the required personnel to direct the transport and placement of asbestos-containing material to and within the Industrial Landfill.

Additional Pay Item A9– Surveying

1. Measurement: Measurement will be based on a daily time log maintained by the Contractor. The log shall be signed and approved each day by the Contractor and Construction Manager.
2. Payment: Payment will be made at the unit price listed in the schedule of Additional Unit Prices.
3. Definition: The unit price shall include labor, materials, and equipment necessary to furnish a two-man survey crew to perform additional surveying requested by the Owner or Owner's Representative for work beyond the scope of the Specifications. The unit price will include field work, data processing and analysis, and the provision of paper and electronic copies of the results.

The survey crew shall have the required training to work in the Exclusion Zone, if needed.

## 1.04 SCHEDULE OF VALUES

A. The Contractor shall submit to the Construction Manager for approval a complete schedule of values ("Schedule of Values") of the various portions of Works, including breakdown of equipment, labor, and materials and estimated quantities for the various lump sum Task/Work Items bid, aggregating the Contract Price. The Schedule of Values shall subdivide the Works into component parts in sufficient detail to serve as the basis of progress payments during construction and to verify the progress of construction with the progress schedule and shall be supported by such data to substantiate its correctness as the Construction Manager may require. Each item in the Schedule of Values shall include its proper share of overhead and profit. An unbalanced breakdown providing for overpayment to the Contractor on Items of the Works which would be performed first will not be approved.

## PART 2 — PRODUCTS

(Not used.)

## PART 3 — EXECUTION

(Not used.)

[END OF SECTION]

# SECTION 01030

# HEALTH AND SAFETY

# SECTION 01030

# HEALTH AND SAFETY

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. Contractor shall be responsible for preparation of a Health and Safety Program and Health and Safety Plan (HASP), their implementation, and related requirements as specified herein. The HASP shall comply with the requirements listed in this Section as well as "Final Master Health and Safety Plan", McClellan, Anniston, Alabama, dated July 2005 version 1.0 or latest version.

B. The potential for encountering munitions and explosives of concern (MEC) at LF3 and Fill Area Northwest of Reilly Airfield (FANWR) is deemed to be "low" since this area has already been cleared by the US Army (*Site Specific Final Report M1.01 Parcel and M3 Miscellaneous Property Fort McClellan, Alabama*, March 2003). On-Call MEC support services will be provided during any excavation activities that are conducted. On-Call MEC support services include providing initial MEC awareness training and periodic site inspections. Construction personnel will be given a safety briefing by the JPA's MEC Management Team. Personnel will be instructed on visual MEC recognition, MEC hazards, and MEC notification procedures. If MEC is encountered during construction activities, a reassessment of the site will be conducted by the JPA's MEC Management Team to determine if the potential for encountering MEC is still low. If the potential for encountering MEC is raised, there may be a need for additional construction support to include surface and subsurface clearance of MEC in the excavation footprint prior to conducting any further intrusive activities.

### 1.02 RELATED SECTIONS

A. Section 01350 - Submittals

## 1.03 APPLICABLE PUBLICATIONS, REGULATIONS, GUIDELINES, AND STANDARDS

A. Work performed shall be consistent with the following guidelines and references and in compliance with all applicable regulations and standards including, but not limited to, those listed below. In the case that these requirements are conflicting, the one which offers the greatest protection shall be followed.

B. Occupational Safety and Health Administration (OSHA) Publications
   1. 29 CFR § 1910 General Industry Standards.
   2. 29 CFR § 1915.100 Air Contaminants.
   3. 29 CFR § 1926 Construction Industry Standards.

C. National Institute of Occupational Safety and Health (NIOSH) Publications
   1. 85-115 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

D. American Conference of Governmental Industrial Hygienists (ACGIH) Publications
   1. Threshold Limit Values and Biological Exposure Indices for 1994.

E. American National Standards Institute (ANSI).

## 1.04 HEALTH AND SAFETY PROGRAM

A. Contractors (General and Sub-Contractors) performing on-site activities are required to develop and maintain a written Health and Safety Program in compliance with OSHA standard 29 CFR § 1910.120 (b) (1) through (b) (4).

## 1.05 HEALTH AND SAFETY PLAN (HASP)

A. General

Three copies of the HASP shall be submitted to the Construction Manager for review and approval in accordance with Section 01350. The HASP shall establish, in detail, the protocols necessary for the recognition, evaluation, and control of hazards associated with each task performed by the Contractor and subcontractors. The HASP shall address site-specific safety and health requirements and procedures based upon site-specific conditions.

Duplication of the general information contained in the Health and Safety Program is unnecessary. The level of detail provided in the HASP shall be tailored to the type of work, complexity of operations to be accomplished, and hazards anticipated.

B. Topics

Topics required by OSHA standard 29 CFR § 1910.120(b) (4) and those discussed below shall be addressed in the HASP. Where the use of a specific topic is not applicable to the project, the HASP shall include a statement to justify its omission and establish that adequate consideration was given the topic.

C. Review

The Construction Manager will review the HASP and will transmit comments to the Contractor. It will be the responsibility of the Contractor to incorporate appropriate comments from the Construction Manager into the HASP. The Contractor will not be permitted to initiate site work until the comments have been addressed and the HASP has been reviewed and approved by the Construction Manager. Approval of the HASP indicates only that the HASP complies with the requirements of this Specification and does not imply that procedures are suitable for the required work. Suitability of the HASP for the work is the responsibility of the Contractor.

D. Modifications

Should any unforeseen hazard become evident during the performance of the work, the Contractor's Health and Safety Officer (HSO) shall bring such hazard to the attention of the Construction Manager, both verbally and in writing, for resolution as soon as possible. In the interim, the Contractor shall take necessary action to re-establish and maintain safe working conditions in order to safeguard on-site personnel, visitors, the public, and the environment. Should the Contractor seek modification of any portion or provision of the HASP, such modification shall be requested by the HSO in writing to the Construction Manager and if approved, be authorized in writing. Disregard for the provisions of this Section and the approved HASP shall be deemed just and sufficient cause for ordering work to cease until the matter has been rectified to the satisfaction of the Construction Manager.

E. Site Description and Contamination Characterization

The HASP shall include a site description and contamination characterization that addresses the following elements, as a minimum:

1. Location and approximate size of the site.
2. Site topography and accessibility by road.
3. Present status and capabilities of emergency response teams that would provide assistance to site employees at the time of an emergency.
4. A list of the contaminants and their concentrations found or known to be present in site areas to be impacted by the work to be performed.
5. A list of contaminants which are of greatest occupational health and safety concern. Concern shall be established by evaluating a contaminant's potential for causing exposure above OSHA permissible exposure limits (PELs) or ACGIH threshold limit values (TLVs). The list shall be created by evaluating the analytical results in the HASP (including addenda table summaries) or by researching sources of information from past site investigation activities.

F. Hazard/Risk Analysis

The HASP shall include a hazard/risk analysis that addresses the following elements, as a minimum:

1. Description of on-site jobs/tasks to be performed.
2. Duration of planned site activities.
3. Chemical, physical, biological, and safety hazards of concern for each site task and/or operation to be performed (Activity Hazard Analysis). Potential hazards that may be encountered during site work are listed below. This is not intended to be a complete list. The Contractor shall research and use additional sources of information when preparing the "Hazard/Risk Analysis" section of the HASP.
   a. Normal construction hazards.
   b. Exposure to the site chemicals of concern, including those chemicals used as part of the construction operations, via handling contaminated soil or groundwater during site work involving intrusive operations (i.e., trenching, excavation, and grading operations).
   c. Exposure to the site chemicals of concern by inhalation or dermal contact during normal construction operations, (i.e., dust, surface seeps, or stormwater handling).
4. Pathways for hazardous substance dispersion.

5. Chemical, physical, and toxicological properties of the contaminants on the select list, sources, and pathways of worker exposures, anticipated on and off-site exposure level potentials, and regulatory (including federal, state, and local) or recommended protective exposure standards.
6. Exposure to hazardous substances brought on-site for the purpose of executing this Contract. If hazardous substances are used in executing the Contract, the Contractor shall comply with the requirements of 29 CFR § 1910.1200, Hazard Communication.

G. Staff Organization, Qualification, and Responsibilities
   1. The Contractor shall develop an organizational structure that sets forth lines of authority, responsibility, and communication. The HASP shall include a description of this organization, qualifications, and responsibilities of each of the following individuals.
   2. Certified Industrial Hygienist (CIH):
      a. Qualifications. The Contractor shall utilize the services of an Industrial Hygienist certified in comprehensive practice by the American Board of Industrial Hygiene. The CIH shall:
         i. possess a minimum of three years experience in developing and implementing health and safety programs at hazardous waste sites or in the chemical or petroleum industry;
         ii. have demonstrable experience in supervising professional and technical level personnel;
         iii. have demonstrable experience in developing worker exposure assessment programs and ambient air monitoring programs; and
         iv. have working knowledge of state and federal occupational safety and health regulations.
      b. Responsibilities. The CIH shall:
         i. be responsible for the development, implementation, oversight, and enforcement of the HASP;
         ii. sign and date the HASP prior to submittal;
         iii. conduct initial site-specific training;
         iv. be present on site during initial construction activities;
         v. be available for emergencies;
         vi. provide on-site consultation as needed to ensure the HASP is fully implemented;

vii. coordinate any necessary modifications to the HASP with the Construction Manager;
viii. serve as a member of the quality control staff; and
ix. provide the safety phase-out report as required by this Section.

c. The Contractor shall comply with the minimum requirements established by the Specifications, the HASP, and applicable regulation. The Contractor will be obligated to bring to the attention of the Construction Manager any deviations to perform the work in a safe, productive manner with minimal occupational risk.

3. Health and Safety Officer (HSO).
   a. Qualifications. The Contractor shall designate an individual to be the Health and Safety Officer (HSO). The HSO shall:
      i. possess a minimum of one year of experience in developing and implementing health and safety programs at hazardous waste sites or in the chemical or petroleum industry;
      ii. possess demonstrable experience in construction safety techniques and procedures;
      iii. have working knowledge of state and federal occupational safety and health regulations;
      iv. have specific training in personal and respiratory protective equipment program implementation and in the proper use of air monitoring instruments, and air sampling methods and procedures; and
      v. be certified in first aid/CPR by the Red Cross, or equivalent agency.
   b. Responsibilities. The HSO shall:
      i. assist and represent the CIH in the continuous on-site implementation and enforcement of the HASP;
      ii. be assigned to the site on a full-time basis for the entire duration of field activities, and shall have no duties other than health and safety related duties;
      iii. perform and document daily "tailgate" safety meetings.
      iv. ensure that all aspects of the HASP are complied with including preparation of records, air monitoring, daily visitor and worker logs, use of PPE, decontamination, and site control;
      v. consult with and coordinate any necessary modifications to the HASP in accordance with this Section, with the CIH, and the Construction Manager;
      vi. serve as a member of the quality control staff on matters relating to safety and health;

vii. provide the information and perform the activities as required by this Section,

viii. have authority to stop work if unacceptable health or safety conditions exist; and

ix. provide the documentation as required by this Section.

4. Occupational Physician.

The Contractor shall utilize the services of a licensed physician who is certified in occupational medicine by the American Board of Preventative Medicine, or who, by necessary training and experience is Board eligible. The physician shall be responsible for developing a medical monitoring program in compliance with 29 CFR § 1910.120(f).

H. Personal Protective Equipment

1. General. In accordance with 29 CFR § 1910.120(g)(5), a written Personal Protective Equipment (PPE) program which addresses all the elements listed in that regulation, and which complies with respiratory protection program requirements of 29 CFR § 1910.134 is to be included in the HASP. Therefore, the HASP shall detail the minimum PPE ensembles (including respirators) and specific materials from which the PPE components are constructed for each site-specific task/operation to be performed. Components of levels of protection (B, C, D and modifications) must be relevant to site-specific conditions, including heat stress potential and safety hazards. The PPE section of the HASP shall include site-specific procedures for on-site fit-checking, cleaning, maintenance, inspection, and storage.
2. Initial Minimum Levels of PPE by Task. The Contractor's CIH shall establish appropriate levels of protection for each work activity based on historical site information, air monitoring results, and an evaluation of the potential for dermal and respiratory exposure during each task. Protocols formally changing the level of protection and the communication network for doing so shall be described in the HASP.

I. Exposure Monitoring/Air Sampling

1. General. The Contractor shall prepare and include in the HASP an exposure monitoring/air sampling program for all operations performed on the site. The program shall establish reporting requirements and notification procedures. Modifications of the program shall have the approval of the Construction Manager.

The exposure monitoring/air sampling program shall comply with the HASP, at a minimum.

2. The exposure monitoring/air sampling program shall include:
   a. baseline air monitoring;
   b. monitoring and sampling for breathing zone (BZ) concentrations; and
   c. heat and cold stress monitoring.

J. Standard Operation Safety Procedures, Construction Manager Controls, Work Practices

1. The HASP shall address the safe work practices to be implemented for the work covered by these Specifications. These shall include, but not be limited to the following:
   a. Site rules/prohibitions (buddy system, eating/drinking/smoking restrictions, etc.)
   b. Protocols for operation of heavy construction equipment in accordance with 29 CFR § 1926.
   c. Descriptions of safety inspection and preventative maintenance requirements for the operation of machinery or mechanized equipment, including written inspection reports.
   d. Utility clearances.
   e. Site "housekeeping".
   f. Fall protection.
   g. Safe clearance.
   h. Sanitation (in accordance with 29 CFR § 1910.120(n)).
   i. Electrical hazards.
   j. Communication.
   k. Excavation and trenching. Include provisions to maintain dust emissions at a minimum level.

K. Site Control and Work Zones

1. General. In order to control the potential spread of contaminants and the flow of personnel and materials into and out of the work area, the Contractor shall establish a site control section in the HASP. This section shall describe the methodology to be used by the HSO in determining the modification of work zone designations, procedures to limit the spread of contamination, and general limitations to be observed by site personnel. The Contractor shall clearly lay out and identify the work zones in the field and shall limit equipment, operations, and personnel in the zones as required by these Specifications and as described in the HASP.

2. Support Zone. The Support Zone (SZ) shall be established on the site and is defined as the area outside the zone of significant contamination. The SZ shall be clearly delineated and shall be secured against active or passive contamination from the work site. The function of the SZ is to provide:
   a. an entry area for personnel, material, and equipment into the Exclusion Zone of site operations;
   b. location for support facilities; and
   c. a storage area for clean safety and work equipment.
3. Contamination Reduction Zone (CRZ). The CRZ shall serve as the personnel and equipment decontamination area. The decontamination facilities shall be located within the CRZ. The entire CRZ shall be fenced off.
4. Exclusion Zone (EZ). The EZ boundary shall be set by the Contractor so that it encompasses areas around individual intrusive construction activities being performed. The Contractor shall control entry into this area and exit may only be made through the CRZ.

L. Decontamination
   1. The Contractor shall establish decontamination procedures for on-site personnel who perform activities in the Exclusion Zone and for equipment utilized in the Exclusion Zone. Decontamination shall be performed in the CRZ prior to entering the Support Zone from the Exclusion Zone. The Contractor shall refer to Chapter 10.0 of the technical guidance publication "Occupational Health and Safety Guidance Manual for Hazardous Waste Site Activities" (NIOSH 85-115) when preparing these procedures. Procedures shall be described in the HASP. The Contractor shall train employees in the procedures and enforce the procedures throughout site operations.
   2. All contaminated soils and decontamination fluids shall be contained and collected to prevent contaminant migration.
   3. Liquid generated during decontamination activities shall be disposed offsite. Solid waste shall be segregated into non-hazardous and hazardous approved containers. Non-hazardous waste generated after installation of the synthetic membrane shall be sent off-site for disposal at a facility approved by the Construction Manager and at the Contractor's expense. Hazardous waste (including spent PPE) generated shall be disposed off site at the Contractor's expense, in a manner approved by the Construction Manager.

M. Emergency Equipment and First Aid
   1. The HASP shall describe the emergency and first aid equipment to be utilized. The following items, as a minimum, shall be immediately available for on-site use:
      a. First aid equipment and supplies approved by the Occupational Physician.
      b. Emergency eyewashes/showers (comply with ANSI Z-358.1).
      c. Spill control materials and equipment.
      d. Fire extinguishers shall be provided at all site facilities and at any other site locations where flammable or combustible materials present a fire risk.

N. Emergency Response and Contingency Procedures
   1. General. The Contractor shall prepare an Emergency Response Plan in compliance with 29 CFR § 1910.120(1), which addresses the following elements, as a minimum:
      a. Pre-emergency planning and procedures for reporting incidents to appropriate government agencies for potential chemical exposures, personal injuries, fire/explosions, environmental spills, and releases.
      b. Personnel roles, lines of authority, communications.
      c. Posted instructions and a list of emergency contacts (physician, nearby medical facility, fire and police departments, ambulance service, federal/state/local environmental agencies, CIH, Construction Manager).
      d. Emergency recognition and prevention.
      e. Contingencies to combat spills and releases of hazardous chemicals.
      f. Site topography, layout, and prevailing weather conditions.
      g. Criteria and procedures for site evaluation (emergency alerting procedures/ employee alarm system, emergency PPE and equipment, safe distances, places of refuge, evacuation routes, site security and control).
      h. Specific procedures for decontamination and medical treatment of injured personnel.
      i. Route maps to nearest pre-notified medical facility.
      j. Criteria for initiating community alert program, contacts, and responsibilities.
      k. Procedures for critique of emergency responses and follow-up.
   2. The Contractor shall prepare a Spill Release Contingency Plan. This plan shall be incorporated into the HASP, and describe the procedures and equipment to be used should a liquid spill release occur. This plan may be incorporated into the Emergency Response Plan.
   3. Notification of Authorities. The Contractor shall contact and meet with the local emergency response agencies prior to start of construction. The purpose of the

meeting is for the resolution of conflict (if conflict exists) and to ensure that the emergency responders are equipped to respond to an emergency at the site.

## 1.06 TRAINING

A. All employees working on site with the potential for exposure to hazardous substances, health hazards, or safety hazards shall meet the minimum training requirements as specified in 29 CFR § 1910.120. These employees shall have completed the required 40 hours of hazardous waste training and shall have three days of field experience in hazardous waste work. All other employees working on site shall receive 24-hour training as required in 29 CFR § 1910.120(e)(3)(ii) and (iii). All supervisory personnel shall have received an additional eight hours of training as required for management of personnel and activities associated with hazardous waste site activities. Employees shall also receive a minimum of eight hours refresher training annually as needed based on their anniversary of 40-hour or 24-hour training. A copy of the certifications for all hazardous training undergone by employees must be kept on site. While hazardous materials have not been found to date through trenching, there is always the potential with historic landfills that hazardous materials may be encountered; therefore, all workers that enter the exclusion zone must have 40-hour training consistent with the requirements of 29 CFR1910.120, while working directly with waste materials.

B. Site-Specific Training
   1. Initial Training. An initial site-specific training session shall be conducted by the CIH prior to commencement of work or entering the site. This training shall cover site hazards, procedures, and all contents of the approved HASP. All site employees, including those working in the Support Zone, shall attend this training. Elements to be covered as part of the site specific training are:
      a. names of personnel and alternates responsible for site health and safety and emergency response for hazardous waste operations;
      b. chemical hazards;
      c. physical hazards;
      d. potential for exposure on site;
      e. health, safety and other hazards present on the site;
      f. location of subsurface utility lines;
      g. use of personal protective equipment, to include respirator checkout and fit tests;
      h. decontamination procedures;

i. work practices by which each employee can minimize risks from hazards;
j. safe use of controls and equipment on the site;
k. medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards;
l. use of monitoring equipment; and
m. hospital/clinic directions.

2. All on-site personnel shall be required to read and sign the approved HASP.
3. Daily Safety Meetings. Daily health and safety meetings shall be provided by the Contractor.
4. New Employees. Training of new employees shall be conducted prior to allowing them to work in the CRZ or the EZ.
5. All onsite personnel shall be required to attend a Munitions and Explosives of Concern (MEC) Safety Briefing.

## 1.07 MEDICAL SURVEILLANCE

A. General

The CIH, in conjunction with the Occupational Physician, shall detail, in the HASP, the medical monitoring program that includes scheduling of examinations, certification of fitness, compliance with OSHA requirements, and information provided to the physician. The program shall, as a minimum, outline the requirements specified below.

B. Compliance with OSHA

The Contractor shall ensure the physician performs the medical examination prescribed in 29 CFR § 1910.120 for workers performing work in areas other than the SZ. Accordingly, the Contractor shall furnish the physician with:

1. information on the employee's anticipated or measured exposure;
2. PPE use;
3. a description of the employee's duties;
4. a copy of 29 CFR § 1910.120;
5. information from previous examinations not readily available to the examining physician; and
6. a copy of Section 5.0 of NIOSH Publication 85-115 (Reference 2.03, of this section).

C. Physician's Opinion

The Contractor shall obtain a copy of the physician's written opinion about employees' ability to perform hazardous waste site work and furnish copies to the CIH and the employee before work begins. The opinion shall contain:

1. the physician's recommended limitations upon the employee's assigned work;
2. the physician's opinion about increased risk to the employee's health resulting from work; and
3. a statement that the employee has been informed and advised about the results of the examination.

D. Frequency of Examinations

The Contractor shall make medical examinations available to employees:

1. before they start work;
2. annually thereafter;
3. on termination of employment;
4. on completion of work in this Contract;
5. if the employee develops signs or symptoms of illness relating to work place exposures;
6. if the physician determines examinations need to be conducted more often than once a year; and
7. when an employee develops a lost time injury or illness during the period of this Contract. The supervisor must be provided with a written statement signed by the physician prior to allowing the employee to return to the work site after injury or illness resulting in a lost time workday. The written statement shall be submitted to the Construction Manager as part of the weekly safety report.

E. Content of Examination

The following parameters shall be included in the medical surveillance program as a minimum. The actual parameters selected shall be the responsibility of the Occupational Physician and shall meet the requirements of 29 CFR § 1910.120, 1910.134 and ANSI Z88.2.

1. Complete medical and occupational history (initial exam only).
2. General physical examination including an evaluation of all major organ systems.

3. Pulmonary function testing including FVC and FEV1.0.
4. CBC with differential.
5. Biological blood profile (SMAC-21 or equivalent).
6. Urinalysis with microscopic examination.
7. Audiometric testing (as required by Hearing Conservation Program).
8. Visual acuity.
9. Chest x-ray. (This test to be performed no more frequently than every four years, unless directed by Occupational Physician.)
10. Electrocardiogram (as directed by Occupational Physician).

F. Recordkeeping

1. Medical records must be retained in accordance with CFR § 1910.120 (for the duration of employment plus 30 years).
2. Contractor must maintain records as follows:
   a. The name and Social Security Number of the Employee.
   b. Physician's written opinions, recommended limitations and results of examinations and tests.
   c. Any employee medical complaints related to exposure to hazardous substances.
   d. A copy of the information provided to the examining physician by the Contractor (with the exception of the standard and its appendices).

## 1.08 MONITORING EQUIPMENT

A. Contractor shall provide all medical and environmental monitoring equipment to be used at the site. The equipment shall meet the approval of the Construction Manager.

## 1.09 PERSONAL PROTECTIVE EQUIPMENT

A. Contractor shall supply all personal protective equipment (PPE) necessary to be in compliance with the HASP for all site personnel. Contractor shall make available PPE for use by the Construction Manager, CQA Consultant, and other site visitors.

## 1.10 LOGS, REPORTS, AND RECORDKEEPING

A. General

The Contractor shall maintain logs and reports covering the implementation of the HASP and shall include, but are not limited to other requirements of this section. The formats shall be developed by the Contractor and submitted as part of the HASP.

B. Daily Safety Log and Inspection Report

The daily safety log and inspection report shall include practices and events that affect safety and health, safety and health discrepancies encountered, and safety and health issues brought to the supervisor's attention. Each entry shall include:

1. Date.
2. Work area checked.
3. Employees present in work area.
4. PPE and work equipment being used in each area.
5. Special health and safety issues and notes.
6. Signature of preparer.

C. Safety Reports

Accident, Excursion, or Injury reports shall be submitted to the Construction Manager immediately (within 30 minutes) of the incident reported. When required, information shall be recorded on the forms to be provided by the Contractor where appropriate. The completed forms or reports shall be submitted to the Construction Manager within three days of the incident.

D. Monitoring and Sampling Results

Monitoring and sampling results shall be reported to the Construction Manager on a weekly basis. The results shall include the following, at a minimum.

1. Date.
2. Type of equipment utilized.
3. Equipment I.D. number.
4. Monitoring results for each work location or monitoring station with time of readings.
5. Analytical results for personal exposure sampling.

6. Personnel or location monitored/sampled with description of activity being performed.
7. Sample numbers.
8. Miscellaneous information related to monitoring/sampling performed.

E. Training Logs

Training logs shall be completed by the HSO and submitted to the Construction Manager upon request and at the completion of the work. These logs shall be used to document all on-site training. The format to be used for reporting shall be shown in the HASP. The following information shall, at a minimum, be included:

1. Date.
2. Employees in attendance and signature.
3. Visitors in attendance.
4. Description of training activity and/or topics covered.
5. Equipment utilized.
6. Signature of instructor.

F. Man-Hours

At the completion of each week or month of Work, the Contractor shall provide the Construction Manager with a summary of the total man-hours worked.

G. Close-Out Report

At the completion of the work, the Contractor shall submit a close-out report as a part of the Final Report. The report shall be submitted to the Construction Manager in accordance with the requirements of Section 01350, prior to final acceptance of the work. The following minimum information shall be included:

1. Summary of the weekly safety reports which outlines the overall performance of health and safety by the Contractor.
2. Documentation of medical certifications for site personnel.
3. Final decontamination documentation including procedures and techniques used to decontaminate equipment, vehicles, and on-site facilities.
4. Complete summary of air monitoring accomplished during the project.
5. Signature of the Contractor and the CIH (and date signed).

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 IMPLEMENTATION OF THE HASP

A. The Contractor must provide an on-site Health and Safety Coordinator during all activities, appropriately trained and certified for supervisory responsibility in health and safety protection. An alternate Health and Safety Coordinator, with equal training, must be designated to serve when the Health and Safety Coordinator is not on-site. The Health and Safety Coordinator or alternate shall be on-site at all times when work is in progress.

B. It shall be the responsibility of the Contractor's Health and Safety (H&S) Coordinator to ensure that all health and safety requirements are implemented in accordance with the approved Health and Safety Plan and applicable regulations. The H&S Coordinator will have control over the safe execution of the Contract while in progress. Should for any reason it be determined that the working conditions are unsafe, the H&S Coordinator, at his/her discretion, can terminate the work. The H&S Coordinator is charged with personnel decontamination and emergency response measures.

C. The H&S Coordinator will have the authority to act on all health and safety issues and matters, and to establish new controls, procedures or facilities as needed. If the Construction Manager determines that the Contractor's H&S Coordinator is not providing adequate health and safety controls, the Contractor shall provide alternate personnel subject to the approval of the Construction Manager to serve as H&S Coordinator. The Construction Manager shall have the right to stop work for health and safety considerations.

[END OF SECTION]

# SECTION 01035

# PERMITS

# SECTION 01035

# PERMITS

## PART 1 GENERAL

### 1.01 PERMITS AND APPROVALS PROVIDED BY OWNER

A. National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit. This permit was submitted to the Birmingham Branch of Alabama Department of Environment Management – Field Operation Division and includes completing a Notice of Registration (NOR). As part of the NOR, a Construction Best Management Practices Plan (CBMPP) was submitted. The CBMPP addresses pollution abatement/prevention management and structural/nonstructural best management practices (BMPs) needed for the various construction activities.

B. Local Development Permit. This permit was submitted to the City of Anniston and includes a standard application for permit to develop in a special flood hazard area, flood plain analysis package, and design drawings.

C. Land Disturbance Permit (LDP). This permit was submitted to the City of Anniston and includes completing a standard application for land disturbing activities. Copies of both the NPDES general construction stormwater permit and the approved CBMPP were submitted as part of the LDP. As part of the application, the floodplain analysis package and design drawings were submitted.

D. Copies of these permits are provided as a part of the Bid Documents.

### 1.02 PERMITS AND APPROVALS TO BE OBTAINED BY CONTRACTOR

A. The construction contractor will be responsible for obtaining any additional permits required to perform the work as outlined in the design documents, including:
   1. City of Anniston building permit;
   2. City of Anniston business license; and
   3. State of Alabama contractor license.

## 1.03 SUBMITTALS

A. Contractor shall submit permits obtained by the Contractor to the Construction Manager prior to start of the work.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

Not Used.

[END OF SECTION]

# SECTION 01094

# DEFINITIONS

# SECTION 01094

# DEFINITIONS

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section defines terms and phrases used in the Specifications and supplements the definitions given in the General Conditions.

### 1.02 TERMS AND PHRASES

A. Construction Manager. The Construction Manager, Matrix Environmental Services, L.L.C. (MES), is the duly appointed Agent of the Owner and also referred to as the Owner's Representative. The Construction Manager is responsible for overall management of the project, administration of the project contracts, and coordination of site construction operations. The Construction Manager shall be responsible for review and approval of submittals, work plans, design/specification changes, schedules, clarifications, and shop drawings. The Construction Manager is also responsible for obtaining approval of Design and Specification changes and making design clarification requests which may be required during construction.

B. Contamination Reduction Zone (CRZ). The area between the Exclusion Zone and the Support Zone which provides a transition between contaminated and clean areas. The Contamination Reduction Zone serves as a buffer to reduce the probability of clean zones becoming contaminated or being affected by other existing hazards. It provides additional assurance that the physical transfer of contaminating substances on people or equipment is limited through a combination of decontamination, distance, zone restrictions, and permissible zone work activities. The Contamination Reduction Zone is initially considered to be a non-contaminated area. At the boundary between the Exclusion and Contamination Reduction Zone, a Contamination Reduction Corridor (Decontamination Area) is established. Two stations are established, one for equipment decontamination and the other for personnel decontamination. Exit from the Exclusion Zone is through the Contamination Reduction Corridor.

C. CQA Consultant. The CQA Consultant, GeoSyntec Consultants, is a party separate from the Owner or the Contractor and is responsible for construction quality assurance (CQA) testing, monitoring, and associated duties related to assuring the quality of construction and adherence to the Project Drawings and Specifications. The CQA Consultant shall perform duties as required by the CQA Plan and, upon construction completion, shall issue a CQA Certification Report. The CQA Consultant shall be responsible for reviewing the Contractor's shop drawings and submittals as requested by the Construction Manager.

D. Engineer. The Engineer, GeoSyntec Consultants, shall have the authority to recommend changes or modifications to the Project Drawings and Specifications for approval by the Construction Manager.

E. Exclusion Zone. The area where contamination does or could exist at the site. Personnel entering the Exclusion Zone must wear prescribed levels of personal protective clothing and respiratory gear as outlined in the site Health and Safety Plan. Entry and exit check points shall be established at the periphery of the Exclusion Zone to regulate the flow of personnel and equipment into and out of the zone and to verify that the procedures established to enter and exit are followed. The boundary of the Exclusion Zone shall be defined by the Contractor and approved by the Construction Manager and shall be physically marked with a fence.

F. Health and Safety Officer. The person employed by the Contractor having overall responsibility for implementation and enforcement of the site Health and Safety Plan.

G. Impacted Soil. Soil known or suspected to be in contact with waste material.

H. Munitions and Explosives of Concern (MEC). The potential for encountering munitions and explosives of concern (MEC) at LF3 and FANWR is deemed to be "low" since this area has already been cleared by the US Army (*Site Specific Final Report M1.01 Parcel and M3 Miscellaneous Property Fort McClellan, Alabama*, March 2003). On-Call MEC support services will be provided during any excavation activities that are conducted. On-Call MEC support services include providing initial MEC awareness training and periodic site inspections. Construction personnel will be given a safety briefing by the JPA's MEC Management Team. Personnel will be instructed on visual MEC recognition, MEC hazards, and MEC notification procedures. If MEC is encountered during construction activities, a reassessment of the site will be conducted by the JPA's MEC Management Team to determine if the potential for encountering MEC is still low. If the potential for

encountering MEC is raised, there may be a need for additional construction support to include surface and subsurface clearance of MEC in the excavation footprint prior to conducting any further intrusive activities.

I. Owner. The Owner is the Fort McClellan Development Joint Powers Authority (JPA). The Owner has authorized execution of the Contract by the Construction Manager as Agent. The Owner shall act through its duly appointed Agent, (the Construction Manager), MES.

J. Owner's Representative. See definition for Construction Manager.

K. Site. The area defined by the property located on McClellan where work is proposed to be performed as identified in the Bid Documents, the Drawings, and the Technical Specifications.

L. Site Health and Safety Officer. The person employed by the Contractor and assigned to the site on a full-time basis for the duration of the project with the functional responsibility for implementation and enforcement of the site Health and Safety Plan.

M. Site Manager. Contractor employee responsible for managing and monitoring site work for which the Contractor is responsible.

N. Support Zone. The outermost area of the site, which is considered a clean and non-contaminated area. Support equipment is located in this zone and traffic is restricted to authorized personnel. Normal work clothes are appropriate in this zone. Potentially contaminated personnel clothing, equipment, and samples are not permitted in the Support Zone unless they have been properly contained and decontaminated.

## 1.03 ABBREVIATIONS/ACRONYMS

A. ALDOT – Alabama Department of Transportation

B. BAS – Borrow Area Site

C. CRZ – Contamination Reduction Zone

D. EZ – Exclusion Zone

E. FANWR – Fill Area Northwest of Reilly Airfield

F. HASP – Health and Safety Plan

G. HSO – Health and Safety Officer

H. JPA – Joint Powers Authority

I. LF3 – Landfill 3

J. MEC – Munitions and Explosives of Concern

K. MES – Matrix Environmental Services, L.L.C.

L. SZ – Support Zone

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

[END OF SECTION]

# SECTION 01100

# ENVIRONMENTAL PROTECTION

# SECTION 01100

# ENVIRONMENTAL PROTECTION

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. The Contractor shall furnish labor, materials, tools, supervision, transportation, equipment, and incidentals necessary to satisfy the requirements for environmental protection herein.

B. The Contractor shall provide environmental protection throughout the execution of the work and shall specifically provide controls to prevent the occurrence of any unacceptable level of risk to public health and the environment (air, water, and land) during construction activities.

C. The Contractor shall minimize any environmental disturbance during the work activities which would conflict with this standard.

D. The Contractor and associated subcontractors shall comply with applicable federal, state, and local laws and regulations relating to the activities to be performed.

### 1.02 RELATED SECTIONS

A. Section 01350 — Submittals

B. Section 01560 — Temporary Controls

### 1.03 REFERENCES

Not Used

### 1.04 SUBMITTALS

A. The Contractor shall prepare and submit for approval, a Comprehensive Spill and Emission Control Plan in accordance with requirements set forth in Section 01350 of the

Specifications. Three (3) copies of the draft plans shall be submitted to the Construction Manager within fourteen (14) days after the Notice to Proceed (NTP). Three (3) copies plus one (1) reproducible copy of the final plan shall be submitted to the Construction Manager within five (5) days after the Contractor receives comments on the draft plan.

## 1.05 NOTIFICATION

A. If the Contractor is notified of or becomes aware of any nonconformance with federal, state, or local laws or regulations, the Contractor shall immediately inform the Construction Manager of a proposed corrective action and take such action as may be approved.

B. If the Contractor fails or refuses to comply promptly with the approved corrective action, the Construction Manager may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for additional costs or damages by the Contractor.

C. The potential for encountering munitions and explosives of concern (MEC) at LF3 and Fill Area Northwest of Reilly Airfield (FANWR) is deemed to be "low" since this area has already been cleared by the US Army (*Site Specific Final Report M1.01 Parcel and M3 Miscellaneous Property Fort McClellan, Alabama*, March 2003). On-Call MEC support services will be provided during any excavation activities that are conducted. On-Call MEC support services include providing initial MEC awareness training and periodic site inspections. Construction personnel will be given a safety briefing by the JPA's MEC Management Team. Personnel will be instructed on visual MEC recognition, MEC hazards, and MEC notification procedures. If MEC is encountered during construction activities, a reassessment of the site will be conducted by the JPA's MEC Management Team to determine if the potential for encountering MEC is still low. If the potential for encountering MEC is raised, there may be a need for additional construction support to include surface and subsurface clearance of MEC in the excavation footprint prior to conducting any further intrusive activities.

D. The potential for encountering Characteristic Hazardous Waste and Friable Asbestos at LF3 and FANWR is deemed to be low based upon the fill records available for the facilities. Chemical Awareness training and periodic site inspections will be provided to

the Contractor and subcontractors by the Owner or Owner's Representative. Disposal of these wastes, if encountered is discussed in section 1.10 of this Specification.

## 1.06 PROTECTION OF LAND RESOURCES

A. The Contractor shall provide temporary control measures to prevent soil erosion in accordance with the requirements of Section 01560, Temporary Controls, the Drawings, and applicable Plans (i.e., Erosion and Sediment Control Plan, Borrow Area Management Plan). Erosion control measures taken by the Contractor shall fulfill requirements of applicable federal and state regulations for erosion control.

B. The Contractor shall maintain excavations, embankments, staging areas, permanent and temporary access roads, storage areas, and other work areas including outside the site boundaries free from dust which could cause hazard or nuisance.

## 1.07 PROTECTION OF AIR RESOURCES

A. The Contractor will be required to prepare and submit for approval an air emissions control plan as part of a Comprehensive Spill and Emission Control Plan for this site. The air emissions control plan will target dust control and control of volatile organic emissions.

1. Dust Control. Methods of dust control may include water dispersion, certain chemical treatments, or similar methods. Runoff water created during construction of the FANWR closure may be used during the project for dust control with prior approval of the Construction Manager. Water dispersion shall be repeated at intervals which will assure that ground conditions in work areas do not result in the release of visible dust clouds from the site above the action levels specified in the Health and Safety Plan. The area of the site under active grading shall be controlled to limit dust emissions during regrading of the impacted material. Dust control activities shall be increased if air monitoring results or the judgment of the Site Health and Safety Officer indicates the need for such action.

2. Control of Volatile Organic Compounds (VOCs). Although it is not anticipated that significant levels of VOCs will be encountered during the construction of the Cap

System and waste excavation, it is possible that some soil impacted with VOCs will be encountered during excavation and grading. It is expected that significant odors and landfill gas, and potentially explosive gases will be encountered. In order to prevent any release of these types of emissions, the measures to be taken routinely by the Contractor during grading and earthwork shall include: i) limiting the area being graded as needed; ii) dust control measures as needed; iii) restricting traffic on newly graded areas; and iv) using tarps and sheeting if needed. The Health and Safety Plan shall outline air monitoring procedures to be followed by the Contractor during processing, grading, and waste excavation as well as levels of VOCs, particulates, and landfill gas emissions that will result in work practice changes.

## 1.08 PROTECTION OF WATER RESOURCES

A. The Contractor shall perform activities in a manner that minimizes the potential for harmful impacts to surface water and groundwater. Measures for protection of water resources shall include providing temporary drainage facilities to control runoff beyond the work zone boundary that has been in contact with exposed waste, Exclusion and Contamination Reduction Zones, and to control runoff from the site. These drainage features shall be maintained throughout the period of construction.

B. The Contractor shall not dispose of any materials into any waters and shall install and maintain temporary controls per the requirements of Section 01560 as needed throughout the work. Tarps or plastic sheeting shall also be used to prevent runoff from newly exposed areas where soils appear to be contaminated. The Contractor shall take whatever steps are necessary to comply with all applicable federal and state regulations for sedimentation and erosion control.

C. The Contractor shall test surplus surface water collected per the State of Alabama surface water discharge requirements and the Installation-Wide Sampling and Analysis Plan prior to discharge.

## 1.09 SPILL CONTROL

A. The Contractor shall prepare, implement, maintain, and be responsible for a Comprehensive Spill and Emission Control Plan. Specific spill control requirements are summarized below.

1. The Contractor shall immediately notify the Construction Manager in the event of a spill, regardless of the spill location.
2. The Contractor shall provide methods, means, and facilities required to prevent contamination of land, air, water, uncontaminated structures, equipment, or material by the discharge of wastes or residues due to Contractor's operations.
3. The Contractor shall provide material, equipment, and personnel to perform emergency measures required to contain any spillage, and to manage spilled materials and soils or liquids that become contaminated due to spillage. This collected material shall be properly disposed of at the Contractor's expense.
4. The Contractor shall provide equipment and personnel required to perform decontamination measures that may be required to remove spillage from previously uncontaminated structures, equipment, material, or soil. Decontamination residues shall be properly treated and/or disposed at the Contractor's expense.
5. The Contractor shall provide equipment and personnel to mitigate any spillage of material which might occur during transport off site.

## 1.10 DISPOSAL OF DEBRIS

A. Disposal of site debris resulting from construction activities shall be approved by the Construction Manager and performed in accordance with the required regulatory requirements.

B. The Industrial Landfill shall be used by the Contractor for disposal of wastes generated as a result of this project's work. Waste that may be disposed of in the Industrial Landfill is defined as follows: Solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone,

glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This does not include fly ash waste, bottom ash waste, boiler slag waste, or flue gas emission control waste which result fro the combustion of coal or other fossil fuels at electric or steam generating plants. Additionally, this does not include mining waste or oil and gas wastes, or small quantity generator waste as defined in Rule 335-14-2-.01(5). Uncontaminated concrete, soil, brick, rock, and similar materials are excluded from this definition. Municipal solid waste shall not be disposed of in the Industrial Landfill. PPE may be disposed of in the Industrial Landfill.

C. The Operation Plan and current Waste Disposal Permit for the onsite Industrial Landfill will be provided to the Contractor by the Construction Manager. The Operation Plan contains requirements consistent with the Alabama Department of Environmental Management (ADEM) Solid Waste Regulations, Chapter 335-13-1 through 8.

D. The Contractor shall be responsible to haul, place, and cover the waste material in accordance with the facility's Operation Plan and current Waste Disposal Permit. JPA will be responsible to oversee waste placement activities. The Contractor shall coordinate waste placement activities and schedule with the Construction Manager.

E. Characteristic Hazardous Waste, if encountered, will be disposed of at a permitted offsite hazardous waste disposal facility. The Contractor shall be responsible for excavation, containerization, hauling, disposal, permits, and health and safety associated with this action.

F. Friable Asbestos, if encountered, will be disposed of at the Industrial Landfill. The Contractor shall be responsible for excavation, containerization, hauling, disposal in accordance with the current Waste Disposal Permit and Operational Plan, and health and safety associated with this action.

## 1.11 BURNING

A. Burning of any type of refuse, debris, or vegetation will not be permitted.

## 1.12 MAINTENANCE OF MONITORING FACILITIES DURING CONSTRUCTION

A. The Contractor shall maintain facilities constructed for environmental control and monitoring for the duration of the project.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

Not used.

[END OF SECTION]

# SECTION 01200

# PROJECT MEETINGS

# SECTION 01200

# PROJECT MEETINGS

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This Section covers the requirements for project meetings, and the responsibilities of the Contractor with regard to project meetings.

### 1.02 RELATED SECTIONS

A. Section 01350 — Submittals

### 1.03 REFERNCES

Not Used

### 1.04 SUBMITTALS

A. The Contractor shall submit meeting agenda, as required by this section.

B. The Construction Manager shall prepare meeting minutes as required by this Section.

C. The Contractor shall submit documents at the Preconstruction Conference as required by this Section.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 GENERAL

A. Attendance: Unless otherwise specified or required by the Construction Manager, the meetings shall be attended at a minimum by the Construction Manager, CQA Consultant, Contractor's Site Manager, Contractor's Quality Control personnel, and the Contractor's Site Health and Safety Officer. Subcontractors may attend when involved in the matters to be discussed or resolved, but only when requested by the Construction Manager.

B. Agenda: The Contractor shall prepare a written agenda for the meetings, make physical arrangements for the meetings and attend the meetings, unless the Construction Manager requests otherwise. The Contractor shall submit the agenda to the Construction Manager for review three (3) calendar days prior to each meeting.

C. Meeting Minutes: The Construction Manager or if designated by the Construction Manager, the CQA Consultant, shall record the meeting minutes. The meeting minutes shall include, at a minimum, significant proceedings, decisions, and action item party identification. The Construction Manager shall reproduce and distribute (deliver, mail, or electronically transmit) copies of minutes within three (3) calendar days after each meeting to the Contractor and meeting attendees. If the Contractor does not submit a written objection to the contents of such minutes within seven (7) calendar days after presentation to him, it shall be understood and agreed that the parties accept the minutes as a true and complete record of the meeting. Meeting minutes requiring modifications shall be corrected. The Construction Manager shall then reproduce and distribute (deliver, mail, or electronically transmit) copies of the minutes to participants in the meeting, to parties affected by decisions made at the meeting within three (3) calendar days after acceptance.

D. Initial dates and times for various meetings shall be agreed upon and recorded at the Preconstruction Conference. Changes to the schedule shall be by consent of the Construction Manager, with appropriate written notice to all parties involved. One progress meeting per week will be conducted at the site throughout the duration of the project. The Construction Manager may choose to increase or decrease the frequency of these meetings as necessary.

## 3.02 PRECONSTRUCTION CONFERENCE

A. A Preconstruction Conference shall be held as required in the General Conditions – Section 0700 Part 2.07, and at a location to be specified by the Construction Manager. The meeting shall be held within 7 to 10 calendar days of the Notice to Proceed date. The meeting shall be attended by representatives of the Owner, the Construction Manager, appropriate Contractor personnel, the CQA Consultant, and other persons the Construction Manager may designate. The meeting shall conform to the requirements of this section and the General Conditions – Section 00700.

1. Execution and Submittal of Documents. Unless otherwise specified or agreed by the Construction Manager and Contractor prior to the Preconstruction Conference, the Contract Agreement shall be executed by the parties thereto and the Contractor shall present to the Construction Manager the Bonds, certificates of insurance, preliminary progress schedule, and other pre-construction documents required of the Contractor by the Plans, Specifications, and Project Drawings.
2. Agenda. In general, the matters to be discussed or resolved and the instructions and information to be furnished to or given by the Contractor at the Preconstruction Conference shall include:
   a. project meeting schedule which shall be prepared by the Construction Manager;
   b. progress schedule and schedule of values submitted by the Contractor;
   c. communication procedures between the parties;
   d. the names and titles of all persons authorized by the Contractor to represent and execute documents;
   e. the names, addresses, and telephone numbers of all those authorized by the Contractor to act for him in emergencies;
   f. construction permit requirements, procedures, and posting;
   g. review of preliminary construction schedule as it pertains to the interfacing of work by others;
   h. access and rights-of-way furnished by the Property Owner;
   i. forms and procedures for Contractor's submittals;
   j. Change Order forms and procedures;
   k. payment application forms and procedures and the revised progress schedule reports to accompany the applications;
   l. Contractor's safety and training program, and designation of the Contractor's Health and Safety Officer and Site Health and Safety Officer and their qualifications;

m. discussion of awareness training that will be provided by the Owner and Owner's Representative in accordance with Specification Section 01030 Part 1, 1.01 B.
n. first-aid and medical facilities to be furnished by Contractor;
n. contractor's provisions for utilities, sanitary facilities, and other temporary facilities and controls;
o. construction equipment and methods proposed by the Contractor;
p. procedures for payroll and labor cost reporting by the Contractor;
q. issuance of the Notice to Proceed; and
r. other administrative and general matters as needed.

## 3.03 PROGRESS MEETINGS

A. Progress meetings shall be held to discuss matters bearing on the progress and performance of the work since the preceding progress meeting.
1. Schedule. The meetings shall be held on a weekly basis in accordance with the agreed schedule prepared by the Construction Manager.
2. Agenda. The matters discussed at each progress meeting shall include:
a Health and Safety update, issues, and concerns (shall be Item No. 1 in each Agenda);
b. review of work progress since previous meeting;
c. field observations, problems, conflicts;
d. identification of problems which impede construction schedule;
e. corrective measures and procedures to regain projected schedule;
f. revisions to construction schedule;
g. anticipated progress during succeeding working period (include 3 week projection);
h. coordination of schedules;
i. review submittal schedules; expedite as required;
j. maintenance of quality and safety standards;
k. pending changes and substitutions;
l. review proposed changes for effect on construction schedule and on completion date; and
m. other business.

## 3.05 SPECIAL MEETINGS

A. Upon appropriate notice to the other parties, special meetings may be called by the Construction Manager or the Contractor.

## 3.06 REGULATORY AGENCIES

A. When requested by the Construction Manager, the Contractor shall attend meetings held or required by the governmental regulatory agencies having jurisdiction over the project.

## 3.07 POST-CONSTRUCTION CONFERENCE

A. A post-construction conference shall be held at the site prior to final inspection of the work to discuss and resolve unsettled matters. The bonds and insurance to remain in force, and the other documents required to be submitted by the Contractor will be reviewed and any deficiencies determined. Schedules and procedures for the final inspection process and for the correction of defects and deficiencies shall be discussed and agreed upon.

[END OF SECTION]

# SECTION 01310

# PROGRESS SCHEDULES

# SECTION 01310

# PROGRESS SCHEDULES

## PART GENERAL

### 1.01 DESCRIPTION OF WORK

A. The Contractor shall be responsible for developing and maintaining construction schedules and related requirements as specified herein.

### 1.02 RELATED SECTIONS

A. Section 01350 — Submittals

### 1.03 REFERENCES

Not Used.

### 1.04 SUBMITTALS

A. The Contractor shall submit a preliminary construction schedule with the Bid. The Progress Schedule shall contain subschedules of related tasks and activities that are essential to its progress.

B. The Contractor shall submit a draft final/baseline construction schedule and Materials and Waste Handling Work Plan for discussion and review at the Preconstruction Conference.

C. The Contractor shall submit a revised final/baseline schedule along with the revised and completed Materials and Waste Handling Work Plan within seven (7) calendar days after the Preconstruction Conference.

D. The Contractor shall revise and submit construction progress schedules weekly, or as directed by the Construction Manager, during the course of the work. Schedules shall be submitted to the Construction Manager by close of business on Monday each week.

E. The Contractor shall not start field work until the final/baseline schedule and final Materials and Waste Handling Work Plan have been reviewed and accepted by the Construction Manager.

## 1.05 SCHEDULE FORMAT

A. Construction schedules shall be developed in the form of Critical Path Method (CPM) charts, using MS Project (or equal) with the characteristics listed below.
   1. Each major task shall be represented. Significant subtasks shall be broken out from each major work element.
   2. The time scale shall indicate the first work day of each week.
   3. The diagram shall allow space for notations.
   4. The minimum diagram size shall be 11 x 17 inches.
   5. Tasks shall be listed in essentially chronological order, with the activities that are to occur first given at the top of the Schedule.
   6. The critical path shall be clearly indicated.

## 1.06 SCHEDULE CONTENT

A. Each Construction Schedule shall indicate:
   1. the complete sequence of work by activity;
   2. the dates for the beginning and completion of each major task and the sequence of significant subtasks;
   3. clearly delineated rain delays,
   4. the estimated percent completion for each item, as of the first day of each month; and
   5. interim milestone dates.

## 1.07 PROGRESS REVISIONS

A. Revisions to schedules shall include:
   1. progress of each activity to date of submission;
   2. changes occurring since the previous schedule submission including:
      a. major changes in scope;
      b. activities modified since previous submission;
      c. revised projections of progress and completion;
      d. other identifiable changes; and

e. force major occurrences:

3. a narrative report as needed to define:
   a. problem areas, anticipated delays, and impacts on Schedule;
   b. corrective action recommended and its effect; and
   c. effect of changes on schedules of other contractors.

4 a recovery schedule if the critical path indicates less than five (5) days of float.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

[END OF SECTION]

# SECTION 01350

# SUBMITTALS

# SECTION 01350
# SUBMITTALS

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section covers the requirements for submittals to be made during construction.

### 1.02 RELATED SECTIONS

A. This section relates to all other sections of the Contract Documents.

### 1.03 REFERENCES

Not Used.

### 1.04 TYPES OF SUBMITTALS

A. Submittals include, but are not limited to, the following:
   1. Plans. Plans include the specific Plans required by the Specifications prior to initiation of site work activities. Plans shall be written by the Contractor for submittal as specified herein. Required Plans are listed in Table 01350-1.
   2. Administrative Submittals. Administrative submittals include, but are not limited to:
      a. meeting agenda;
      b. schedules;
      c. Schedule of Values;
      d. project photographs;
      e. Project Record Documents;
      f. warranties and guarantees on work, equipment, and facilities;
      g. as-constructed data;
      h. site surveys; and
      i. chemical data.

3. Technical Submittals. Technical submittals include, but are not limited to:
   a. Manufacturer's specifications;
   b. catalogs, or parts thereof, of manufactured equipment;
   c. performance tests on materials and equipment;
   d. concrete or grout mix design information; and
   e. laboratory and field quality control/quality assurance test results.

## 1.05 QUALITY

A. Submittals shall be reproducible with every line, character and letter clearly legible, and usable for further reproduction to yield legible hard copies.

B. Documents submitted to the Construction Manager or designee that do not conform to these requirements will not be accepted. If conforming submittals cannot be obtained, such documents shall be retraced, redrawn, or photographically restored as may be necessary to meet such requirements. Contractor's failure to initially satisfy the legibility and quality requirements will not relieve Contractor from meeting the required schedule for submittals.

C. Submittals shall be complete with respect to design criteria and other information specified to enable the Construction Manager or designee to review the information effectively.

## 1.06 LANGUAGE AND DIMENSIONS

A. All words and dimensional units shall be in the English language and units.

B. Metric dimensional unit equivalents may be stated in addition to the English units and the associated requirements.

## 1.07 SUMMARY OF PROJECT SUBMITTALS

A. A summary of the major project submittals and the associated requirements is given in Table 01350-1. Additional submittals and requirements shall be provided as indicated by the Specifications or requested by the Construction Manager or designee.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 GENERAL REQUIREMENTS

A. The Contractor shall submit to the Construction Manager submittals required by the Contract Documents, these Specifications and the support Plans, and any subsequent modifications.

B. Items required to be submitted for review shall be furnished by and at the expense of the Contractor and any work affected by them shall not proceed until approval is received. Submittals and their contents shall be properly prepared, identified, and transmitted as provided herein or as otherwise directed.

C. Work shall not commence until Plan submittals have been reviewed and accepted by the Construction Manager.

### 3.02 SUBMITTAL REVIEW TIME

A. Unless stated otherwise for a specific item herein, not less than five (5) calendar days shall be assumed for the review of draft submittals and not less than five (5) calendar days shall be assumed for the review of final submittals, not including two days for delivery or mailing.

B. Review of submittals by the Construction Manager or its representative should not cause a delay in the work. Contractor shall provide review time within the schedule that will allow for review of draft and final submittals.

C. Extension of the Contract time will not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals with allowance for the checking and review periods.

## 3.03 DEVIATIONS

A. At the time of the submission, the Contractor shall give notice in writing in the submittal of any deviation from the requirements of the Contract Documents. The deviations shall be clearly indicated or described including other changes required to correlate the work.

B. The Contractor shall state in writing variations in cost occasioned by the deviations and his assumption of the cost of related changes if the deviation is approved. Requirements stated in Paragraph 3.06 below also shall apply.

## 3.04 METHOD OF SUBMITTAL

A. The Contractor shall deliver submittals by means of dated, signed, and sequentially numbered transmittals identified as to initial or resubmittal status, and fully describing the submittal contents.

B. In each transmittal, the Contractor shall state the Owner's project number and name, name and address of the Contractor, name and address of the subcontractor, manufacturer, supplier or distributor as applicable, and the Plan and/or Specification section reference and paragraphs to which the submittal pertains. Accompanying data sheets, catalogs, and brochures shall be identified in the same manner.

C. Submittal transmittals shall fully index items submitted.

D. Where several types or models are contained in the literature, the Contractor shall delete nonapplicable portions or specifically indicate which portions are intended and applicable.

E. Submittals directly from subcontractors, suppliers, or manufacturers are not acceptable.

F. Incomplete submittals, including those not correctly transmitted, not correctly titled and identified, or not bearing the Contractor's review and approval stamp, will be returned to the Contractor without review.

G. Except where the preparation of a submittal is dependent upon the approval of a prior submittal, all submittals pertaining to the same class or portion of the work shall be submitted simultaneously.

## 3.05 CONTRACTOR'S REVIEW AND APPROVAL

A. Every submittal shall bear the Contractor's review and approval stamp certifying that the Contractor has:
   1. reviewed, checked, and approved the submittal;
   2. coordinated the contents with the requirements of the work, the Contract Documents, and this Section including related work;
   3. determined and verified all quantities, field measurements, field construction criteria, materials, equipment, catalog numbers, and similar data; and
   4. stated the work covered by the submittal is recommended by the Contractor and the Contractor's guarantee will fully apply thereto.

B. The Contractor's stamp shall be dated and signed by the Contractor in every case.

## 3.06 REVIEW AND APPROVAL

A. The approval of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents or for any revision in resubmittals unless the Contractor has given notice in writing of the deviation or revision at the time of submission (or resubmission) and written approval has been given of the specific deviation or revision.

B. The approval of submittals shall not relieve the Contractor of responsibility for errors or omissions in the submittals or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, and completion of the work.

## 3.07 CORRECTIONS AND RESUBMITTALS

A. The Contractor shall make required corrections within five (5) calendar days or as specified elsewhere in the Specifications, and shall resubmit the required number of corrected submittals until approved by the Construction Manager or designee.

B. The Contractor shall direct specific attention in writing to revisions other than the corrections called for on previous submittals.

C. The Contractor shall state, in writing, variations in costs and his assumption of the cost of related changes, as is required for deviations in Paragraph 3.03.

D. Each resubmittal shall be identified with the number of the original submittal followed by consecutive numbers starting with "01" for first resubmittal, "02" for second resubmittal, etc.

E. The Construction Manager or designee reserves the right to deduct moneys from the amounts due to the Contractor to cover the cost of its review time beyond the second submission.

## 3.08 CHECK OF RETURNED SUBMITTALS

A. The Contractor shall check returned submittals for correction and ascertain if the corrections result in extra cost to him above that included under the Contract Documents.

B. If in the Contractor's opinion, extra costs result beyond that included under the contract, he shall give written notice to the Construction Manager within five (5) calendar days. By failing to so notify both parties, the Contractor waives all claims for extra costs resulting from required corrections.

## 3.09 CONFORMANCE

A. No work represented by required submittals shall be purchased or shall commence until the applicable submittal has been approved.

B. Work shall conform to the approved submittals and other requirements of the Contract Documents unless subsequently revised by an appropriate modification, in which case the Contractor shall prepare and submit revised submittals as may be required.

C. The Contractor shall not proceed with any related work which may be affected by the work covered under submittals until the applicable submittals have been approved, particularly where machinery, equipment, concrete work, grading and the required arrangements and clearances are involved.

## 3.10 SPECIFIC REQUIREMENTS

A. Materials and Waste Handling Work Plan.

1. The Contractor shall prepare a Materials and Waste Handling Work Plan describing in detail site activities involving the handling of materials from the time they arrive on site to the time that they are incorporated into the work. Also included shall be the handling of onsite materials through the ultimate disposition of these materials on or off site. In general, this plan shall supplement the project schedule by providing a detailed description of the various work activities for the project. The Contractor shall **specifically** include waste excavation, handling, transportation, and placement within the Fill Area Northwest of Reilly Airfield.
2. Information presented shall include, but not be limited to:
   a. storage locations, details, and protection requirements for materials to be incorporated into the work, including temporary soil stockpile areas requiring regrading of areas;
   b. excavation methods, equipment and personnel, proposed for impacted material movement;
   c. access routes to the work area;
   d. dependence on other tasks, particularly preceding activities;
   e. site drawings showing details of facilities locations and placement of temporary utilities parking areas, access road, and staging areas;
   f. a traffic control plan for all hauling of materials from and to the proposed work areas to the soil borrow areas shall be included.. As part of the Traffic Management Plan and Materials Handling Plan, the Contractor shall identify a staging area that works with their traffic management.

B. Contractor Health and Safety Plans. Each Contractor and subcontractor shall provide a written Health and Safety Plan in accordance with the requirements of Section 01030 Health and Safety covering health and safety issues specific to the tasks and operations to be performed by the Contractor or subcontractor.

C. Comprehensive Spill and Emission Control Plan. The Contractor shall prepare a Comprehensive Spill and Emission Control Plan according to requirements set forth in Sections 01100 and 01350 of these Specifications. This Plan shall include details of proposed methods for protection of air resources as required by Section 01100.

D. Contingency Plan. The Contractor shall provide the following:

1. training requirements for the use of Contractor specific onsite emergency equipment; and
2. details regarding any duties of operations personnel that are specific to the implementation of emergency response procedures by the selected Contractor.

**Anniston-Calhoun County**
**Fort McClellan Development**
**Joint Powers Authority**

180 Headquarters Drive · Bldg. 61
Anniston, Alabama 36205 · USA
Tel (256) 236-2011

# SUBMITTAL LOG

| | | | |
|---|---|---|---|
| **TO:** | | **Date:** | **Job No.:** |
| **ADDRESS:** | | **Project Name:** | |
| | | | |
| | | | |
| | | | |

| | | |
|---|---|---|
| JPA Project. No.: | Revision No.: | Submittal No.: |
| Specification Section(s): | Date of Submittal Report: | |
| Submittal Subject: | | |

**Notations:**

- ☐ **No Exception Taken**
- ☐ **Correct as Noted**
- ☐ **Rejected**
- ☐ **Revise and Resubmit**
- ☐ **Submit Specified Items**

**Remarks:**



Review of this submittal does not relieve the Contractor from their responsibility for deviations from the Contract Documents nor from their responsibility for errors or omissions in the submittal. Contractor is, and Engineer is not, responsible for matters relating to fabrication, shipping, handling, storage, assembly, installation, construction (including safety), and coordination for performing the Work

**Prepared by** **Date** **Authorized Representative** **Date**

Distribution:
- ☐ x_____
- ☐ x_____
- ☐ x_____

Sheet No. _____ of _____

# Table 01350-1
## SUMMARY OF PROJECT SUBMITTALS/SUBMITTAL LOG

| Submittal Type | Submittal | Specifications or Plans That Define Submittal Requirements | Period of Submission | Date Received by CM (Draft) | Date Returned to Contractor | Date Received by CM (Final) | Date Approved by CM |
|---|---|---|---|---|---|---|---|
| Plans | | | | | | | |
| | Comprehensive Spill and Emission Control Plan | Section 01100, 11003 | Draft 14 calendar days after NTP; Final 5 calendar days after receipt of comments | | | | |
| | Materials and Waste Handling Work Plan (including Traffic Control Plan) | Section 02206, 01350, 02110 | Final 10 calendar days after receipt of comments | | | | |
| | Contractor Health and Safety Plan | Section 01030 | Draft 14 calendar days after NTP; Final 5 calendar days after receipt of comments | | | | |
| | Contingency Plan | Section 01350 | Draft 14 calendar days after NTP; Final 5 calendar days after receipt of comments | | | | |
| | Temporary Facilities Plan | Section 01520 | Draft 14 calendar days prior to installation Final 5 calendar days after receipt of comments | | | | |
| | Decontamination Facility Plan | Section 11004 | Draft 14 calander days prior to installation Final 5 calendar days after receipt of comments | | | | |
| Administrative | | | | | | | |
| | Meeting Agenda | Section 01200 | Submit 3 calendar days prior to each meeting | | | | |
| | Meeting Minutes | Section 01200 | Submit 3 calendar days after meeting, attendees have 7 calendar days to comment, corrections made within 3 calendar days | | | | |
| | Schedule | Section 01310 | Draft with Bid Final within 7 calendar days after the Preconstruction Conference | | | | |
| | Construction Progress Schedules | Section 01310 | Weekly, by close of business each Monday, and with each Progress Payment Request | | | | |
| | Schedule of Values | within Contract | Submit with Bid | | | | |
| | Project Photographs | Section 01380 | Within 10 days of taking photograph, and submit at Post Construction Conference | | | | |
| | Warranties | Section 01700, 01740 | Prior to project acceptance for a period of 1 year | | | | |
| | Analytical Data | Section 01400 | Submit within 2 calendar days of reciept of data | | | | |
| | Bonds and Insurance | within Contract | Submit within 10 days of NTP | | | | |
| | Temporary Utilities | Section 01510 | Draft 14 calendar days prior to installation Final 5 calendar days after receipt of comments | | | | |
| | Project Signs | Section 01580 | Draft 14 calendar days prior to installation Final 5 calendar days after receipt of comments | | | | |
| | Punchlist | Section 01700 | Within 1 day of punchlist walk | | | | |
| | Completion of punchlist items certification | Section 01700 | Two calendar days prior to final acceptance walk | | | | |
| | Notice of completion | Section 01700 | within 3 days of final acceptance | | | | |
| | Project Record Documents | Section 01700, 01720 | Within 14 calendar days of final project acceptance | | | | |
| | Final Application for Payment | Section 01700 | Within 21 calendar days of project acceptance | | | | |
| | Close-out Safety Report | Section 01030, 01600, 01700 | Within 14 calendar days of final project acceptance | | | | |
| | Permits and Approvals | Section 01035 | prior to start of work | | | | |
| | Surveyor's Notes | Section 02010 | Weekly | | | | |
| Administrative | Calibration Documentation for Surveying Equipment | Section 02010 | Monthly | | | | |

# Table 01350-1
## SUMMARY OF PROJECT SUBMITTALS/SUBMITTAL LOG

| Submittal Type | Submittal | Specifications or Plans That Define Submittal Requirements | Period of Submission | Date Received by CM (Draft) | Date Returned to Contractor | Date Received by CM (Final) | Date Approved by CM |
|---|---|---|---|---|---|---|---|
| | Initial Record Survey Drawings | Section 02010 | Prior to beginning of earthmoving activity | | | | |
| | Intermediate Record Survey Drawings | Section 02010 | As soon a praticable after survey is performed and before final payment for item | | | | |
| | Final Record Survey Drawings | Section 02010 | Prior to final acceptance | | | | |
| Technical | | | | | | | |
| | Riprap and Drainage Aggregate | Section 02209 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Crushed Stone for Roadways and Trails | Section 02208 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Geotextile (Woven, Roadway) | Section 02208 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Geotextile (Separator) | Section 02720 | 21 calendar days prior to use-Certification<br>14 calendar days prior to use-Data | | | | |
| | Topsoil Borrow Source Testing | Section 02204 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Topsoil Placement and Seeding Schedule | Section 02204 | Draft with Schedule<br>Final with Topsoil Borrow Testing | | | | |
| | Split Rail Fence | Section 02830 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Temporary Storage Tanks | Section 11001 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |
| | Storage Tank Inspection Reports | Section 11001 | Submit with Project Record Documents | | | | |
| | Water Service Piping and Appurtenances | Section 11002 | Draft 14 calendar days prior to installation<br>Final 5 calendar days after receipt of comments | | | | |

Note:
1. Three (3) copies of each **draft submittal** shall be submitted to the Construction Manager, unless a diiferent number of copies is requested within the Specifications.
2. **Final submittals** shall include three (3) copies and one (1) reproducable copy and shall be submtted to the Construction Manager, unless a diiferent number of copies is requested within the Specifications.

# SECTION 01380

# PROJECT PHOTOGRAPHS

# SECTION 01380

# PROJECT PHOTOGRAPHS

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This Section covers the requirements for photographic documentation of the preconstruction site condition, the progress of site activities, and the post-construction site condition. The actual number and location of views to be taken shall be as directed by the Construction Manager. Photos shall only be taken digitally, film cameras shall not be used.

### 1.02 RELATED SECTIONS

A. Section 01350 — Submittals

B. Section 01700 —Contract Closeout

### 1.03 REFERENCES

Not Used.

### 1.04 SUBMITTALS

A. The Contractor shall submit the index to photographs, three (3) prints conforming to the requirements of this Section to the Construction Manager within ten (10) calendar days after taking the photographs or as approved by the Construction Manager.

B. Upon completion of the project, all electronic media (i.e. disks) shall be submitted to and become the property of the Owner.

### 1.05 STORAGE, ACCESS, AND DOCUMENTATION

A. Storage. The Contractor shall keep on file in his site office one complete set of prints for all photographs made for the project and shall also keep an electronic copy stored on

appropriate digital media. The contractor shall provide photos to the Construction Manager in electronic format each week.

B. Access. Photographs shall be made available for review by representatives of the Owner.

C. Date Stamp. Photographic files shall be automatically date stamped by the camera onto the image.

D. Photographic Log. An index or log to the site photographs shall be prepared which includes:
   1. photograph number;
   2. name of photographer;
   3. orientation of view; and
   4. description of view.

## PART 2 PRODUCTS

### 2.01 PHOTOGRAPHS – DIGITAL

A. Digital photographs shall be clear and concise with a minimum resolution of three (3) mega pixel.

B. Digital photographs shall be stored and provided in a '.jpg" print ready format and shall not be altered from the original image acquired unless otherwise requested by the Construction Manager.

## PART 3 EXECUTION

### 3.01 PHOTOGRAPHY REQUIRED

A. Preconstruction Site Condition.

   1. Prior to any on site activity, the Contractor shall take a series of photographs documenting the condition of the site before construction.

2. The views shall be of sufficient number and detail to clearly document the location and condition of the site features and facilities. Location of views and time of photographing shall be as approved by the Construction Manager.
3. A minimum of forty (40) photographs shall be made of each of the site areas (Landfill 3 and Fill Area Northwest of Reilly Airfield) before construction.

B. Progress of Site Activities.

1. The Contractor shall photographically record each major activity during the site remediation. The major activities include, but are not limited to the following:
   a. site preparation;
   b. construction of temporary stormwater diversion measures;
   c. preliminary earthwork;
   d. demolition of structures;
   e. clearing and grubbing;
   f. earthwork;
   g. post-inclement weather conditions;
   h. construction of surface drainage structures;
   i. final grading of the site;
   j. unanticipated events such as spillage or related events;
   k. decontamination operations and areas;
   l. environmental monitoring activities;
   m. photographs of post excavation waste removal area;
   n. waste handling and disposal; and
   o. site or task-specific employee respiratory and personnel protection.

2. The Contractor shall take a minimum of twenty-four (24) photographs each week at various locations documenting the progress of site activities.

C. Post-construction Site Condition.

1. The Contractor shall take a series of photographs documenting the final site condition once all of the site activities have been completed.

2. The views shall be of sufficient number and detail to clearly document the location and condition of the site features and facilities. Location of views and time of photographing shall be as approved by the Construction Manager.

3. A minimum of forty (40) photographs shall be made of each of the site areas once on-site activities have been completed.

[END OF SECTION]

# SECTION 01400

# QUALITY CONTROL

# SECTION 01400

# QUALITY CONTROL

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This Section covers the Contractor's construction quality control requirements supplementary to those of the Contract and other Sections of the Specifications. Construction Quality Assurance requirements of the CQA Consultant are given in the CQA Plan. **This Specification is to be used only for imported offsite fill materials.**

### 1.02 RELATED SECTIONS

A. Section 01350 — Submittals

B. Section 02200 — Earthwork

C. Section 02720 — Geotextile

### 1.03 REFERENCES

A. Construction Quality Assurance (CQA) Plan

### 1.04 SUBMITTALS

A. Laboratory Test or Inspection Reports. Each report shall be signed and certified by the supervising engineer or scientist of the testing or analytical laboratory.

B. Schedule of Testing Laboratory Services. The Contractor shall submit a schedule giving the dates and duration that the testing laboratory shall perform testing services or furnish special inspections. Thereafter, the Contractor shall give the CQA Consultant and testing laboratory not less than ten working days written notice of any change in the schedule. The initial schedule shall be submitted within 7 days after the Preconstruction Conference.

## 1.05 QUALITY CONTROL TESTING

A. The Contractor shall incorporate the Construction Quality Assurance (CQA) Plan into the requirements of the Contract.

B. Geotechnical Testing Laboratory. An independent geotechnical testing laboratory licensed to conduct and perform testing services in the State of Alabama and the jurisdiction where the work is located shall be employed by the Contractor. Testing shall be performed under the direct supervision and control of a qualified registered Professional Engineer employed by the laboratory.

C. Analytical Laboratory. Analytical services shall be provided for chemical analysis of imported soils used in the site work. The laboratory used shall be approved by the Construction Manager.

D. Requirements of Regulatory Agencies. Tests, inspections, and approvals required by regulatory agencies shall be furnished by the Contractor at his expense.

E. Source Quality Control. To the extent specified herein or in other sections, the Contractor's testing laboratory shall obtain samples of various materials at the source of supply and test the materials for compliance with the Contract Documents. The testing laboratory shall tag, seal, label, or otherwise suitably identify the materials so sampled. Test reports shall be submitted to and approved by the Construction Manager. The applicable tests shall be repeated at the specified intervals, whenever the source of supply is changed, or whenever the characteristics of the materials change or vary in the opinion of the CQA Consultant. Chemical screening tests shall be performed by a qualified, experienced laboratory approved by the Construction Manager.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.01 SAMPLING

A. Field samples for testing will be selected and obtained by the testing laboratory or the Contractor unless otherwise specified. The CQA Consultant has the option to collect any required samples. Samples shall be obtained in the presence of the CQA Consultant, unless otherwise approved by the Construction Manager. Samples obtained for chemical analysis shall be obtained by the Contractor.

B. Samples of imported fill material shall be provided to the Construction Manager 21 days prior to use. Samples will be tested by the construction Manager for VOCs, SVOCs, and Metals. Sampling will be performed in accordance with the Installation-Wide Sampling and Analysis Plan.

### 3.02 CONTRACTOR FURNISHED ASSISTANCE

A. When requested, the Contractor shall furnish access, facilities, and labor assistance at the site as necessary to collect samples required by the CQA Consultant.

[END OF SECTION]

# SECTION 01505

# MOBILIZATION AND DEMOBILIZATION

# SECTION 01505

# MOBILIZATION AND DEMOBILIZATION

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This section includes requirements for mobilization and demobilization of equipment, personnel, materials, and incidentals, and erection or construction of temporary facilities not specified elsewhere and required to perform the work.

B. This section shall also include the furnishing and installation (at time of mobilization) and disconnecting and removal (at time of demobilization) of temporary utilities, temporary controls, and construction facilities by the Contractor.

### 1.02 RELATED SECTIONS

A. Section 01025 – Measurement and Payments

B. Section 01200 – Project Meetings

C. Section 01310 – Progress Schedules

D. Section 01350 – Submittals

E. Section 01380 – Project Photographs

F. Section 01510 – Temporary Utilities

G. Section 01520 – Temporary Facilities

H. Section 01560 – Temporary Controls

I. Section 01720 – Project Record Documents

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 MOBILIZATION

A. Contractor shall mobilize to the site labor, materials, equipment, and incidentals necessary to set up the site and construct facilities to perform work as defined in these documents.

B. Mobilization is considered complete for equipment or a given facility when that equipment or facility has been tested and is ready to go into productive operation.

C. Mobilization includes, but is not necessarily limited to, the following:
   1. storage facilities;
   2. material staging areas;
   3. temporary utility connections;
   4. sanitary facilities;
   5. security provisions and signage;
   6. dust, soil erosion, sediment, and stormwater controls; and
   7. other temporary facilities and utilities required to complete the work.

### 3.02 DEMOBILIZATION

A. Temporary structures, utilities, and equipment shall be disassembled and removed from the site after the equipment and materials have been approved by the Construction Manager for removal.

B. Contractor shall disconnect and remove temporary utilities, including those which have been installed by or assigned to the Contractor to provide temporary service to the site.

C. Contractor shall remove temporary signs and fencing installed by or assigned to the Contractor.

[END OF SECTION]

# SECTION 01510

# TEMPORARY UTILITIES

# SECTION 01510

# TEMPORARY UTILITIES

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. The Contractor shall furnish labor, tools, supervision, transportation, equipment, and incidentals necessary to provide temporary utilities.

B. The work shall include but not be limited to, construction, installation, and removal of the various site utilities required on a temporary basis to perform the site work.

### 1.02 RELATED SECTIONS

A. Section 01505 — Mobilization and Demobilization

### 1.03 GENERAL REQUIREMENTS

A. The Contractor shall consult with each utility company (i.e., power, phone, internet) involved in this project before commencing operations. Work shall be performed in strict conformance with utility company standards. The Contractor shall make necessary arrangements, secure required permits, and pay fees and charges required by public agencies.

### 1.04 SUBMITTALS

A. The Contractor shall provide a plan showing the design, routing, and installation details for temporary utilities. The drawings shall be submitted to the Construction Manager for approval at least fourteen (14) calendar days before work is scheduled to begin.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Materials may be new or used, shall be functional and adequate for the purpose, shall not cause hazards or nuisances, and shall satisfy applicable codes and regulations.

## PART 3 EXECUTION

### 3.01 CONSTRUCTION UTILITIES

A. General.

1. The Contractor shall ensure that onsite facilities (such as field offices, personnel decontamination facilities, etc.) are provided with appropriate utilities such as electricity, telephone service, internet service, potable water, and sanitary service, and the Contractor shall provide any other utilities that are required or necessary. Costs associated with temporary utility installation, connection, service, and removal shall be borne by the Contractor.
2. The following local utility companies and contacts are provided for use by the Contractor.:
   a. Alabama Power – Ken Deal – (256) 231-3701
   b. Bell South – (800)-925-2525
   c. Cable One – (256) 236-7034
   d. Anniston Water Works – Rodney Owens – (256) 236-5680
   As a convenience, the Contractor may choose alternate mechanisms for providing services (i.e., generators for power, satellite dish internet service as opposed to cable or DSL internet service, etc.).

B. Temporary Electricity and Lighting.

1. Construction lighting shall be installed if work is performed at night or under deficient daylight conditions to ensure correct performance and to provide safe working conditions.
2. Lighting shall be maintained on temporary roads and walkways throughout the work area, in the area of the construction gate, the area covering the construction offices, and on parking facilities within the site.

3. The Contractor shall be responsible for complying with the following guidelines for any temporary facilities built:
   a. The Contractor shall be responsible for determining actual power requirements and arranging with the local utility for installation and service of wiring and electrical equipment, as necessary, to perform site work activities.
   b. The Contractor shall install circuit and branch wiring with area distribution boxes located so that power and lighting are available as required at the construction site by the use of construction-type power cords.
   c. Circuits throughout the construction site shall be protected either by a ground fault circuit interrupter (GFCI) or an approved grounding system.
   d. Electrical work shall be conducted in accordance with latest National Electric Code (NEC).

C. Temporary Telephone Service. The Contractor shall be responsible, at a minimum, for insuring that telephone service is provided as described below.
   1. Three dedicated telephone lines shall be provided for the Construction Manager's and CQA Consultant's field offices (one in each office room and one dedicated fax line).
   2. Two dedicated telephone lines shall be provided for the Contractor's field office.
   3. Other instruments shall be provided at the option of the Contractor, as required by regulations and as requested by the Construction Manager.
   4. The Contractor shall pay all costs for installation, maintenance, removal, and service charges for local calls for all lines. Contractor shall pay for and be reimbursed for long distance toll charges incurred by the Construction Manager or by the CQA Consultant.

D. Internet Access. The Contractor shall provide high speed internet access to each office of each trailer. High speed internet access shall be defined as a minimum upload and download speed of 128 Mbps. The contractor may provide access through a wireless network, cable modems, dedicated DSL lines, or satellite.

E. Temporary Water. The Contractor may choose to bring potable water service onto the site by continuous supply (piping). Arrangements shall be made with the utility service company. A backflow preventer or air gap shall be included in the system. The Contractor shall pay all costs for installation, maintenance, removal, if requested, and service charges for water used. In the event that the Contractor assumes that this supply line may not provide enough potable water, he may choose to fulfill water supply needs with water

delivered to the site and stored in temporary storage tanks upon approval by the Construction Manager and at the Contractor's expense.

The Contractor will have access to the hydrant shown on Drawing 2. The Contractor will be responsible to purchase and install a water use meter and any valves, fittings, and pipe that may be required to use the hydrant. The Owner will direct pay to the water authority for the water used. Water from this hydrant may be used for dust control, soil moisture conditioning, and construction and décor purposes.

F. Temporary Sanitary Facilities. The Contractor shall provide either temporary chemical toilets or sewer hook-ups and flush-type commodes, and potable water washing facilities for the use of all persons working at the site. The sanitary facilities shall be provided in compliance with State and local regulations. Paper, soap, and towels shall be provided, and the facilities shall be maintained in a clean and sanitary condition by the Contractor. Sanitary wastes shall be collected and removed from work areas in an appropriate manner.

G. Collection and Disposal of Solid Waste. The Contractor shall collect and dispose of garbage and other municipal solid waste associated with the field offices at an approved solid waste disposal facility, and pay disposal costs. The Contractor shall not dispose of municipal solid waste within the onsite Industrial Landfill. Contractor shall reference specific section 01100 Part 1.10 Paragraph B for waste that is permitted to be disposed of within the Industrial Landfill.

[END OF SECTION]

# SECTION 01520

# TEMPORARY FACILITIES

# SECTION 01520

# TEMPORARY FACILITIES

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. The Contractor shall furnish labor, tools, supervision, transportation, equipment and incidentals necessary for establishing temporary facilities.

B. The work shall include, but not limited to, provision, maintenance, and removal of temporary onsite facilities necessary to perform the work. The Contractor shall provide temporary facilities including but not limited to personnel decontamination facilities, temporary decontamination pad, personnel shelters, and Contractor's storage facility.

### 1.02 RELATED SECTIONS

A. Section 01505 - Mobilization and Demobilization

### 1.03 TEMPORARY DECONTAMINATION PAD

A. The Contractor shall provide a temporary decontamination pad. The temporary pad shall be located as needed to facilitate decontamination of site equipment and any material from the Exclusion Zone requiring offsite disposal/recycling.

B. The pad shall be such that it can be decontaminated and removed from the site at the conclusion of the project.

C. The pad shall be capable of containing wastewater from the decontamination of equipment until the water is transferred to the wastewater holding tanks. The collected water may be used for dust suppression.

## 1.04 SUBMITTALS

A. The Contractor shall submit plans and descriptions of the proposed facilities and proposed locations to the Construction Manager for approval at least 14 calendar days prior to scheduled installation.

## 1.05 PERSONNEL DECONTAMINATION FACILITY

A. The Contractor shall provide a shelter divided into two sections, one area being a dressing room for decontamination purposes, and the other a clean dressing room.

B. The size of the shelter and facilities shall accommodate the orderly decontamination of site personnel. Male and female personnel may alternate use of the facility. Signs on the entrance door of the facility shall be used to indicate whether male or female personnel are using the facility.

C. Benches and lockers shall be provided. Light, heat, air conditioning, and ventilation shall be provided according to local codes.

D. The Contractor shall collect, store, and properly dispose of wash waters and contaminated disposable safety equipment in accordance with the Specifications.

## 1.06 PERSONNEL SHELTERS

A. The Contractor shall provide a facility where the Contractor's personnel can eat and drink.
   1. The personnel shelter shall be located in the Support Zone in a location approved by the Construction Manager.
   2. At the Contractor's option, light, heat, air conditioning, and water may be provided. Utilities must be installed according to local codes.

## 1.07 STORAGE FACILITIES

A. The Contractor shall provide a facility or facilities for storage of equipment and tools.
   1. The storage facility shall be located in the Support Zone area in a location approved by the Construction Manager.
   2. The storage facility may be either a trailer or a pre-fabricated building.

## 1.08 CONSTRUCTED FACILITIES

A. The facilities covered by this Specification are temporary facilities that are brought to the site, set up for use, and then removed at the completion of the work.

# PART 2 PRODUCTS

## 2.01 FACILITIES, TRAILERS, FURNISHINGS

A. The facilities, trailers, and furnishings may be new or used but shall be serviceable and adequate for the required purpose. The facilities, trailers, and furnishings shall meet applicable codes and regulations and shall not create unsafe or unsightly conditions. Service connections shall be made in accordance with all local and national electric codes.

# PART 3 EXECUTION

## 3.01 PREPARATION

A. The Contractor shall grade the sites of the facilities to promote drainage.

## 3.02 INSTALLATION

A. The Contractor shall install the field office, personnel decontamination facilities, personnel shelter, and storage shelter at Construction Manager approved locations. The facilities shall be constructed on structurally suitable foundations. Trailer units shall be jacked off the wheels, supported on a temporary foundation, and grounded. Steps and landings shall be provided at all doors.

B. The Contractor shall provide vehicular access and parking space at the field office. Access roadways, parking areas and walkways in the Support Zone shall be graded with No. 57 stone or equal.

C. The Contractor shall install required furnishings and equipment and provide utility service in accordance with Section 01510.

## 3.03 MAINTENANCE AND SERVICE

A. The Contractor shall:
   1. provide continuous maintenance during the construction period;
   2. provide utilities and pay the cost thereof;
   3. provide janitorial service each week;
   4. repair or replace damaged items as necessary; and
   5. include the offices within overall site security measures.

## 3.04 REMOVAL

A. The Contractor's field office, personnel decontamination facilities, temporary decontamination pad, personnel shelters, and storage facilities shall remain the property of the Contractor.

B. The Contractor's field office, personnel decontamination facility, temporary decontamination pad, personnel shelters, and storage facilities shall be removed from the site within thirty (30) days of receipt of notice to remove, or as otherwise required by the Construction Manager.

C. The Contractor shall decontaminate the temporary decontamination pad in accordance with the manufacturer's recommendations and the requirements for equipment decontamination given in the Health and Safety Plan prior to removing it from the site.

[END OF SECTION]

# SECTION 01560

# TEMPORARY CONTROLS (EROSION AND SEDIMENTATION)

# SECTION 01560

# TEMPORARY CONTROLS (EROSION AND SEDIMENTATION)

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. The work specified in this Section consists of the labor, equipment, tools, materials, and services needed to establish erosion control measures during and following construction as described herein or shown on the Drawings.

B. The work shall include, but not be limited to, the following:

1. Installation of sedimentation and erosion control barriers.
2. Inspection of erosion control measures weekly, after each rainfall, and at least daily during prolonged rainfall.
3. Repairing immediately failed sedimentation and erosion control barrier.
4. Removing and disposing of sediment deposits in a manner that does not result in additional erosion or pollution.
5. Removal of straw bales, silt fences, and other erosion control measures, after completion of construction and after permanent stabilization is complete.

### 1.02 RELATED SECTIONS

A. Section 01100 – Environmental Protection

B. Section 01720 – Project Record Documents

C. Section 02204 – Topsoil and Vegetation

### 1.03 REFERENCES

A. Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, June 2003 (Revised 1-06).

B. Chapter 335-6-12 - National Pollutant Discharge Elimination System (NPDES) Construction, Noncoal/Nonmetallic Mining and Dry Processing less than Five Acres,

Other Land Disturbance Activities, and Areas Associated with these Activities, of the Alabama Department of Environmental Management (ADEM) Administrative Code.

C. Land Disturbance Permit

## 1.04 PERFORMANCE REQUIREMENTS

A. Project work shall conform to erosion and sedimentation control measures of the State of Alabama and outlined in the Land Disturbance Permit and Chapter 335-6-12 of the ADEM Administrative Code.

B. Temporary erosion and sediment control measures shall be installed as the first step in construction, shall be continuously maintained, and shall not be removed until permanent cover is completely established and stabilized, as approved by the Construction Manager.

C. The Contractor shall be required to assume the Land Disturbance Permit upon contract award.

# PART 2 PRODUCTS

## 2.01 CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN

A. The Contractor shall comply with the provisions of the Alabama NPDES guidelines (Chapter 335-6-12 of the ADEM Administrative Code) and the Construction Best Management Practices Plan (CBMPP).

## 2.02 MATERIALS

A. Materials under this section shall include but not be limited to the following items. The Contractor shall comply with the CBMPP.

B. Straw Bales: Shall be securely tied and shall measure, at a minimum, 14 inches by 18 inches by 36 inches long (14" × 18" × 36") or greater.

C. Stakes and Fasteners:

1. Shall be two #4 rebar or two 2-inch by 2-inch hardwood stakes at least 36 inches (36") long for each straw bale; and

2. Shall be a 3-inch diameter or 2-inch by 4-inch by 48-inch softwood post or Standard T or U section steel posts weighing not less than 1.33 pounds per linear foot for silt fences.

D. Sediment Barriers - Sediment barriers shall be stone, silt fences or other approved materials that will prevent migration of silts and sediment to receiving waters. Silt fence shall meet the requirements of the most recent version of the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management for the types specified in the CBMPP.

## PART 3 EXECUTION

### 3.01 GENERAL REQUIREMENTS

A. It is the Contractor's responsibility to implement and maintain erosion and sedimentation control measures which effectively prevent erosion and sedimentation.

B. Earthmoving activities shall be conducted in such a manner as to prevent erosion and sedimentation.

C. Erosion and sedimentation control measures shall be inspected by the Contractor immediately after each rainfall and at least daily during prolonged rainfall.

1. Repair and/or maintenance of sedimentation and erosion control measures will be made as soon as needed.
2. The Contractor shall be held responsible for the implementation and maintenance of erosion and sedimentation control measures for this project.

D. Restabilization shall be implemented within the time frame described within the CBMPP.

E. Silt fences shall be installed at the toe of critical cut and fill slopes.

F. Erosion and sedimentation control measures shall be installed prior to construction activities.

G. Sediment removal from temporary control structures and from permanent drainage facilities shall be the responsibility of the Contractor.

H. Sediment shall be disposed of in a manner which is consistent with overall intent of the project and which does not result in additional erosion.

I. It is the Contractor's responsibility to provide resources necessary to prevent erosion of soil from the construction site, and to provide silt fences, straw bales or other control measures as the need arises during construction at no additional cost to the Owner.

J. The Contractor shall remove sedimentation and erosion control barriers after completion of construction and permanent stabilization for erosion control has been established, as approved by the Construction Manager.

## 3.02 SPECIAL CONDITIONS

A. Prohibited Construction Practices - Prohibited construction practices include, but shall not be limited to, the following, except as described in 3.02 (B):

1. Dumping of spoil material into stream corridors, wetlands, surface waters or at unspecified locations.
2. Operation of equipment in stream corridors, wetlands or surface waters.
3. Pumping of silt-laden water from trenches or other excavations into surface waters or stream corridors.
4. Disposal of trees, brush and other debris in stream corridors, surface water, or at unspecified locations.
5. Open burning of construction project debris.

B. 0.004 acres of isolated non-jurisdictional wetland (preliminary surveyed boundary) are proposed to be impacted during Landfill 3 final cover system construction. Impacts to the wetland shall be kept to a minimum during Landfill 3 final cover system construction. The Contractor may elect to adjust the proposed final grades in the vicinity of the wetland in order to minimize the disturbances. Changes to the proposed final grades shall be approved by the construction manager.

## 3.03 ADJUSTMENT OF PRACTICES

A. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the regulatory agencies having jurisdiction over the project, the Contractor shall immediately adjust his program and/or institute additional measures so as to eliminate erosion and sediment-runoff at no additional cost to the Owner.

B. If the Contractor fails or refuses to comply promptly, the Construction Manager may issue an order stopping all or part of the work until satisfactory corrective action has

been taken. No time lost due to stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor.

[END OF SECTION]

# SECTION 01580

# PROJECT SIGNS

# SECTION 01580

# PROJECT SIGNS

## PART 1 — GENERAL

### 1.01 DESCRIPTION

A. This Section covers furnishing, installing, maintaining, and removing multiple warning signs. Warning signs shall be posted at each site entrance and as required by Federal, State, and local agencies. Additional signs needed to fulfill specification requirements shall be furnished by the Contractor and installed.

### 1.02 SUBMITTALS

A. The Contractor shall submit draft language and material samples for each sign that is to be used for this project (i.e., size, font, color, language, proposed location) to the Construction Manager 14 calendar days prior to fabrication.

## PART 2 — PRODUCTS

### 2.01 WARNING SIGNS

A. Warning signs shall be made of metal, durable, and adequate for the intended purpose;

B. The panel shall have dimensions no less than 12 inches by 12 inches.

C. Lettering shall be a minimum of 1-1/2 inches high;

D. Signs shall be worded as directed by the Construction Manager; and

E. The signs shall be approved by the Construction Manager or designee prior to posting.

## 2.02 HARDWARE

A. Hardware used on the warning signs shall be either brass, aluminum, or galvanized steel, and of sizes and types which when assembled and erected, will enable the sign assembly to resist a wind velocity of 50 mph.

## 2.03 PAINT

A. The warning signs may be painted or printed.

# PART 3 — EXECUTION

## 3.01 INSTALLATION OF WARNING SIGNS

A. New signs will be furnished and installed as needed to meet spacing requirements of new fencing if the number of existing usable signs is insufficient at no additional cost to Owner. The Contractor shall adequately secure warning signs to the security fence and each entrance.

## 3.02 MAINTENANCE

A. The Contractor shall maintain all signs neat and clean. The Contractor shall either repair or remove and replace damaged signs at no additional cost to Owner. The Contractor shall replace warning signs that are lost, stolen, or removed. Maintenance shall be conducted to the satisfaction of the Construction Manager.

[END OF SECTION]

# SECTION 01590

# FIELD OFFICES

# SECTION 01590

# FIELD OFFICES

## PART 1 — GENERAL

### 1.01 DESCRIPTION

A. This Section covers the requirements for maintaining one office and temporary facilities for exclusive use by the Construction Manager and CQA Consultant. The field office trailer will be supplied by the Contractor and will be installed on site before the beginning of the Work. The Contractor shall assume responsibility for maintenance of this facility and provide for final removal as required.

## PART 2 — PRODUCTS

### 2.01 FIELD OFFICES

A. The field office shall be furnished, delivered and installed by the Contractor. The Contractor shall maintain the onsite field office for exclusive use of the Construction Manager and CQA Consultant.

1. The field office shall be maintained weathertight, with structurally sound foundation and superstructure.
2. Adequate electrical service will be supplied by the Contractor to ventilate, heat, air condition, light the field office, and to operate computers, copier, and fax machines..
3. Open parking space for a minimum of three full-size passenger automobiles and a temporary access road shall be installed and maintained by the Contractor. Parking, road areas, and walkways shall be graded to promote drainage and the Contractor shall maintain a crushed stone surface.
4. Water, electricity, and telephone service shall be provided by the Contractor as specified in Section 01510 of the Specifications.
5. An adequate supply of cold drinking water shall be furnished and maintained by the Contractor for the duration of the project.
6. The Contractor shall supply temporary sanitary facilities for the exclusive use of the Construction Manager and the CQA Consultant.

7. The Contractor shall pay all utility removal charges, and all bills for the duration of the contract and shall pay installation and connection charges for any new connections.
8. The Contractor shall maintain furnishings and equipment.
9. The Contractor shall maintain working locks on all entrance doors. The Contractor's Site Manager will be provided with a key to the locks for use only in emergency situations.
10. Minimal field office size shall be 10 ft. by 40 ft. The trailer shall have two offices (one on each end of the trailer) and a central meeting room.
11. The field office shall each be equipped with 2 desks, 8 chairs, 2 4-drawer filing cabinets, 1 plan table with plan storage drawers or shelves, and an 8 ft. long table for the central meeting room.
12. The buildings shall be maintained so that they meet applicable codes and regulations and do not create unsafe or unsightly conditions. Service connections shall be made in compliance with all local or national electrical codes.
13. Contractor shall provide telephones for each phone line, a plain paper fax machine (10 page per minute minimum), a black and white copy machine (10 page per minute minimum), a small refrigerator, and fire extinguishers per code regulations.

## PART 3 — EXECUTION

### 3.01 PREPARATION

A. The Contractor shall maintain grading around the field offices to provide drainage of rainfall.

### 3.02 INSTALLATION

A. The Contractor shall install and maintain the field office on a structurally suitable foundation. Trailer house units shall be jacked off the wheels and supported on temporary foundations. The Contractor shall furnish, install, and maintain OSHA-approved steps and landings at trailer doors and shall insure that the trailers are adequately grounded and tied down to prevent overturning by high winds.

B. Vehicular access shall be maintained to the field offices.

C. The Contractor shall provide utility service.

## 3.03 MAINTENANCE AND SERVICE

A. The Contractor shall provide continuous maintenance during the construction period.

B. The Contractor shall provide utilities and pay the cost thereof for the duration of the project.

C. The Contractor shall repair or replace damaged items as necessary.

[END OF SECTION]

# SECTION 01700

# CONTRACT CLOSE-OUT

# SECTION 01700

# CONTRACT CLOSE-OUT

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This Section includes the requirements and procedures for documenting that the work is complete in accordance with the Specifications, Construction Drawings, and Contract Documents.

### 1.02 RELATED SECTIONS

A. Section 01025 – Measurement and Payment

B. Section 01720 – Project Record Documents

C. Section 01505 – Mobilization/Demobilization

D. Section 01350 – Submittals

E. Section 02010 – Survey

F. Section 02200 – Earthwork

### 1.03 CLOSE-OUT PROCEDURES

A. The Contractor shall submit written certification that the work has been inspected and is complete in accordance with the Drawings and Specifications and the Contract Documents and that the site is ready for final inspection by the Construction Manager. The Construction Manager shall coordinate with the required attendees for a punchlist walk date.

B. A punchlist walk shall be conducted by the Construction Manager, Contractor (Project Manager and Site Manager), CQA Consultant, and Engineer. The Construction Manager or his designee shall develop a list of punchlist items. The punchlist items shall be completed by the Contractor prior to final project acceptance. The Contractor shall complete the punchlist items within 14 calendar

days of the punchlist walk. The Construction Manager shall present the punchlist to the Contractor within one (1) business day of the punchlist walk.

C. The Contractor shall notify the Construction Manager two (2) calendar days prior to the requested Final Acceptance walk date and submit written certification that the punchlist items have been completed. The Construction Manager shall coordinate the required attendees for the Final Acceptance walk date.

D. The Construction Manager shall determine when the punchlist items are complete. The Construction Manager shall issue the Notice of Completion within three (3) days of final acceptance.

E. At the completion of field operations, the Contractor shall deliver the Record Documents to the Construction Manager within 14 calendar days of final project acceptance. Delivery shall be accompanied with a transmittal letter, in duplicate, indicating date, project title and Owner project number, Contractor's name and address, and the title of each Project Record Document. Each letter shall bear the signature of an authorized representative of the Contractor.

F. The Contractor shall submit final Application for Payment within 21 calendar days of project acceptance identifying the total adjusted contract sum, previous payments, and sum remaining due. The final application for payment including retainage, will not be processed until the final Project Record Documents have been received and approved by the Construction Manager.

G The Contractor shall submit a Closeout Safety Report within 14 calendar days of final project acceptance to the Construction Manager upon completion of the work. This report shall summarize the weekly safety reports, air monitoring data, and provide an overview of the Contractor's performance with regard to the site specific Health and Safety Plan and its task addenda. This report shall also include certification of equipment decontamination. The final application for payment including retainage will not be processed by the Construction Manager until the Closeout Safety Report is received from the Contractor and accepted by the Construction Manager.

## 1.04 FINAL CLEANING

A. The Contractor shall perform the final cleanup prior to final site inspection by the Construction Manager. Final cleanup shall consist of removal of temporary construction items, removal of waste and surplus materials, rubbish, soil, aggregate,

and vegetation stockpiles and the Contractor's construction facilities from the site. Removal of temporary construction items shall include temporary erosion control measures, as approved by the Construction Manager. Final cleanup shall also include final grading and seeding of the areas outside the cap subgrade as shown on the Construction Drawings, and re-establishment of any other required vegetation to restore the site to pre-construction conditions or better. The final application for payment, including retainage, will not be processed by the Construction Manager until provisions of final cleaning have been met by the Contractor and approved by the Construction Manager.

## 1.05 WARRANTIES

A. Prior to the final Application for Payment being processed by the Construction Manager, the Contractor shall submit applicable warranty documents from subcontractors, suppliers, and manufacturers. The Contractor shall warranty materials, equipment and workmanship for a period of one (1) year after final project acceptance of the work by the Construction Manager.

## 1.06 APPLICATION FOR FINAL PAYMENT

A. The Contractor shall submit required close-out items to the Construction Manager in advance of the Application for Final Payment. In addition, the Contractor shall submit certifications and supporting documentation as may be required to demonstrate that all outstanding subcontractor payments have been made, any claims have been settled, and that the work is clear of any and all liens.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

[END OF SECTION]

# SECTION 01720

# PROJECT RECORD DOCUMENTS

# SECTION 01720

# PROJECT RECORD DOCUMENTS

## PART 1 GENERAL

### 1.01 DESCRIPTION OF WORK

A. This Section covers the requirements for maintenance and delivery of Project Record Documents. The Contractor shall complete and maintain the following records onsite:
   1. working and as-built drawings;
   2. specifications;
   3. land disturbance permit
   4. contract;
   5. subcontracts;
   6. change orders;
   7. field orders;
   8. contract amendments;
   9. daily work activity summary reports;
   10. daily logs; and
   11. documentation related to performance of the work.

B. The Project Record Documents shall be stored in fire-resistant, lockable cabinets in the Contractor's field office apart from other documents.

C. The Contractor shall allow the Construction Manager to inspect the Project Record Documents upon request.

### 1.02 RELATED SECTIONS

A. Section 01094 – Definitions

B. Section 01200 – Project Meetings

C. Section 0310 – Progress Schedules

D. Section 01350 – Submittals

E. Section 01380 – Project Photographs

F. Section 01505 – Mobilization and Demobilization

G. Section 01700 – Contract Close-out

## 1.03 SUBMITTALS

A. At the completion of field operations, the Contractor shall deliver record documents to the Construction Manager. Delivery shall be accompanied with a transmittal letter, in duplicate, indicating date, project title and owner project number, Contractor's name and address, and the title of each Project Record Document. Each letter shall bear the signature of an authorized representative of the Contractor.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

## 3.01 DAILY WORK ACTIVITY SUMMARY REPORTS

A. Daily work activity summary reports shall include the following:
   1. field test records;
   2. photographs;
   3. reports on any emergency response actions;
   4. manifest documents;
   5. records of site work, including cut and fill volumes (daily production) and wastewater management reports (daily results);
   6. chain-of-custody documents;
   7. truck-load tickets and shipping documents (manifests);
   8. laboratory reports and field test data;
   9. air emission reports;

10. accident and safety reports;
11. reports on spill incidents;
12. meteorological records;
13. daily inspection records; and
14. site survey data.

## 3.02 MAINTENANCE OF DOCUMENTS

A. The Contractor shall keep one record copy of Specifications, Addenda, Modifications, Submittals, and Drawings at the Site in good order and annotated to show changes made during the construction process. The Contractor shall legibly mark each section of the Specifications and each sheet of the Construction Drawings to record changes made by Field Order or by Change Order.

## 3.03 RECORD DRAWINGS

A. The Contractor shall be responsible for providing Record Drawings of the existing conditions, completed subgrade, and final grades for Construction in accordance with Specification Section 02010.
   1. Survey for Record Drawings shall be performed under the responsible charge of a professional land surveyor licensed in the State of Alabama.
   2. Record Drawings shall be developed and sealed by a professional land surveyor licensed in the State of Alabama.

[END OF SECTION]

# SECTION 01740

# WARRANTY OF CONSTRUCTION

# SECTION 01740

# WARRANTY OF CONSTRUCTION

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. In addition to any other warranties set forth elsewhere, the Contractor shall warrant that the work performed conforms to the requirements of these Specifications and is free of any defect of equipment, material, design furnished, or workmanship performed by the Contractor and any subcontractors or suppliers at any tier. Such warranty shall continue for a period of one (1) year from the date of final acceptance of the work. Under this warranty the Contractor shall remedy at no cost to the Owner any such failure to conform to Contract requirements or any such defect of equipment, material, workmanship, or design furnished. The Contractor shall also restore any work damaged in fulfilling the terms of this clause. The Contractor's warranty with respect to work repaired or replaced hereunder shall be in force for one year from the date of such repair or replacement.

In addition, the Contractor is responsible for repair of the following items for a period of one year following acceptance of construction by the Construction Manager. The date of construction acceptance shall be determined in the Construction Manager's sole judgement:

1. erosion damage to the cap or access roads;
2. inadequate growth of required grass;
3. inadequate drainage of water from surfaces; and
4. blockage of drainage structures.

### 1.02 NOTIFICATION

A. The Construction Manager shall notify the Contractor in writing within a reasonable time after discovery of any failure, defect, or damage. Should the Contractor fail to remedy any failure, defect, or damage within a reasonable time after receipt of notification, the Owner shall have the right to replace, repair, or otherwise remedy such failure, defect, or damage at the Contractor's expense.

## 1.03 DOCUMENTATION

A. If directed by the Owner, the Construction Manager shall require any such warranties to be executed in writing to the Contractor.

## PART 2 PRODUCTS

Not used

## PART 3 EXECUTION

Not used

[END OF SECTION]

# SECTION 02010

# SURVEY

# SECTION 02010

# SURVEY

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. This Section covers procedures that the Contractor shall use in conducting record and construction surveys. Surveys shall be performed by the Contractor at the beginning and completion of the work and at intermediate points as necessary to determine pay quantities and record as-built-information for final record drawings. Contractor shall adhere to survey requirements listed within the CQA Plan.

### 1.02 SUBMITTALS

A. Submittals shall be made in accordance with requirements set forth in Section 01350 of the Specifications unless stated otherwise. Submittals of drawings shall include two blueline sets and one Mylar set. Submittals under this Section, include, but are not limited to:

1. surveyor's notes;
2. calibration documentation for surveying equipment;
3. initial record survey drawings, to be submitted to the Construction Manager for approval prior to the beginning of any earthmoving activity at the site;
4. intermediate record survey drawings, to be submitted to the Construction Manager as soon as is practicable after the survey is performed and before final payment is made to the Contractor for work documented by the Drawings (copies of all calculations for final pay quantities shall be included.); and
5. final record drawings, to be submitted to the Construction Manager prior to final acceptance.

## PART 2 - PRODUCTS

### 2.01 SURVEY CONTROL

A. The Contractor shall survey and establish additional survey control required for performance of the Work, conduct measurements, and check dimensions necessary for

proper execution of the Work. The Contractor shall be responsible to re-establish existing survey control lost during the course of work. Project survey control shall be tied into the existing survey control shown on the Drawings.

1. Survey control shall be set and measurements obtained using standard accepted surveying methods and equipment.
2. Surveyors utilized by the Contractor shall be professional engineers or land surveyors registered in the State of Alabama. Surveyor's field notes shall be included with project record documents for submission to the Construction Manager or CQA Consultant. The registered surveyor's signatures shall be included on all field notes and survey record documents.
3. Surveying instruments shall be calibrated prior to the start of the work. Documentation attesting to instrument calibration shall be submitted to the CQA Consultant prior to performing survey work.

## 2.02 RECORD SURVEY DRAWINGS

A. Survey record drawings shall be tied to the existing survey control shown on the Drawings, shall show grid lines corresponding to those shown on the existing drawings at 100 foot intervals, and shall generally conform to industry standards as to quality and information shown. Other requirements are given below. Drawings shall be labeled with the name of the project, the name of the surveyor, the date of the survey, and the survey location and purpose.

1. Initial Record Survey Drawings. The Initial Survey Drawing shall update the topographic conditions on Drawing 3. Initial survey drawings shall show the area of the site up to and including the limit of work line shown on the project drawings for each work area and proposed onsite borrow areas. Drawing contour interval shall be one foot and scale shall be 1"=50'. This drawing shall be compatible with existing Contract Drawings and used to verify initial site conditions for the purpose of calculating final cut and fill volumes.
2. Intermediate Record Survey Drawings. Intermediate drawings made to document work performed shall clearly show the area requiring documentation and shall show the horizontal and vertical limits of the area and sufficient information to clearly locate the area and perform calculations to record final pay quantities. Spot elevations shall be accurate to the nearest hundredth of a foot. Intermediate Record Drawings include, but are not limited to, the top of structural fill and top of completed Low Permeability Soil layer.

3. Final Record Survey Drawings. Final record survey drawings shall document the final condition of the site. The drawings shall be at the same scale and of the same area as the initial survey drawing, and shall be compatible with the initial drawing in the level of detail shown and in the manner of presentation, so that the drawings can be easily compared. Significant features of each project site, including but not limited to the final cap grades, the drainage structures, the fenceline, drainage swales, the sedimentation pond final grades, final restoration grades of borrow areas, groundwater wells remaining onsite, and utilities remaining onsite shall be shown on the final record survey drawings.

## 2.03 PROFESSIONAL STAMP

A. Record survey drawings shall bear the stamp and signature of the professional surveyor registered in the State of Alabama responsible for the survey work.

# PART 3 - EXECUTION

## 3.01 CONTRACTOR MEASUREMENTS

A. The Contractor shall conduct survey measurements and check dimensions necessary for the proper execution of the work called for by the Drawings and Specifications.

B. Where the dimensions and locations of existing structures or utilities are of critical importance to the installation or connection of new work, the Contractor shall verify such dimensions and locations in the field before conducting the work.

C. The Contractor shall establish the horizontal and vertical control benchmarks from the existing survey control shown on the Drawings.

## 3.02 INITIAL RECORD SURVEY

A. Prior to performing work at the site, the Contractor shall conduct a survey of the site within the project boundaries, up to and including the limit of work and including any area outside of the limit of work where work is to be performed (i.e., construction entrance and access road, walking paths, split rail fence, construction laydown area, and onsite borrow areas). The survey shall document the condition of the site at the initiation of the Project.

## 3.03 INTERMEDIATE RECORD SURVEYS

A. The Contractor shall perform surveys as needed throughout the progress of the work to determine pay quantities and document work that has been performed. Surveys to be made shall include, but shall not be limited to

- top of structural fill (50 ft. grid, include perimeter boundary; include break lines, crest, and toe);
- top of low permeability soil (50 ft. grid, identical to top of structural fill, "stacked" points, intended to show required thickness of low permeability soil; include break lines, crest, and toe);
- bottom of waste excavation (include break lines, crest, and toe);
- bottom of sedimentation pond (include break lines, crest, and toe);
- Down drain piping, sediment pond structures and outlet piping; and
- Road and path grade and alignment.

## 3.04 FINAL RECORD SURVEY

A. At the conclusion of the work, the Contractor shall perform a survey of the site within the project boundaries, up to and including the work limit and including any area outside of the work limit or fence where work was performed. The survey shall document the condition of the site at the conclusion of the Project. The survey shall accurately locate features that are to be shown on the final record survey drawing. Included in this final record survey will be preparation of as-built sections defining cut and fill limits and as-built records of the actual cap and drainage structures, as well as final restoration grades of the borrow areas. The Surveyor shall also produce one final drawing for each of the landfill cover system areas. These drawings shall show the as constructed top of topsoil grades. Drainage swale and pipe invert slopes and thickness certification points shall be shown. The Survey shall provide a table on the drawings listing northing, easting, bottom and top of low permeable soil elevations, and thickness of low permeable soil layer at the certification location.

## 3.05 TOLERANCES

A. Acceptable tolerances upon completion of each layer, within the project areas, shall be 0 to - 0.1 ft (30 mm) on final subgrade and structural fill elevations, and 0 to + 0.1 ft on low permeability soil and topsoil layers, provided minimum permit conditions and state regulations are adhered to (i.e., thickness, grades, etc.). Surveying tolerances may need to be more stringent in the certain areas (i.e., trench inverts and pipe alignments) to measure accurate construction.

## 3.06 DOCUMENTATION

A. Original field survey notes shall be retained by the Senior Surveyor. The Surveyor shall produce record plans for the Construction Manager as the job progresses. The results from the field surveys will be documented on a set of record plans. At a minimum these plans shall show the final elevations of the surfaces listed in Section III Subsection 5.0 of the Construction Quality Assurance Plan at a scale of 1 in. equal 100 ft with contour intervals no greater than 2 ft.

[END OF SECTION]

# SECTION 02110

# SITE PREPARATION

# SECTION 02110

# SITE PREPARATION

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section covers the requirements for site preparation that shall be implemented prior to initiating major excavation of soils or other construction at the project site. The principal work items shall include, but not be limited to:
   1. initial site survey and topographical drawing;
   2. installation of work zone demarcation barriers/fencing and staking;
   3. installation of site access road;
   4. installation of fuel storage tanks;
   5. placement of stone for construction entrances and parking areas as required;
   6. installation of construction trailers and temporary decontamination pad;
   7. installation of any new site utility connections, telephone, electrical, and site water line as required;
   8. installation of decontamination water holding tanks;
   9. installation of silt control fences and erosion and sediment controls; and
   10. clearing grubbing and stripping of site areas as necessary, including grinding of stumps, trees and brush and storing of shredded materials for inclusion into the walking paths..

### 1.02 SUBMITTALS

A. In general, the Contractor shall submit information on materials and construction for the site preparation work as required in the Specifications for each element of the work with the Materials and Waste Handling Work Plan. These submittals shall include, but not be limited to, the following:
   1. a description and location plan of the proposed temporary facilities;
   2. a plan showing the exact location of temporary fencing;
   3. information on temporary utilities; and
   4. information on temporary decontamination pad, the decontamination water holding tanks, and fuel storage tanks.

## PART 2 PRODUCTS

### 2.01 EQUIPMENT

A. The equipment and products that are installed, constructed, or assembled as part of the site preparation work may be new or used, as permitted by the Specifications or approved by the Construction Manager, but shall be serviceable and adequate for the intended purpose.

### 2.02 FACILITIES

A. The facilities constructed as part of the site preparation work shall be serviceable and adequate for the intended purpose.

### 2.03 SILT FENCE

A. Silt fence filter fabric shall meet the requirements of ALDOT.

### 2.04 TEMPORARY FENCING

1. Exclusion Zone Fencing. Exclusion Zone fencing shall consist of orange plastic safety fencing complete with metal 6 foot T-posts. The fencing shall be high density polyethylene fencing having a diamond extended mesh pattern. The fencing shall have a minimum height of 4 feet and have posts spaced such that the fence remains vertical with no sag between the posts.
2. Contamination Reduction Zone Fencing. Contamination Reduction Zone fencing shall consist of yellow plastic safety fencing complete with metal 6-foot T-posts. The fencing shall be high-density polyethylene fencing having a diamond extended mesh pattern. The fencing shall have a minimum height of 4 feet and have posts spaced such that the fence remains vertical with no sag between the posts.

## PART 3 EXECUTION

### 3.01 GENERAL

A. Site preparation work shall generally be performed in the order presented in Part 1.01 of this Section and specifically as determined in schedules submitted pursuant to

Section 01310 of the Specifications. Activities may be accomplished concurrently and deviations from the indicated sequencing may be implemented as appropriate with the prior approval of the Construction Manager.

## 3.02 INITIAL SITE SURVEY

A. An initial survey of the site shall be made before other work begins, but after clearing, grubbing, and grinding activities, to document site conditions. Survey shall be made according to requirements set forth in Section 02010 of the Specifications.

## 3.03 CONSTRUCTION ENTRANCE

A. The Contractor shall place gravel as required to maintain suitable entrances to the site and parking areas in accordance with Sections 02208 and 01520 of the Specifications.

## 3.04 INSTALLATION OF CONTRACTOR'S CONSTRUCTION TRAILERS

A. The Contractor shall locate the construction trailers on the site within the Support Zone final locations as approved by the Construction Manager.

## 3.05 INSTALLATION OF SITE UTILITY CONNECTIONS AND SITE LIGHTING

A. The Contractor shall arrange for the installation of any new utility (water, electric, gas, internet, and phone) connections required to perform the Work. Site utility connections shall be made in compliance with the Specifications and the appropriate utility company's recommendations. General site lighting will be installed as determined by the Contractor and approved by the Construction Manager for adequate site safety and security.

## 3.06 EQUIPMENT DECONTAMINATION PAD

A. The Contractor shall furnish and install a temporary decontamination pad in a location as approved by the Construction Manager and in accordance with Sections 11004 and 01030 of the Specifications.

## 3.07 SEDIMENT AND EROSION CONTROLS

A. Contractor shall install, at a minimum, a silt-control fabric fence along the portions of the property as shown on the Drawings. The Contractor shall install additional silt fence around specific work areas as needed to control sediment during each phase of construction. The silt control fence shall be properly maintained and remain functional during the entire project duration. Silt fence shall be removed by the Contractor when directed by the Construction Manager. The Contractor shall additionally follow applicable federal and state regulations for sedimentation and erosion control.

## 3.08 CONSTRUCTION OF GRAVEL BASE AND ROADWAYS

A. The Contractor shall maintain existing gravel roadways and compact and construct additional gravel base roadways and parking areas as necessary to complete the work. Roadways shall be constructed in accordance with the requirements Section 02208 of the Specifications and as indicated on Drawings or approved site development plans prior to moving heavy equipment and soils.

## 3.09 DECONTAMINATION WATER HOLDING TANKS

A. The Contractor shall install decontamination water holding tanks. The tanks shall comply with the requirements of Sections 11001 and 11004 of the Specifications.

## 3.10 FUEL STORAGE TANK

A. The Contractor shall install fuel storage tanks as needed to complete the Work and in accordance with approved site development plans. Fuel tanks shall be dual contained.

## 3.11 WORK ZONE DEMARCATION BARRIERS

A. The Contractor shall install demarcation barriers to define the boundaries of the Exclusion Zones and Contamination Reduction Zone (CRZ) as approved by the Construction Manager. Safety fencing shall be used for demarcation barriers. The fencing shall be constructed of polyethylene, resist corrosion, and be highly visible. Safety fencing that serves to mark the Exclusion Zone shall be orange. Safety fencing that serves to mark the

CRZ shall be yellow. The fencing shall have a minimum height of 4 feet and be equipped with gates where necessary.

## 3.12 INSTALLATION OF WATER SERVICE LINE TO THE SITE

A. A storage tank may need to be installed as part of the installation to fully or partially augment site water supply needs.

[END OF SECTION]

# SECTION 02115

# CLEARING AND GRUBBING

# SECTION 02115

# CLEARING AND GRUBBING

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This section addresses the requirements for removal and disposal of trees, shrubs, brush, and debris, and vegetation and the installation of silt fence within the construction areas.

B. Vegetative cover and debris shall be removed to grade as described within this Section. The Contractor shall provide and install the silt fence as shown on the Drawings.

### 1.02 RELATED SECTIONS

A. Section 01505 – Mobilization / Demobilization

B. Section 01560 – Temporary Controls

C. Section 02200 – Earthwork

D. Section 02110 – Site Preparation

### 1.03 DEFINITIONS

A. Clearing: Clearing shall consist of the felling, trimming, and cutting of trees into sections and the chipping of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared. Required areas for clearing by the Contractor are shown in Figures 02115-3, 02115-4, and 02115-5 of this Specification.

B. Grubbing: Grubbing shall consist of the removal and disposal of stumps, roots larger than 2 inches in diameter, and matted roots from the designated grubbing areas. Required areas for grubbing are shown on Figures 02115-4 and 02115-5 of this Specification for the proposed cleared areas.

C. Silt Fence: A temporary sediment barrier consisting of a woven filter geotextile stretched across and attached to supporting posts and entrenched.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.01 GRINDING

A. Prior to the Contractor's initial mobilization, the Owner will contract with a separate timbering service to remove the majority of trees located within the closure system areas. The trees will be cut and removed from the site. The remaining stumps will be no taller than six (6) inches in total height. The Contractor will be required to grind stumps in areas indicated on Figures 02115-1 and 02115-2 attached with this Specification. The stumps located within this area shall be ground to a height equal to the surrounding ground surface. Root mass and rooted vegetation shall remain in place. "Loose" organics and debris (i.e., tree limbs, leaves, mulch, tree grindings, etc.) shall be removed prior to soil placement. Ground material shall be used as mulch around trees within landscaping.

### 3.02 CLEARING

A. Erosion and sedimentation controls shall be constructed, operational, and approved by the Construction Manager prior to clearing and grubbing activities.

B. The sedimentation pond area, Borrow Area Site 2, and LF3 perimeter tree stand as shown in Figure 2 attached with this Specification shall be cleared of vegetation and other deleterious material as follows:
   1. Remove surfacial vegetation by blading with a dozer or equivalent method. Initial removal of vegetation shall be performed to a shallow depth, and soil removal shall be minimized.
   2. Vegetative and deleterious material removed shall only be stockpiled in the location designated by the Construction Manager. Contractor shall chip cleared material for reuse in the landscaping plan throughout the project site.

### 3.03 GRUBBING

A. Grubbing shall be performed to remove roots, vegetation, and deleterious material within the sedimentation pond area.

B. Depressions made by grubbing in areas not requiring cut shall be filled with suitable fill material, and graded as shown on the Construction Drawings.

## 3.04 DISPOSAL OF MATERIALS

A. Logs, stumps, roots, brush, rotten wood, grass, weeds, and other refuse from the clearing and grubbing operations may be stockpiled on-site until it can be chipped and used for tree mulch.

B. The Contractor shall be responsible for removal and disposal of the debris and surplus chipped, cleared, and grubbed material into the Industrial Landfill.

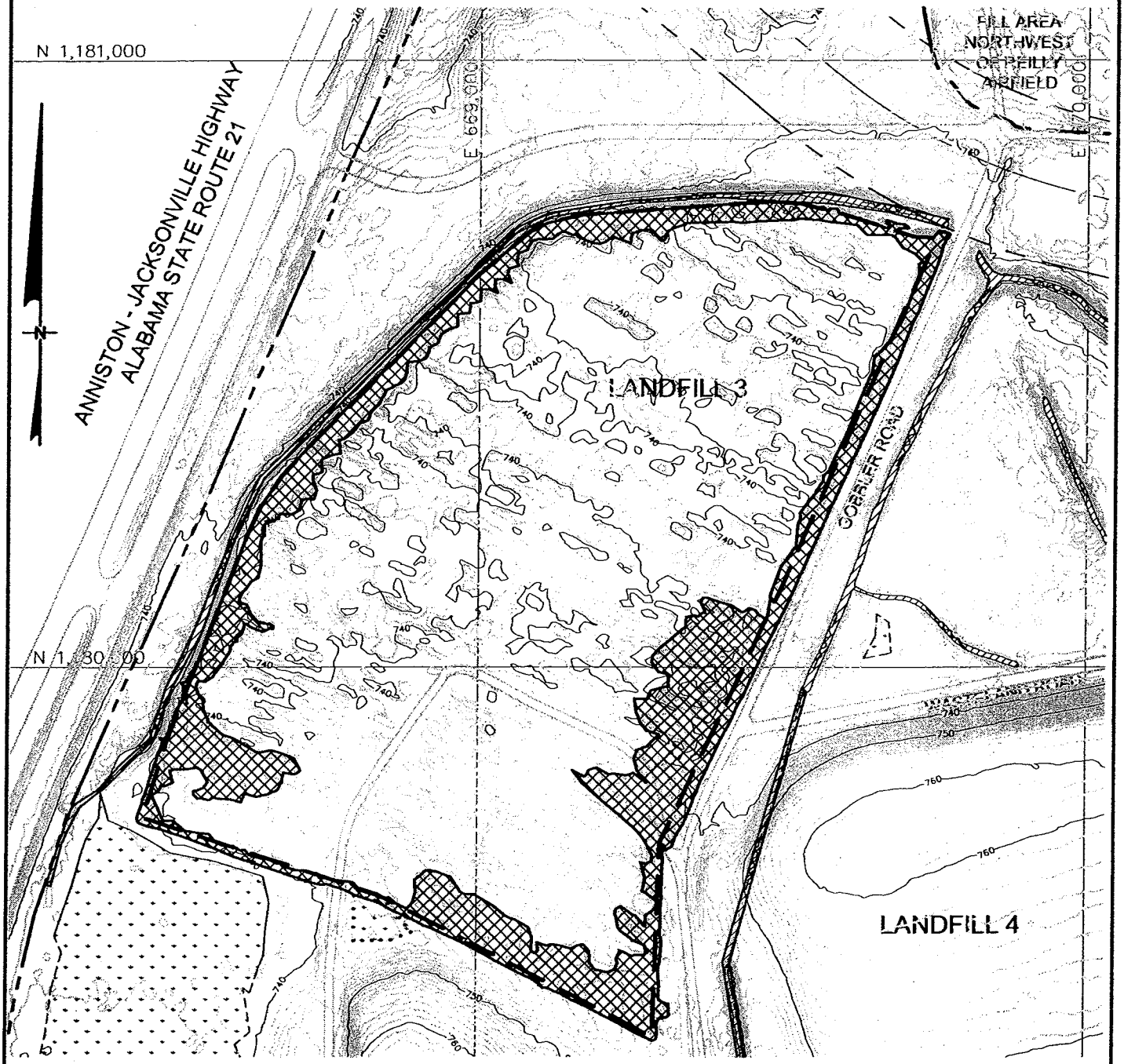
C. Logs may be used in the FANWR sedimentation pond to reinforce the subgrade beneath the sedimentation pond berms if needed and approved by the Construction Manager and Engineer.

[END OF SECTION]

# FIGURES

# SPECIFICATION SECTION 02115: CLEARING AND GRUBBING

## STUMP GRINDING AREAS FOR LANDFILL 3




## LEGEND

- 730 — EXISTING GROUND ELEVATION (FEET)
- EXISTING ROAD
- LANDFILL/FILL AREA PERIMETER LIMIT
- RIGHT-OF-WAY LIMIT
- INDUSTRIAL ACCESS ROAD CENTERLINE
- APPROXIMATE STUMP GRINDING AREA
- JURISDICTIONAL WETLAND (SURVEYED BOUNDARY)
- JURISDICTIONAL WETLAND (PRELIMINARY SURVEYED BOUNDARY)
- JURISDICTIONAL WATERS OF THE UNITED STATES

0 250' 500'

SCALE IN FEET

GeoSyntec Consultants
KENNESAW, GA

| | | | |
|---|---|---|---|
| DATE: | OCTOBER 2006 | SCALE: | 1"=250' |
| PROJECT NO. | GR3762 | FILE NO. | 3762F010 |
| DOCUMENT NO. | | FIGURE NO. | 02115-1 |

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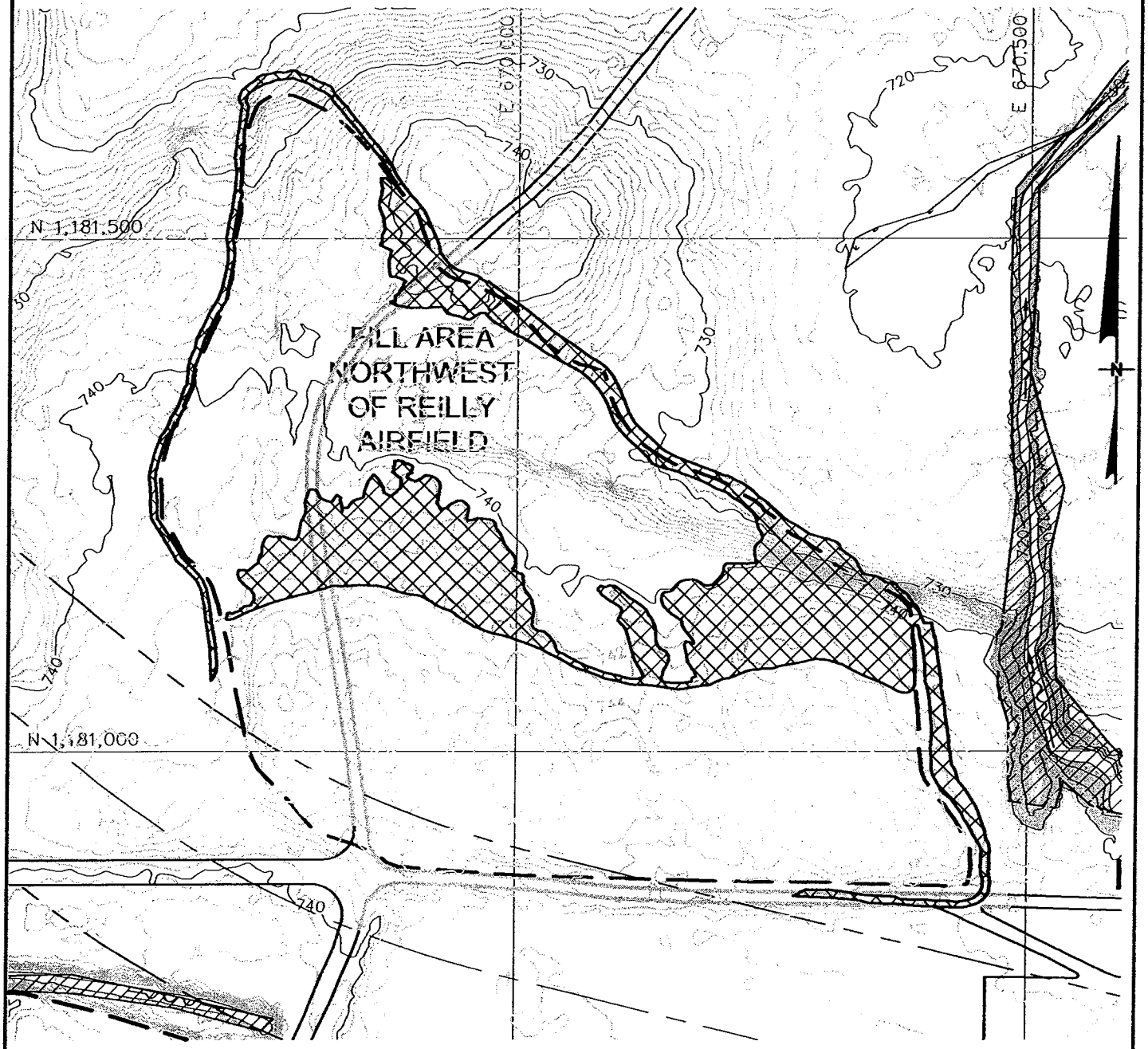
# SPECIFICATION SECTION 02115: CLEARING AND GRUBBING

## STUMP GRINDING AREAS FOR FANWR




### LEGEND

- 730 — EXISTING GROUND ELEVATION (FEET)
- EXISTING ROAD
- LANDFILL/FILL AREA PERIMETER LIMIT
- RIGHT-OF-WAY LIMIT
- INDUSTRIAL ACCESS ROAD CENTERLINE
- APPROXIMATE STUMP GRINDING AREA
- JURISDICTIONAL WETLAND (SURVEYED BOUNDARY)
- JURISDICTIONAL WETLAND (PRELIMINARY SURVEYED BOUNDARY)
- JURISDICTIONAL WATERS OF THE UNITED STATES

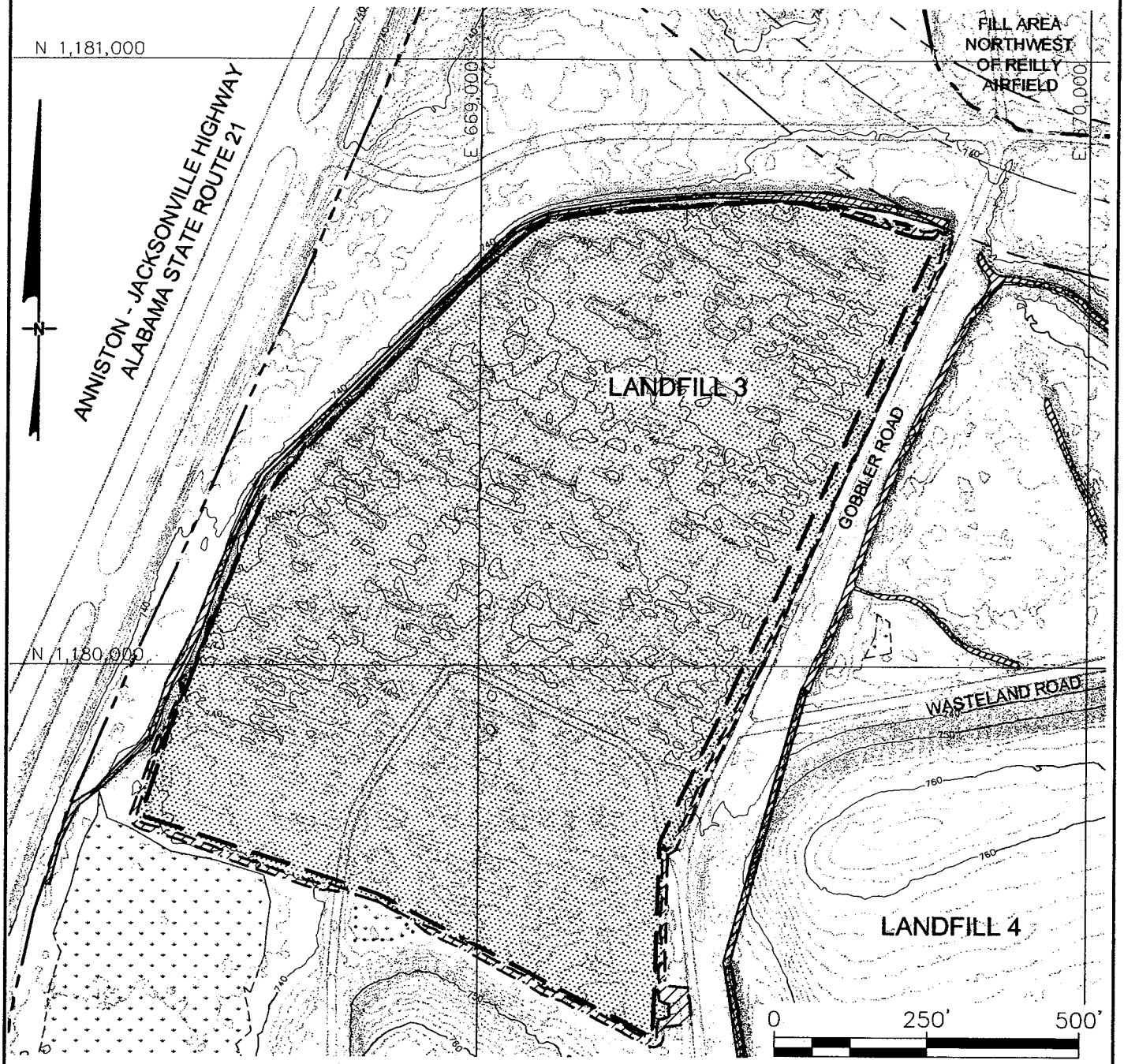
0 150' 300'

SCALE IN FEET

| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: OCTOBER 2006 | SCALE: | 1"=150' |
| | PROJECT NO. GR3762 | FILE NO. | 3762F012 |
| | DOCUMENT NO. | FIGURE NO. | 02115-2 |

# SPECIFICATION SECTION 02115: CLEARING AND GRUBBING

## TIMBER CLEARING LIMIT FOR LANDFILL 3




## LEGEND

- 730 — EXISTING GROUND ELEVATION (FEET)
- EXISTING ROAD
- LANDFILL/FILL AREA PERIMETER LIMIT
- RIGHT-OF-WAY LIMIT
- INDUSTRIAL ACCESS ROAD CENTERLINE
- APPROXIMATE TIMBER CLEARING AREA
- JURISDICTIONAL WETLAND (SURVEYED BOUNDARY)
- JURISDICTIONAL WETLAND (PRELIMINARY SURVEYED BOUNDARY)
- JURISDICTIONAL WATERS OF THE UNITED STATES
- TIMBER NOT SUITABLE FOR HARVEST REMAINS

GeoSyntec Consultants
KENNESAW, GA

| | | | |
|---|---|---|---|
| DATE: | OCTOBER 2006 | SCALE: | 1"=250' |
| PROJECT NO. | GR3762 | FILE NO. | 3762F015 |
| DOCUMENT NO. | | FIGURE NO. | 02115-3_REV1 |

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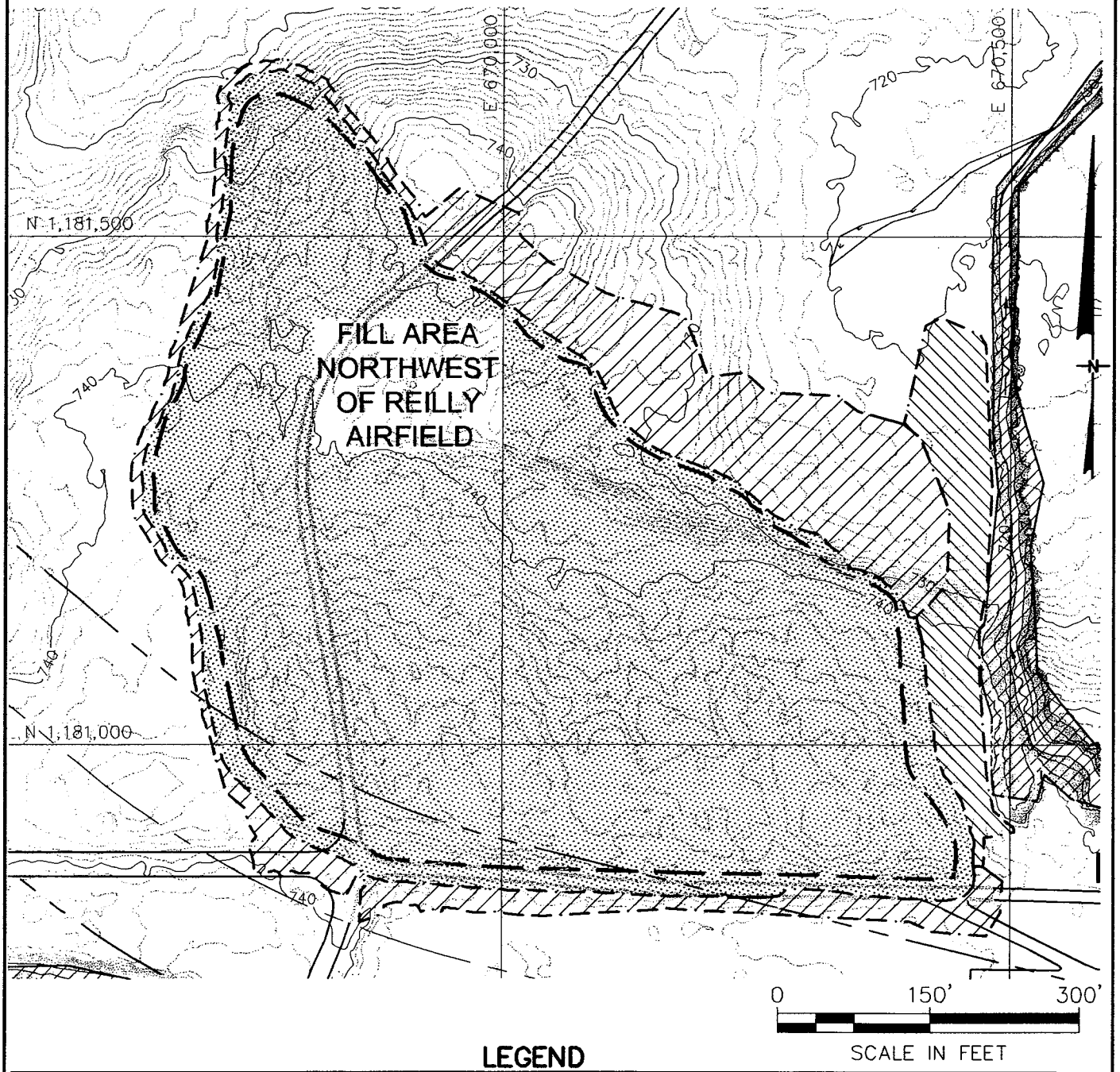
# SPECIFICATION SECTION 02115: CLEARING AND GRUBBING

## TIMBER CLEARING LIMIT FOR FANWR




## LEGEND

- 730 — EXISTING GROUND ELEVATION (FEET)
- EXISTING ROAD
- LANDFILL/FILL AREA PERIMETER LIMIT
- RIGHT-OF-WAY LIMIT
- INDUSTRIAL ACCESS ROAD CENTERLINE
- APPROXIMATE TIMBER CLEARING AREA
- APPROXIMATE SELECT TIMBER CLEARING AREA
- JURISDICTIONAL WETLAND (SURVEYED BOUNDARY)
- JURISDICTIONAL WETLAND (PRELIMINARY SURVEYED BOUNDARY)
- JURISDICTIONAL WATERS OF THE UNITED STATES
- TIMBER NOT SUITABLE FOR HARVEST REMAINS

| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: OCTOBER 2006 | SCALE: | 1"=150' |
| | PROJECT NO. GR3762 | FILE NO. | 3762F014 |
| | DOCUMENT NO. | FIGURE NO. | 02115-4_REV1 |

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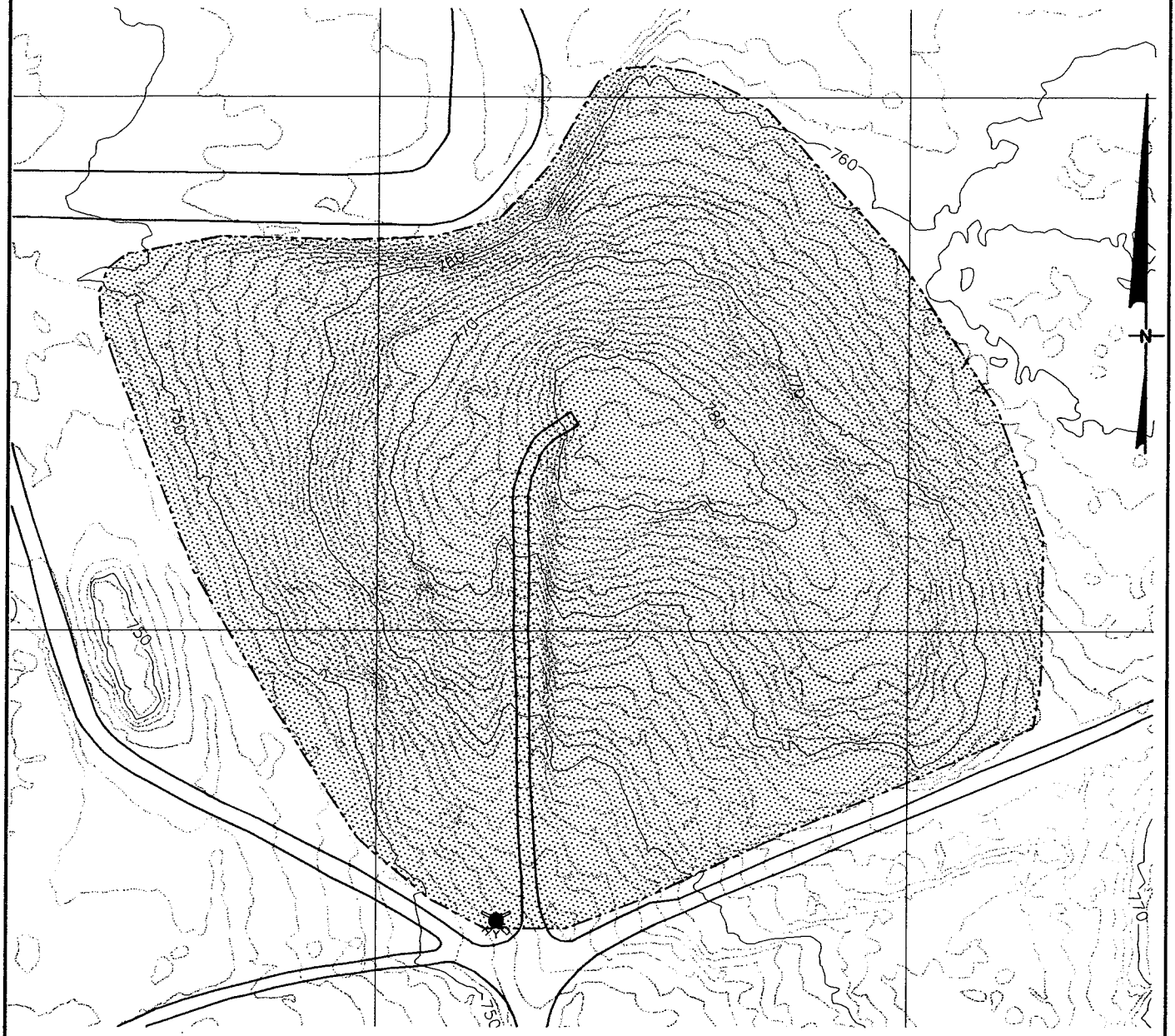
# SPECIFICATION SECTION 02115: CLEARING AND GRUBBING

## TIMBER CLEARING LIMIT FOR BORROW AREA SITE NO. 2




0 150' 300'

SCALE IN FEET

### LEGEND

730 EXISTING GROUND ELEVATION (FEET)

EXISTING ROAD

TIMBER NOT SUITABLE FOR HARVEST REMAINS

| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: DECEMBER 2006 | SCALE: | 1"=150' |
| | PROJECT NO. GR3762 | FILE NO. | 3762F024 |
| | DOCUMENT NO. | FIGURE NO. | 02115-5 |

# SECTION 02200

# EARTHWORK

# SECTION 02200

# EARTHWORK

## PART 1 GENERAL

### 1.01 PRE-QUALIFIED ON-SITE SOILS

A. Material for this project shall be obtained from BAS-2 and the stockpile located within Reilly Airfield (BAS-4 stockpile) that was obtained from BAS-4.. Each of these borrow areas has been pre-qualified for use by the Contractor.

B. The Contractor shall obtain structural fill, low permeability soil, and top soil from BAS-2 and structural fill and low permeability soil from the BAS-4 stockpile.

C. The Contractor shall reference and adhere to the requirements provided in the Borrow Area Management Plan. The Borrow Area Management Plan provides excavation methodology, sequencing of excavation, material descriptions of soils provided for the Contractors use, description of the borrow area investigation, and temporary stockpile requirements.

D. The Contractor shall reference and adhere to the requirements of the CQA Plan for placement, compaction, moisture conditioning, maximum permeability, and grading.

E. Contractor shall not haul unsuitable soils to either of the Closure System areas. The CQA Consultant shall visually monitor excavation of soils from the borrow areas and shall recommend to the Construction Manager soil types that are encountered that are unsuitable for use as structural fill, low permeability soil, and topsoil. Unsuitable soils shall be hauled to the Industrial Landfill (unless otherwise requested by the Construction Manager) and placed in accordance with the Industrial Landfill permit and Fill Progression Plan.

F. The permeability testing that has been performed to prequalify the material was performed at 95% compaction and +3% of optimum moisture for each material. These criteria were selected as a minimum criteria to achieve the required hydraulic conductivity. During construction an Apparent Permeability Zone (APZ) will be developed by the CQA Consultant, as needed, for each materially different soil type to develop a window of moisture and density combinations that will provide the maximum permeability

requirement of $1 \times 10^{-5}$ cm/s. This APZ development process is described in the CQA Plan provided in Volume II of IV of the Bid Documents. Based upon the Borrow Area Management Plan data, the Contractor should anticipate the potential for compaction and moisture requirements above the minimum criteria because of changes in material character throughout the excavation. As an example the minimum APZ criteria could be 97% STD compaction and +4 or 5% greater than optimum moisture content. Thin walled tube samples are not anticipated to be required, however, the CM and CQA Consultant reserve the right to obtain such samples if soil materials or placement methods are being used that are thought to be in question. The Contractor is required to work with the CQA Consultant by providing operators and management to obtain soil samples and to define soils that are acceptable for each of the three intended uses as is indicated in the CQA Plan and Specification Section 02200.

## 1.02 OFF SITE, CONTRACTOR SUPPLIED FILL MATERIAL

A. In the event that BAS-2 and BAS-4 stockpile do not contain sufficient quantity or quality of soil materials (i.e., structural fill, low permeability soil, and topsoil) and the Contractor is requested to locate fill materials, the Contractor will be required to obtain representative samples of the materials and provide them to the CQA Consultant for testing. These samples will be considered submittals and conform to the requirements of Specification Section 01350.

## 1.03 DESCRIPTION

A. This Section defines the requirements for earthwork and shall include, but not be limited to, providing labor, materials, equipment, and supplies necessary to perform.

1. grading of the existing subgrade surface;
2. fill and grading of the proposed subgrade/structural fill material; and
3. fill and grading of the proposed low permeability soil layer.

## 1.04 DEFINITIONS

A. Structural Fill. Fill material imported from identified on Base locations that is suitable for use in backfilling within the existing landfill/fill area footprint to achieve the bottom of the low permeability soil layer grades.

B. Low Permeability Soil. Fill material imported from identified on Base locations that will achieve a permeability of $1 \times 10^{-5}$ cm/s or less.

C. Unsuitable Fill. Material which, because of chemical contamination or structural characteristics, is judged by the CQA Consultant to be unsuitable for use as either structural fill or low permeability soil fill at the site.

D. Topsoil. Topsoil is defined and requirements are provided in Specification 02204.

## 1.05 SITE INVESTIGATIONS

A. The Contractor shall carefully examine the site, test the soils, and make inspections necessary in order to construct the earthwork as indicated by the Drawings. The Contractor shall satisfy himself as to the nature and physical properties of the soils, the condition of the existing ground surface, and the character of equipment and facilities needed prior to and during execution of the work. Inaccuracies or discrepancies between the actual field conditions and the Drawings, or between the Drawings and Specifications, shall be brought to the attention of the Construction Manager and CQA Consultant in order to clarify the exact nature of the work to be performed.

## 1.06 SAFETY

A. The Contractor shall be familiar with, and shall at all times conform to, the regulations of the *"OSHA General Industry Occupational Safety and Health Standards", and "OSHA Safety and Health Regulations for Construction,"* and other applicable state and municipal standards and regulations.

## 1.07 EMISSIONS CONTROL

A. The Contractor shall control dust during earthwork and related activities by suppressing dust with dispersed water.

## 1.08 CONSTRUCTION QUALITY ASSURANCE

A. The earthwork will be monitored and tested by the CQA Consultant as required in the CQA Plan. The CQA Consultant shall make recommendations to the Construction Manager as to if a soil material is suitable or unsuitable for use as fill.

B. The CQA Consultant will perform soil conformance testing on fill materials to establish compliance with this Section and the CQA Plan. The Contractor shall provide equipment and labor to assist the CQA Consultant in obtaining conformance samples from excavations and stockpiles. The Contractor shall identify source(s) of fill material within the identified areas for excavation at least 10 calendar days prior to use.

C. The CQA Consultant will perform soil performance testing on the compacted fill lifts (structural fill and low permeability soil) to evaluate compliance with this Section. The CQA Consultant will indicate any portion of the earthwork that does not meet the requirements of this Section and will delineate the extent of the nonconforming area.

D. The Contractor shall correct deficiencies and nonconformances identified by the CQA Consultant at no additional cost to the Owner.

E. The Contractor shall be aware of the activities required of the CQA Consultant by the CQA Plan and shall account for these activities in the construction Schedule.

## 1.09 SUBMITTALS

A. Contractor submittals required under this Section shall be made (1) only if off-site imported fills are provided by the Contractor and (2) in accordance with requirements set forth in Section 01350 of the Specifications unless stated otherwise. Submittals under this Specification include, but are not limited to, test results for fill material, together with other information, to be submitted at least seven days before scheduled delivery of the material, as detailed in this Section.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. Structural fill material for use at the site shall be subject to approval by the CQA Consultant. Structural fill material shall not contain rocks or lumps larger than 5 inches in greatest dimension, with no more than 15 percent by weight larger than 3 inches. The Contractor shall provide equipment and manpower to obtain representative samples for the CQA Consultant from the identified borrow sources 10 days prior to material use. Testing of structural fill samples will be performed by the CQA Consultant in accordance with the requirements of the CQA Plan. The Contractor shall compact and moisture

condition (including discing of the material to provide a homogeneous soil and moisture mix) the structural fill to achieve the compaction requirements outlined in the CQA Plan.

B. Low Permeability Soil material for use at the site shall be subject to approval by the CQA Consultant. Low Permeability Soil Material shall not contain rocks or lumps larger than 2 inches in greatest dimension. The Contractor shall provide equipment and manpower to obtain representative samples from the identified borrow sources 10 days prior to material use. Testing of low permeability soil samples will be performed by the CQA Consultant in accordance with the requirements of the CQA Plan. The Contractor shall compact and moisture condition (including discing of the material to provide a homogeneous soil and moisture mix) the low permeability soil to achieve the compaction and permeability requirements outlined in the CQA Plan.

## 2.02 EQUIPMENT

A. Use compaction equipment to achieve the required minimum soil dry density within the range of acceptable moisture contents.

B. Use hand compaction equipment such as walk-behind padfoot compactors, hand tampers, or vibratory plate compactors for compaction in areas inaccessible to large compaction equipment.

C. Use water tank trucks, pressure distributors, or other equipment designed to apply water uniformly and in controlled quantities to variable surface widths to provide the required in-place moisture content.

D. Use miscellaneous equipment such as scarifiers, disks, spring tooth or spike tooth harrows, earth hauling equipment, and other equipment, as necessary for earthwork construction.

# PART 3 EXECUTION

## 3.01 GENERAL

A. It shall be the Contractor's responsibility to maintain adequate safety measures and working conditions and to take measures necessary during the performance of the work to

protect the entire project area and adjacent properties which would be affected by this work from storm damage, flood hazard, caving of trenches and embankments, and sloughing of material until final acceptance by the CQA Consultant. It shall be the Contractor's responsibility to maintain completed areas until the entire project area is in satisfactory compliance with the Specifications, CQA Plan, and Project Drawings. It shall be the Contractor's responsibility to account for the time that may be required to maintain the project area as required in these Specifications, the construction Schedule, and CQA Plan. The Contractor shall account in the construction Schedule for delays caused by weather, including time for dewatering, drying–moisture conditioning, and sample testing.

B. Before beginning backfilling, foreign material, including surface water and loose organic material shall be removed from the space to be backfilled and the area to be backfilled shall be inspected and approved by the CQA Consultant. If deemed necessary, the existing area will be compacted prior to placement of the backfill. Backfill materials shall be placed "in-the-dry" on subgrades acceptable to the CQA Consultant. A 2-foot maximum bridge lift will be permitted in the trough areas in Landfill 3.

C. The Contractor shall prepare and proofroll the subgrade as described within the CQA Plan and within this Specification.

## 3.02 GRADING

A. Grade designated areas to the subgrade elevations and excavation limits indicated on the Project Drawings. Stockpile excavated material in designated areas only. Prepare the subgrade in accordance with this Section.

B. Do not remove soil or waste material from the site or dispose of soil or waste material included in this Contract except as indicated in these Specifications, on the Drawings or as approved in writing by the Construction Manager.

## 3.03 STOCKPILING

A. Stockpile required soils at the areas indicated on the Project Drawings or as directed by the Construction Manager.

B. Construct stockpiles no steeper than 3H:1V (horizontal:vertical), grade to drain, seal by tracking perpendicular to the slope contours with a dozer, and dress daily during periods

when fill is taken from the stockpile. Install erosion and sediment control measures around stockpile areas.

## 3.04 SUBGRADE PREPARATION

A. Subgrade surface shall be relatively free of debris, foreign objects, loose organics, and other deleterious materials.

B. In areas of subgrade preparation where soft soils are encountered, remove and replace the soil to a minimum depth of 1 foot below the proposed subgrade elevation. Fill the area with general fill in accordance with the requirements of this Section. Compact the fill material to at least 95 percent standard Proctor maximum dry density and within a moisture range to be determined by the CQA Consultant based on laboratory test data (ASTM D 698).

C. In excavations or other areas where water accumulates, implement measures to remove the water in accordance with this Section. Maintain the subgrade surface free of standing water and firm. Maintain dewatered areas in this condition until overlying construction is complete. Surface water that comes into contact with exposed waste shall be contained and disposed of in accordance with Section 11006.

## 3.05 FILL

A. Place fill material on surfaces which are relatively free of debris, branches, vegetation, mud, ice, or other deleterious material as approved by the CQA Consultant.

B. Place structural fill material in compacted lifts with a thickness of 8 inches (maximum). Place low permeable soil in compacted lifts with a thickness of 6 inches (maximum). In areas where compaction is to be performed using hand-operated equipment, place the fill material in loose lifts with a loose thickness of 4 inches ±1 inch. Place low permeable soil material in compacted lifts with a thickness of 6 inches (maximum).

C. Remove rock and soil clod particles not conforming with Paragraph 2.01 of this specification.

D. Prior to placing a succeeding lift of material over a previously compacted lift, thoroughly scarify the previous lift to a depth of 2 inches by discing, raking, or tracking with a dozer. Moisture condition the preceding lift in accordance with this Section if the moisture

content of the surface of the preceding lift is not within the range of acceptable moisture contents for the fill.

E. Reduce clod size by discing, raking, or tracking with a dozer or other means to achieve the required maximum soil clod size as defined in Paragraph 2.01 of this specification.

F. Structural fill material in each lift shall be compacted to at least 95 percent of its standard Proctor maximum dry density and within a moisture content range determined by the CQA Consultant based on testing results (ASTM D 698).

G. Low permeable soil material in each lift shall be compacted to at least 95 percent of its standard Proctor maximum dry density and within a moisture content range determined by the CQA Consultant based on testing results (ASTM D 698). Samples of low permeable soil material will be remolded by the CQA Consultant defined soils laboratory to define an Acceptable Permeability Zone (APZ) which will be used to qualify field nuclear density test results and the acceptance criteria to achieve a permeability of $1 \times 10^{-5}$ cm/sec or less for each material type and source.

H. Do not compact fill material at temperatures below 32°F, unless otherwise authorized in writing by the Supervising Contractor

I. Do not place fill during periods of precipitation. Placement may occur during periods of misting or drizzle, if authorized by the Construction Manager. After a significant rain event, Contractor shall moisture condition (i.e., scarify/disc or spade off wet material) the upper 6 inches of soil prior to placement of additional soil.

## 3.06 CARE OF DRAINAGE WATER

A. Grading shall be performed as shown on the Drawings to prevent surface water from flowing into excavations or off-site.

B. The Contractor shall place silt fences as needed to control sediment runoff.

## 3.07 CLEAN UP

A. Upon completion of work in this Section, rubbish and debris shall be removed from the site. Construction equipment and implements of service shall be removed and the entire area involved shall be left in a neat, clean, and acceptable condition.

B. Excavated materials which are determined to be unsuitable for use as fill, or excavated material that is in excess of that required to be used for fill, shall be disposed of in the Industrial Landfill or in a manner approved by the Construction Manager at the Contractor's expense.

## 3.08 EROSION CONTROL

A. The Contractor shall prevent erosion of exposed areas and newly deposited fill soil. The Contractor shall follow applicable federal and state regulations and these Specifications for erosion and sedimentation control.

[END OF SECTION]

# SECTION 02204

# TOPSOIL AND VEGETATION

# SECTION 02204

# TOPSOIL AND VEGETATION

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. The work of this Section includes the furnishing of labor, materials, tools, equipment, and services required to complete topsoil placement and establishment of vegetation. The work includes but is not limited to:
   1. providing and placing topsoil;
   2. applying fertilizer and soil amendments;
   3. seeding;
   4. installation of the erosion control blanket;
   5. installation of trees; and
   6. planting of wildflowers within the Fill Area Northwest of Reilly Airfield.

B. Topsoil material shall be provided by the Owner and will be obtained from BAS-2 or the BAS 4 stockpile. The Contractor shall be responsible for loading and hauling of the material from the Owner supplied stockpile to the project site workface. The Contractor shall be responsible for removal of loose organic materials (i.e., tree limbs, stumps, mulch, etc.) and clods, hardpan, shale, stones, or refuse. Contractor shall be responsible to install topsoil materials as specified in this section to the grades and thicknesses required in the Drawings.

### 1.02 SUBMITTALS

A. Submittals shall be made in accordance with requirements set forth in Section 01350 of the Specifications unless stated otherwise. Submittals under this specification include, but are not limited to:
   1. results of initial tests of the topsoil borrow source (to be submitted to the Construction Manager and Engineer together with a sample of the proposed topsoil type obtained from BAS-2 and BAS 4 stockpile prior to any material being hauled from the borrow area or stockpile respectively). The sample(s) shall be tested, at the Contractors expense, by the local Agricultural Extension Service to determine the necessary amendments for the required seed mix, wildflower mix, and proposed trees; and

2. a schedule of the proposed sequence of topsoil placement and seeding (to be submitted with the overall construction Schedule and the Materials and Waste Handling Plan).

## 1.03 VERIFICATION OF DIMENSIONS AND QUANTITIES

A. Before proceeding with work, the Contractor shall carefully check and verify dimensions and quantities and shall immediately inform the Construction Manager of any discrepancies between the Drawings and actual conditions. No work shall be performed in an area where discrepancy occurs until approval has been provided.

## 1.04 CONSTRUCTION SEQUENCE

A. The sequence of operations shall be in accordance with a Construction Manager approved Schedule. The Contractor shall prepare a progress Schedule and secure the Construction Managers approval for the construction sequence before starting work.

# PART 2 PRODUCTS

## 2.01 GENERAL

A. Materials shall be checked and approved by the Construction Manager or his designee before delivery, hauling of onsite materials, and/or installation. Such approval shall not relieve the Contractor of his obligations under this Contract.

B. Plant material chosen must be free of disease and pests, be of good quality and well shaped and branched.

C. The Contractor is responsible for maintaining plantings (including, but not limited to: watering, spraying, mulching, fertilizing, etc.), until the work is accepted by the Construction Manager.

D. The Contractor agrees to perform landscape maintenance (including watering) throughout the one year guarantee period unless otherwise determined.

E. The Construction Manager will approve the staked location of plant material prior to installation.

## 2.02 MATERIALS

A. Topsoil. Topsoil shall be obtained by the Contractor from BAS-2 and BAS 4 stockpile. Topsoil shall be natural, friable clay loam topsoil without admixture of subsoil. Acceptable topsoil shall contain not less than 3 percent nor more than 20 percent organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 degrees F. Topsoil shall be stable when spread on the slopes associated with the cap area and associated perimeter berms. Topsoil shall be relatively free of tree limbs, tree roots, clods, hardpan, shale, stones, or any refuse from buildings or industrial operations. One hundred percent (100%) by weight shall pass a 2 inch screen. A sample cubic yard or load of topsoil from BAS-2 shall be stockpiled where it shall remain protected throughout the life of the project. Subsequent deliveries of topsoil to the workface from BAS-2 shall equal the sample in every respect. The Contractor shall advise the Construction Manager of the location of the topsoil within BAS-2 (i.e., depth and area), the total amount available, and the approximate quantity he intends to use of the sample type. No topsoil shall be delivered, deposited, or otherwise worked while wet, muddy, or frozen. Topsoil shall be installed in one continuous 6 inch (minimum) final thickness to achieve the final elevations shown on the Drawings.

B. Fertilizer. Fertilizer shall be of the specified organic composition as determined by testing performed by the local Agricultural Extension Service.

C. Limestone. Limestone shall be ground dolomitic limestone with 98-100 percent passing a 20 mesh sieve and 50 percent passing a 100 mesh sieve.

D. Seed. Grass seed shall meet the requirements specified in Alabama Department of Transportation, Standard Specifications for Highway Construction, 2006 Edition, Section 860, Roadside Improvement Materials, Subsection 860.01-Seed. Contractor shall use seed designated for *Zone 1-Areas Subject To Frequent Mowing*.

E. Trees and Plants. Quantity, tree species, and placement shall be as described in the Drawings and as listed in this Specification. Contractor shall install trees and plants according to the following Planting Schedule:

**Planting Schedule**

| Quantity | Common Name | Botanical Name | Size |
|---|---|---|---|
| 19 | October Glory Red Maple | Acer Rubrum 'October Glory' | 2" CAL. |
| 5 | Heritage River Birch | Betula Nigra 'Heritage' | 7-8 ft height |
| 17 | Loblolly Pine | Pinus Taeda | 7 GAL. |
| 2 | Sycamore | Platanus Occidentalis | 4" CAL. |

| Quantity | Common Name | Botanical Name | Size |
|---|---|---|---|
| 3 | Tulip Poplar | Liriodendron Tulipefera | 3" CAL. |
| 25 | Redbud | Cercus Canadensis | 3" CAL. |
| 4 | Sourwood | Oxydendron Arobreum | 3" CAL. |
| 5 | Cherokee Princess Dogwood | Cornus Florida 'Cherokee Princess' | 2" CAL. |
| 14 | Beauty Berry | Callicarpa Americana L. | 3 GAL. |
| 30 | Virginia Sweetspire | Itea Viriginica | 3 GAL. |
| 35 | Oak Leaf Hydrangea | Hydrangea Quercifolia Bartr. | 3 GAL. |
| 28 | Button Bush | Cephalanthus Occidentalis | 3 GAL. |

F. Wildflower Seed. Wildflower seed shall be from the latest season's crop. Use seed that meets the minimum germination rates listed in the Wildflower Seeding Table with 98 percent seed purity and 0.5 percent weed seed. Proportion seed mixture according to the Wildflower Seeding Table.

**Wildflower Seeding Table**

| Approx. % by Weight | Botanical Name | Common Name | % Germinantion |
|---|---|---|---|
| 1.5 | Achillea millefolium | White Yarrow | 50 |
| 5.0 | Centaurea cyanus | Cornflower | 60 |
| 5.0 | Chamecrista fasicu lata | Partridge Pea | N/A |
| 10.0 | Coreopsis lanceolata | Lance-leaved Coreopsis | 40 |
| 10.0 | Coreopsis tinctoria | Plains Coreopsis | 65 |
| 5.0 | Delphinium ajacis | Rocket Larkspur | 60 |
| 5.0 | Escholzia californica | California Poppy | 60 |
| 5.0 | Gaillardia aristata | Perennial Gaillardia | 45 |
| 10.0 | Gaillardia pulchella | Annual Gaillardia | 45 |
| 2.5 | Monarda citriodora | Lemon Mint | 40 |
| 10.0 | Nemonphila men ziesii | Baby Blue Eyes | 70 |
| 1.0 | Oenothera speciosa | Pink Primrose | N/A |
| 2.0 | Papaver rhoeas | Corn Poppy | 60 |
| 10.0 | Rubeckia hirta | Black-Eyed Susan | 60 |
| 5.0 | Salvia farinacea | Blue Sage | 40 |
| 3.0 | Solidago spp. | Goldenrod | N/A |

| Approx. % by Weight | Botanical Name | Common Name | % Germinantion |
|---|---|---|---|
| 10.0 | Trifolium incarnatum | Crimson Clover | 80 |
| 100% total mixplant at a rate of 12 lbs/acre | | | |

G. Mulch. Material used for mulch shall be a straw or wood fiber mulch as defined in Section 860.03 (b), Class A. Mulch, of the Alabama Department of Transportation, Standard Specifications for Highway Construction, 2006 Edition.

H. Erosion Control Blanket. Areas defined by the Drawings as requiring erosion control blanket/mat shall be covered by a Class 2.D temporary erosion control blanket as defined in Chapter 4, Surface Stabilization, Erosion Control Blanket, of the Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, Volume 1, January 2006 Revision.

## PART 3 EXECUTION

### 3.01 GENERAL

A. Subgrades shall be brought to the proper elevation by the Contractor. Topsoil shall be applied to the capped area and berm slopes only. Seeding, mulching, and soil amendments shall be applied to all disturbed areas.

### 3.02 TOPSOIL AND SOIL AMENDMENTS

A. Spreading. The Contractor shall spread topsoil evenly to a depth of 6 inches deep over the cover system areas. Topsoil surface shall conform to finished grades shown on the Drawings after natural settlement of the topsoil layer.

B. Fertilizing and Liming.
   1. Prior to delivery to the site, the Contractor shall take soil samples of each soil material type to be seeded and shall have the samples tested by the local Agricultural Extension Service. The Contractor shall apply amendments, in the quantity and method of application, to the soil as recommended by the Agricultural Extension Service.
   2. The Contractor shall evenly spread the specified fertilizer and amendments over topsoil at the specified rate.

## 3.03 SEEDING, MULCHING, TREES, AND PLANTS

A. Seeding and mulching operations shall be performed in accordance with Alabama Highway Department Specification Section 652, Vegetation Establishment and Mowing as modified herein. Seeding and mulching shall be performed immediately after topsoil placement. In addition, the grasslined ditches and disturbed areas of the site and adjacent properties not requiring topsoil will be seeded and mulched in accordance with this section. The only site areas which will not be seeded and mulched are areas that will be stabilized with stone, riprap, or roadway materials.

B. Seeding
   1. Grass seed shall be applied to areas of the site at the rate prescribed in Section 860.01 of the Alabama Department of Transportation, Standard Specifications for Highway Construction, 2006 Edition.

   2. Seeding, liming, and fertilization may be accomplished by hydraulic application method. *A tackifier shall be used in conjunction with seed dispersion.*

C. Erosion Control Blanket and Mulching
   1. Much or erosion control blanket shall be applied within 24 hours of seed placement.
   2. Erosion Control Blanket: Slopes 3H:1V or steeper (i.e., cover system areas, surface water diversion berms, roadway sideslopes, sediment pond slopes) and swale flow line channels shall be covered by an erosion control blanket/mat as shown in the Drawings. The Contractor shall install erosion control blanket in accordance with Chapter 4, Surface Stabilization, Erosion Control Blanket, of the Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, Volume 1, January 2006 Revision..
   3. Mulch: All other disturbed areas shall be mulched as defined in Chapter 4, Surface Stabilization, Mulching, of the Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, Volume 1, January 2006 Revision.

D. Trees and Plants

   1. Trees shall have a 4' diameter mulch bed.
   2. Contractor shall be responsible for providing positive drainage at 2% minimum in all planted areas.

3. Plants must be container-grown or balled & burlapped (B&B) as indicated in the plant list.
4. Trees must be straight trunked, full headed.
5. Trees must be guyed or staked and installed as shown in Figures 1 - 4 attached with this Specification. Stakes shall be removed by the contractor after 1 year maintenance period.
6. Plants and planting areas must be completely mulched as specified.

1. The Contractor agrees to perform landscape maintenance (including watering) throughout the one year guarantee period unless otherwise determined.
2. After being dug at the nursery source, trees in leaf shall be acclimated for two (2) weeks under a mist system prior to installation.
3. Plant material which dies, turns brown or defoliates (prior to total acceptance of the work) shall be promptly removed from the site and replaced with material of the same species, quantity, size and meeting all plant list specifications.
4. Standards set forth in American Standards for nursery stock represent guideline specifications only and constitute minimum quality requirements for plant material.
5. Pinestraw beds are to be mulched with 4" of pine straw. All beds are to be mulched immediately after planting as per the detail on this sheet.

E. Wildflowers

1. Sow seed within 24 hours of applying the fertilizer and lime to the seed bed.
2 Sow seed uniformly at the rate of 12 lbs/acre. Contractor shall use mechanical seed drills or mix seed with dry sand and spread it with either a drop spreader or rotary spreader.
3. Cover the seed to no more than 1/8 in (3 mm) deep.
4. After seeding, roll the area with a cultipacker or similar equipment to ensure good soil contact for seedling germination.
5. After rolling the seed bed, apply 1 ton per acre (2 Mg per hectare) of wood fiber mulch.
6. Contractor shall sow grass seed as specified within this specification in the wildflower planting area shown on the Drawings with the wildflower seed.

## 3.04 ENVIRONMENTAL PROTECTION

A. The Contractor shall provide silt fences as needed to prevent runoff from seeded areas until vegetation has become established.

## 3.05 CLEAN-UP

A. Upon completion of work, the Contractor shall remove from the site cord, wrappings, stakes, and extraneous materials. Contractor shall remove tools, equipment, and other materials, except those necessary for maintenance. Litter developing by reason of the Contractor's maintenance shall be removed as it accumulates.

## 3.06 MAINTENANCE

A. The Contractor shall maintain areas until seed has germinated and produced a thick stand of grass but for not less than one (1) year following acceptance of construction by the Construction Manager.

B. During the maintenance period, the Contractor shall perform all mowing, watering, repair of erosion areas, replacement of cover soil and topsoil, cleaning of drainage ditches and drainage system clogged by eroded topsoil and cover soil, and reseeding until a thick stand of grass has been produced as accepted by the Construction Manager.

C. Acceptance shall be defined as per the Alabama Highway Department Specification Section 652.03 (j) as follows: "A satisfactory stand of vegetative cover shall be defined as a cover of living plants, after true leaves are formed, of the required seed species designated for use in which gaps larger than 25 square inches do not occur".

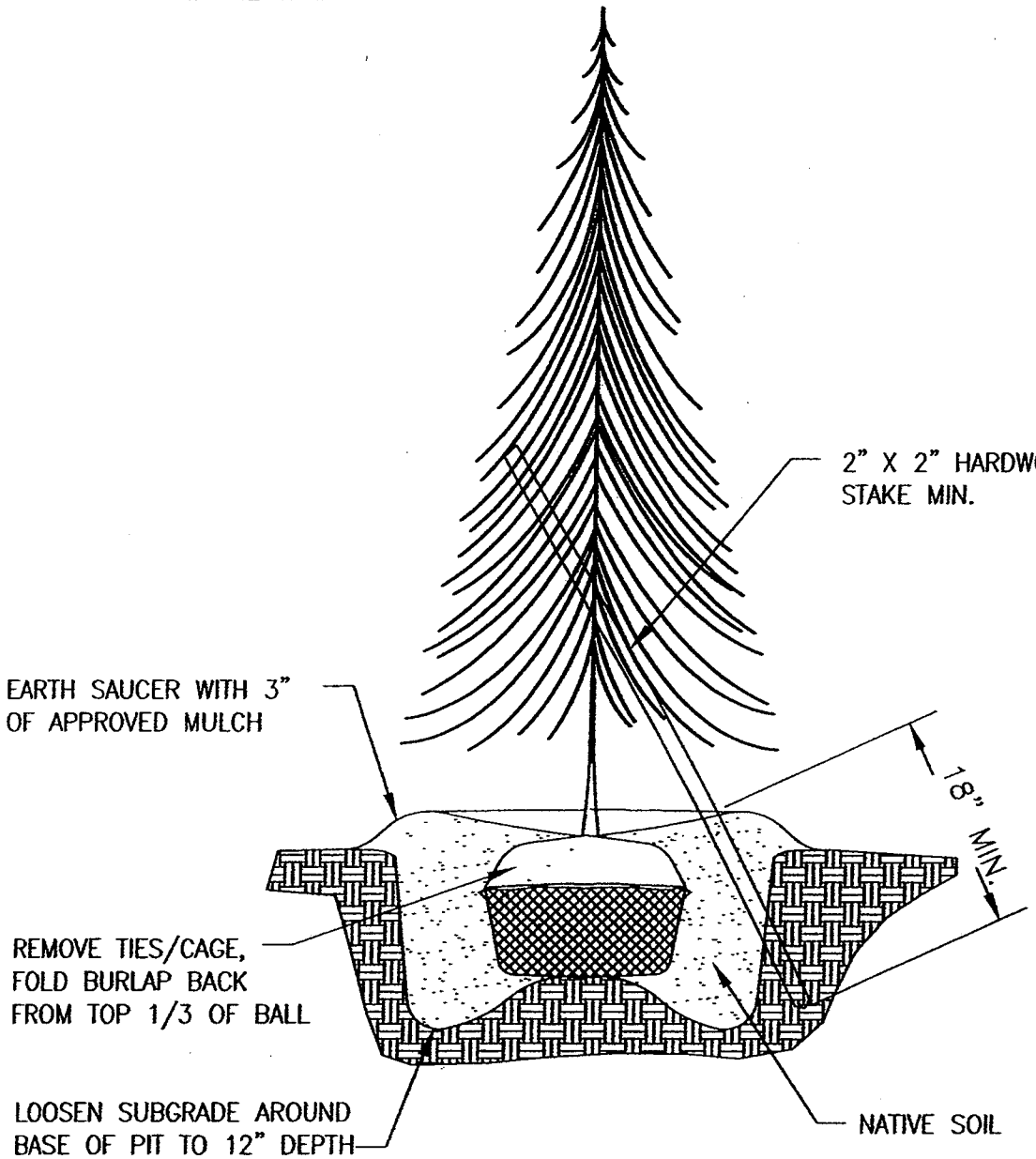
D. The maintenance period shall be a minimum of 1 year. The Contractor shall cut the grass at least once, but not more than, twice per season after a thick stand of grass is produced (does not include Annual Ryegrass). The Contractor shall coordinate grass cutting with the Construction Manager so that inspections can be conducted immediately following cutting.

E. The Contractor shall commence post-construction maintenance within two weeks of notification that maintenance is required. Maintenance will be conducted to the satisfaction of the Construction Manager.

[END OF SECTION]

# FIGURES

NOTE: TOP OF TREE BALL SHALL BE 2"–3" ABOVE ORIGINAL GRADE AT THE TIME OF PLANTING.

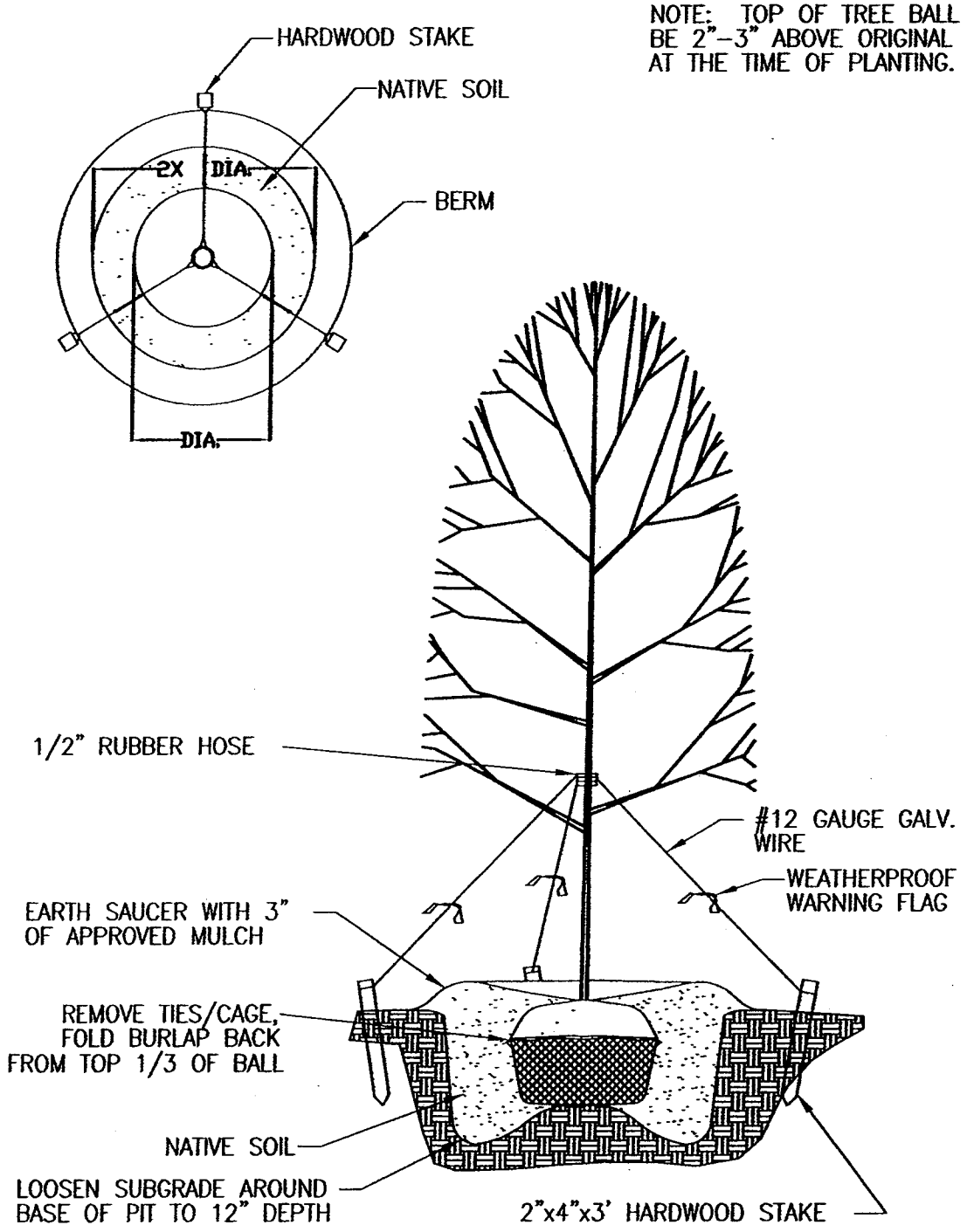



# CONIFER PLANTING DETAIL

NOT TO SCALE

| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: OCTOBER 2006 | SCALE: | N.T.S. |
| | PROJECT NO. GR3762 | FILE NO. | 3762F016 |
| | DOCUMENT NO. | FIGURE NO. | 1 |

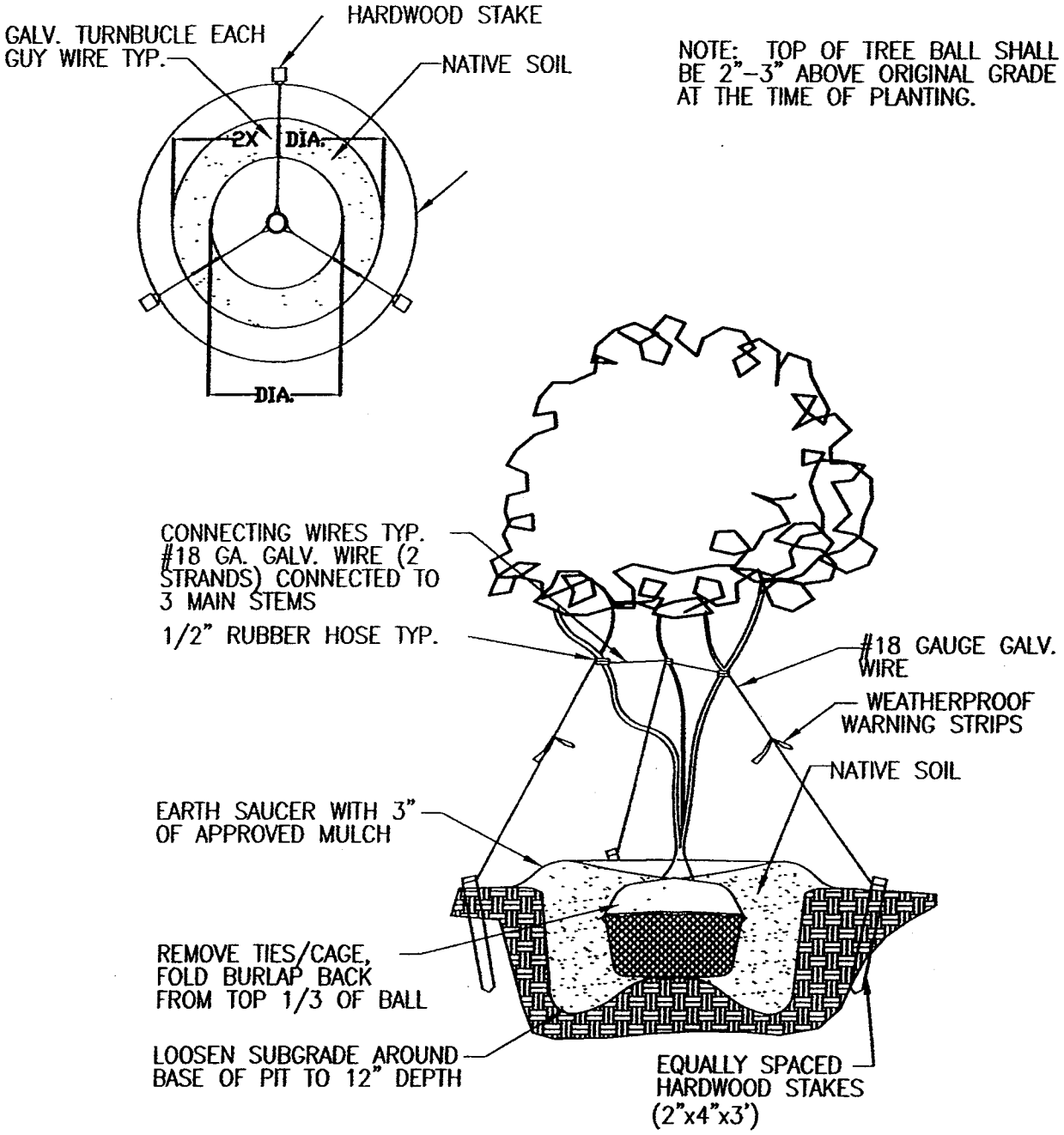
NOTE: TOP OF TREE BALL SHALL BE 2"–3" ABOVE ORIGINAL GRADE AT THE TIME OF PLANTING.




# TREE GUYING DETAIL

NOT TO SCALE

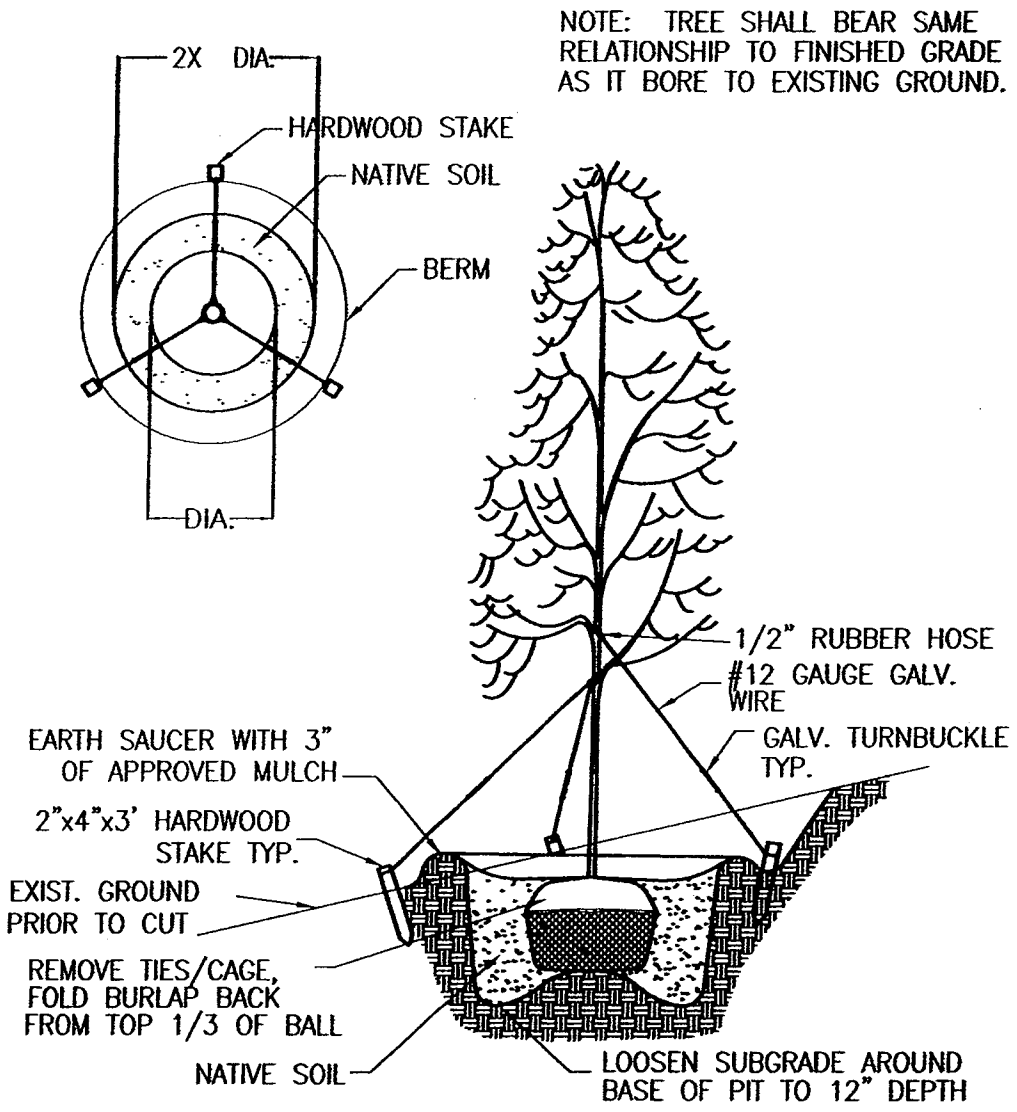
| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: OCTOBER 2006 | SCALE: | N.T.S. |
| | PROJECT NO. GR3762 | FILE NO. | 3762F017 |
| | DOCUMENT NO. | FIGURE NO. | 2 |




# MULTIPLE STEM PLANTING DETAIL

NOT TO SCALE

| | | | |
|---|---|---|---|
| GeoSyntec Consultants, Kennesaw, GA | DATE: OCTOBER 2006 | SCALE: | N.T.S. |
| | PROJECT NO. GR3762 | FILE NO. | 3762F018 |
| | DOCUMENT NO. | FIGURE NO. | 3 |




# TREE PLANTING & STAKING ON SLOPES

NOT TO SCALE

| | | | |
|---|---|---|---|
| GeoSyntec Consultants<br>KENNESAW, GA | DATE: OCTOBER 2006 | SCALE: | N.T.S. |
| | PROJECT NO. GR3762 | FILE NO. | 3762F019 |
| | DOCUMENT NO. | FIGURE NO. | 4 |

# SECTION 02206

# WASTE EXCAVATION AND HANDLING

# SECTION 02206

# WASTE EXCAVATION AND HANDLING

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section includes general procedures that shall be followed whenever waste material, handled inside the cap area. The Contractor shall provide all labor, materials, equipment, and supplies required for: movement of waste within the cap area in preparation for placement of the soil cap. The Contractor shall transport waste from identified waste excavation areas to the areas under the cap which will receive fill. The Contractor also shall move soil to the extent necessary to provide access to the cut areas or to ensure that all slopes remain stable during cut and fill. The Contractor is responsible for minimizing the exposure of surface water to exposed waste and for eliminating surface water accumulation on and controlling runon and runoff of waste cut and fill areas. Information on waste material is provided in the Design Report of the Contract Documents.

### 1.02 SITE INVESTIGATION

A. The Contractor shall carefully examine the site and make inspections necessary to determine the full extent of the work required. The Contractor shall satisfy himself as to the location of the work, the condition of the existing ground surface, and the types of equipment and facilities needed prior to and during execution of the work. Inaccuracies or discrepancies between the actual field conditions and the Drawings, or between the Drawings and Specifications shall be brought to the attention of the Construction Manager for clarification prior to performing each work activity.

### 1.03 SAFETY

A. The Contractor shall be familiar with, and shall at all times conform to the regulations of the "*OSHA General Industry Occupational Safety and Health Standards*," and "*OSHA*

*Safety and Health Regulations for Construction*," and applicable state and municipal standards and regulations.

## 1.05 ENVIRONMENTAL SAFEGUARDS

A. The Contractor shall control dust and volatile organic emissions in accordance with Materials and Waste Handling Work Plan and with provisions set forth in the Comprehensive Spill and Emissions Control Plan. The Contractor shall perform grading and provide silt fencing to control runoff from and runon to newly graded areas. Trucks traversing directly over waste materials (i.e., during the placement of structural fill at Landfill 3) will need to be decontaminated prior to use for clean fill and before demobilization.

## 1.06 SUBMITTALS

A. The Contractor shall prepare a Materials and Waste Handling Work Plan that includes a program for the movement of materials within the area to be capped. The Plan shall describe in detail the site locations to be utilized for handling, staging, and deposition of waste and soil materials during the cut and fill process. The Plan shall describe in detail the equipment, facilities, procedures, and sequence of events associated with the movement of the waste materials. The Contractor shall not proceed with cut and fill until the Materials and Waste Handling Work Plan has been reviewed and approved by the Construction Manager.

B. Submittals shall be made in accordance with requirements set forth in Section 01350 of the Specifications. Submittals under this specification include, but are not limited to:
   1. plans for equipment, procedures, staging locations, deposition, and sequencing of cut and fill, including cut and fill of impacted materials, to be included in the Contractor's Materials and Waste Handling Work Plan;
   2. surface water control and mechanisms for preventing runoff of surface water that has come into contact with waste material including procedures for containerizing, analytical testing, and method of disposal of the containerized waste water;
   3. intermediate surveys made to determine the final cut and fill quantities; and
   4. records of estimated daily cut and fill volumes, to be included with the Contractor's Daily Work Activity Summary.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. The Fill Area Northwest of Reilly Airfield (FANWR) was first identified as a potential disposal area from a 1954 aerial photograph. Wastes reportedly disposed of include paint containers, fluorescent bulbs and ballasts, waste oils, and construction debris. The maximum waste depth encountered during field investigation activities is 15 ft. The inactive fill area is heavily wooded and vegetated therefore root mass will be encountered during excavation activities. During boring and well installation activities, groundwater was generally encountered in clayey sand zones at depths up to 35 ft bgs. Perched groundwater was encountered in some cases in the waste (IT, 2002). Soils underlying the FANWR are mapped as Cumberland gravelly loam, eroded type soil. The thickness of the alluvium ranges from 2 to 15 ft or more (IT, 2002). Shallow native soils are generally classified as a silty clay (i.e., USCS classification of CL or CH).

B. The potential for encountering munitions and explosives of concern (MEC) at LF3 and Fill Area Northwest of Reilly Airfield (FANWR) is deemed to be "low" since this area has already been cleared by the US Army (*Site Specific Final Report M1.01 Parcel and M3 Miscellaneous Property Fort McClellan, Alabama*, March 2003). On-Call MEC support services will be provided during any excavation activities that are conducted. On-Call MEC support services include providing initial MEC awareness training and periodic site inspections. Construction personnel will be given a safety briefing by the JPA's MEC Management Team. Personnel will be instructed on visual MEC recognition, MEC hazards, and MEC notification procedures. If MEC is encountered during construction activities, a reassessment of the site will be conducted by the JPA's MEC Management Team to determine if the potential for encountering MEC is still low. If the potential for encountering MEC is raised, there may be a need for additional construction support to include surface and subsurface clearance of MEC in the excavation footprint prior to conducting any further intrusive activities.

C. The potential for encountering Characteristic Hazardous Waste and Friable Asbestos at LF3 and FANWR is deemed to be low based upon the fill records available for the facilities. Chemical Awareness training and periodic site inspections will be provided to the Contractors and Subcontractors by the Owner or the Owner's Representative.

Disposal of these wastes, if encountered is discussed in Section 1.10 of Section 01100of this Specification.

D. The history of operations and summary of nature and extent of contamination for FANWR are summarized in Section 4 of the *Final (Revision 1) Corrective Measures Implementation Plan* (CMI Plan), dated October 2006. Test pit logs from the investigation activities conducted at the FANWR are provided as Appendix A of the CMI plan.

## PART 3 EXECUTION

### 3.01 MATERIALS HANDLING

A. The Contractor shall follow procedures described in the Materials and Waste Handling Work Plan unless prior approval is received from the Construction Manager.
   1. The Contractor shall coordinate excavation procedures with ground conditions encountered in the field as necessary to provide stable slopes and stable, undisturbed subgrade materials, and to ensure the safety of all persons and equipment at all times during construction.
   2. At all times during the work, the Contractor shall make waste cut areas available to the Engineer, CQA Consultant, and Construction Manager, or their representatives, to observe conditions and make judgments regarding the movement of waste materials.
   4. The Contractor shall be prepared to perform any regrading, handling, and compacting of material as necessary to allow for placement of all waste materials under the cap. Placed waste materials shall be compacted by a minimum of 4 passes with a padfoot compactor and shall be placed in a maximum loose lift thickness of 10 in.
   5. The contractor shall manage liquids generated from excavation and placement at FANWR by containerizing, pumping and storing liquids in drums or frac tanks. Liquids will be permitted to be used for dust suppression and moisture conditioning for the project with the approval of the Construction Manager.

### 3.02 VERIFICATION OF WASTE REMOVAL

A. After completion of excavation and prior to placement of cap materials and structural fill, intermediate surveys shall be conducted to document final excavation limits, waste

thickness, and bottom of soil cap layers. Verification of final waste removal will be made by visual observation by the Construction Manager.

## 3.03 TEMPORARY STAGING OF SOILS

A. The Contractor shall designate temporary material handling and staging areas onsite. Waste materials will remain within the cap area at all times.
   1. Site locations to be used for material handling and staging shall be defined by the Contractor in the Materials and Waste Handling Work Plan.
   2. These areas shall include a means to prevent runon or runoff of surface water.

## 3.04 EROSION CONTROL

A. The Contractor shall prevent erosion of exposed cut and fill areas and newly deposited fill soil at all times. To prevent erosion, the Contractor shall provide either silt fence and straw bales to divert and slow water runoff from rains or sufficient plastic sheeting and supplies to place the sheeting over exposed areas. The Contractor shall apply either tacking agent or sheeting as needed to prevent erosion while grading or filling is underway. The Contractor shall additionally follow applicable federal and state regulations for erosion and sedimentation control.

## 3.05 CARE OF DRAINAGE WATER

A. Grading shall be performed as may be necessary to eliminate surface water accumulation on and runoff onto or off of waste materials. Silt fences and diversion control berms shall be provided as needed.

## 3.06 CLEANUP

A. Upon completion of work in this Section, rubbish and debris shall be removed from the job site. All construction equipment and implements of service shall be removed and the entire area involved shall be left in a neat, clean and acceptable condition.

[END OF SECTION]

# SECTION 02208

# CRUSHED STONE ROADWAYS AND WALKING PATHS

# SECTION 02208

# CRUSHED STONE ROADWAYS AND WALKING PATHS

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. Under this Section, the Contractor shall furnish equipment, materials, tools, labor and services necessary to construct and maintain crushed stone roadways, trails, drives and parking areas, as indicated on the Drawings or required for the Work.

### 1.02 SUBMITTALS

A. Submit the following to the Construction Manager no less than 14 calendar days prior to stone use for review.

1. the source of the stone;
2. the method used by the supplier to achieve the required gradation of the stone material; and
3. certification from the supplier that the stone meets the material requirements of the section.
4. geotextile manufacturer, model, materials property summary, and certification from the Manufacturer that the geotextile meets the requirements of this section.

## PART 2 PRODUCTS

### 2.01 CRUSHED STONE MATERIALS

A. Type I materials shall be defined as: Materials that conform to the requirements of Aggregate Base for crushed limestone, as indicated in Section 825 of the Alabama Department of Transportation Standard Specifications for Highway Construction, 2006 edition, Type B crushed aggregate, which is a 50/50 blend of ALDOT 410 and 810 coarse aggregate sizes.

B. Type II materials shall be defined as: Materials that conform to the requirements of Section 801 of the Alabama Department of Transportation Standard Specifications for Highway Construction, 2006 edition, No. 3 and No. 410 coarse aggregate.

C. Type III materials shall be defined as: Materials that conform to the requirements of Section 801 of the Alabama Department of Transportation Standard Specifications for Highway Construction, 2006 edition, No. 810 coarse aggregate.

## 2.02 GEOTEXTILE

A. Geotextile shall be Mirafi x-series woven polypropylene geotextile model 500x as manufactured by Ten Cate Mirafi or Construction Manager/Engineer approved equal.

# PART 3 EXECUTION

## 3.01 PREPARATION

A. Ruts, holes, defects or soft yielding places which occur in any portion of the subgrade from any cause, shall be corrected and rolled until firm before the geotextile and aggregate base is placed. The subgrade shall be compacted in accordance with Section 02200. Geotextile shall be placed as per manufacturer's recommendations.

## 3.02 PLACEMENT

A. Earthwork fill construction for the Highway 21 entrance road shown in the Drawings shall be performed in accordance with the requirements for Structural Fill as provided within Section 02200 and the CQA Plan. The Contractor shall grade and fill ruts to provide a relatively smooth base to install geotextile over. The Contractor shall proof roll the road base a minimum of two (2) passes using a fully loaded 25 ton off road end dump.

B. The Contractor shall install panels of geotextile with a minimum three (3) feet overlap between geotextile panels. Panels shall be installed flat, taught, and with minimal wrinkles. Laborers shall be used to hold the geotextile taught during stone placement. Geotextile shall be installed underneath the required aggregates as shown in the Drawings for the roadway and walking path locations described within this Specification.

C. The Contractor shall place the base aggregate by back-dumping onto the geotextile. Stone shall be spread by grading down from the back-dumped aggregate pile using a dozer or motor grader. A smooth drum vibratory roller shall be used to achieve compaction. A minimum of four passes by the smooth drum roller shall be performed on the aggregate base.

D. Type I material shall be used in the construction of the Landfill 3 Access Road (Drawing 4), Fill Area Northwest of Reilly Airfield Gobbler Road reconstruction and Parking Area (Drawing 9), and the Reilly Lake Road reconstruction (Drawing 8). Minimum aggregate thickness for these roadways shall be 6 inches.

E. Type II material shall be used in the construction of: the Construction Access Roads from Alabama State Route 21 to Reilly Airfield (Drawings 4 and 6), and the improvement of Gobbler Road adjacent to Landfill 3 connecting to the Construction Access Road. Aggregate thickness for these roadways shall be 5 inches of No. 3 coarse aggregate overlain by 3 inches of No. 810 coarse aggregate.

F. Type III material shall be used in the construction of the Walking Path shown on Drawing 8. Aggregate thickness shall be 6 inches of Type III material.

## 3.03 CLEAN-UP

A. Work and the adjacent areas and surfaces affected shall be kept free and clear from all debris. During and upon completion of Work herein specified, all debris, unused materials, and equipment caused by work of this section shall be removed from the site and the work shall be left in a clean, acceptable condition.

## 3.04 MAINTENANCE

A. The Contractor shall maintain all roadways free of ruts, holes, defects, soft yielding places, and areas in which water ponds for the duration of the project. The Contractor shall maintain adequate aggregate base for proper functioning of roadways. The Construction Manager will determine, in its sole discretion, whether the roadways are functioning adequately. The Contractor shall also keep all roadways free and clear of all erosional material and/or debris.

B. Upon completion of construction activities, the Contractor shall add aggregate a necessary to provide to the Owner with the required thickness of aggregate as specified within this Specification for each segment of roadway. Roadways shall be regraded to promote surface water drainage off of the roadway. Roadways shall be recompacted with two (2) passes of a smooth drum roller. Soft or loose areas detected shall be reconstructed to meet the requirements of the specification prior to demobilization.

C. This maintenance requirement shall continue for one year following acceptance of construction by the Construction Manager. The Contractor shall commence post-construction maintenance within two weeks of notification that maintenance is required. Maintenance shall be conducted to the satisfaction of the Construction Manager. The Contractor shall be responsible for road maintenance associated with their O&M activities during the one-year maintenance period. While not anticipated, if other contractors are working in the area, road maintenance may be bid out as a separate task order.

D. If during construction activities, the surface of Reilly Airfield deteriorates, the Contractor shall replace the surface with a gravel section as shown on Drawing 17, Detail 25.

[END OF SECTION]

# SECTION 02209

# RIPRAP AND DRAINAGE AGGREGATE

# SECTION 02209

# RIPRAP AND DRAINAGE AGGREGATE

## PART 1 GENERAL

### 1.01 SCOPE

A. This Section includes riprap products and placement.

### 1.02 SUBMITTALS

A. Submit the following to the Construction Manager no less than 14 calendar days prior to riprap use for review.
   1. the source of the riprap;
   2. the method used by the supplier to achieve the required gradation of the riprap material; and
   3. certification from the supplier that the riprap meets the material requirements of this Section.

### 1.03 CONSTRUCTION QUALITY ASSURANCE

A. The placement of riprap will be monitored by the CQA Consultant.

B. The Contractor shall be aware of the activities required of the CQA Consultant by the CQA Plan and account for these activities in the construction Schedule.

C. The Contractor shall correct deficiencies and nonconformances identified by the CQA Consultant at no additional cost to the Owner.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Furnish Class 3 riprap conforming to requirements of ALDOT, Section 814 of the Alabama Department of Transportation, Standard Specifications for Highway Construction, 2006 edition.

B. Furnish No. 1 coarse aggregate conforming to requirements of ALDOT, Section 801 of the Alabama Department of Transportation, Standard Specifications for Highway Construction , 2006 edition.

C. Furnish geotextile separator as required by Section 02720.

## PART 3 EXECUTION

### 3.01 PLACEMENT

A. Place riprap to the thickness, elevations, and locations indicated on the Drawings.

B. Place riprap upon geotextile over prepared layers as shown on the Construction Drawings.

C. Carefully place riprap to avoid segregation or disturbance or damage of the underlying material. Place the material in such a manner as to produce a well graded mass of riprap with the minimum practicable percentage of voids. Distribute the larger pieces throughout the entire mass such that the finished riprap is free from objectionable pockets of small or large pieces.

D. Do not place riprap by dumping into chutes or by similar methods likely to cause segregation of various sizes.

E. Do not place riprap in a manner that causes damage to an underlying geotextile separator. Repair damaged geotextile as directed by the CQA Consultant and in accordance with Section 02720.

F. Class 3 riprap shall be used in the emergency spillway labeled on the Drawings as riprap outlet protection for the surface water/sediment detention pond.

G. No. 1 coarse aggregate shall be used in the final cover system surface water drainage swales and downdrain locations within LF3 (shown on the Drawings as riprap slope protection for downdrain and outlet pipe locations) and FANWR (shown on the Drawings as Stone Core for the principal spillway).

## 3.02 SURVEY CONTROL

A. Survey the location of riprap placement in accordance with Section 02010.

## 3.03 TOLERANCES

A. Place the riprap to the minimum thicknesses as indicated on the Drawings.

[END OF SECTION]

# SECTION 02720

# GEOTEXTILE SEPARATOR

# SECTION 02720

# GEOTEXTILE SEPARATOR

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section includes geotextile products and installation.

### 1.02 REFERENCES

A. Latest version of American Society for Testing and Materials (ASTM) Standards shall be used:

1. ASTM D 3786. Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabric-Diaphragm Bursting Strength Test Method.
2. ASTM D 4355. Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water.
3. ASTM D 4533. Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
4. ASTM D 4833. Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.
5. ASTM D 4873. Standard Guide for Identification, Storage, and Handling of Geotextiles.
6. ASTM D 5261. Standard Test Method for Measuring Mass Per Unit Area of Geotextiles.

B. Federal Standard No. 751a - Stitches, Seams, and Stitching.

### 1.03 SUBMITTALS

A. Submit the following to the Construction Manager for review not less than 21 calendar days prior to use.

1. Geotextile Manufacturer and product name.
2. Certification of minimum average roll values and the corresponding test procedures for all geotextile properties listed in Table 02720-1.

3. Projected geotextile delivery dates.

B. Submit to the Engineer for review at least 14 calendar days prior to geotextile placement, manufacturing quality control certificates for each roll of geotextile as specified in this Section.

## 1.04 CONSTRUCTION QUALITY ASSURANCE

A. The installation of geotextiles will be monitored by the CQA Consultant as required in the CQA Plan.

B. The Contractor shall be aware of the activities required of the CQA Consultant by the CQA Plan and shall account for these activities in the construction schedule.

C. The Contractor shall correct deficiencies and nonconformances identified by the CQA Consultant at no additional cost to the Owner.

# PART 2 PRODUCTS

## 2.01 GEOTEXTILE

A. Furnish geotextile products with minimum average roll values (95 percent lower confidence limit) meeting or exceeding the required property values in Tables 02720-1 (for geotextile separators).

B. Furnish geotextiles that are stock products.

C. Furnish geotextiles that are manufactured from first quality polymers, with not more than 20 percent reclaimed polymer used in production.

D. Adjacent geotextile panels shall be overlapped a minimum of two (2) feet.

## 2.02 MANUFACTURING QUALITY CONTROL

A. Sample and test the geotextile to demonstrate that the material conforms to the requirements of this Section.

B. Perform manufacturing quality control tests to demonstrate that the geotextiles properties conform to the values specified in Table 02720-1. Perform as a minimum, the following manufacturing quality control tests at a minimum frequency of once per 50,000 square feet of the actual rolls produced and delivered to the project site:

| Test | Procedure |
|---|---|
| Mass per unit area | ASTM D 5261 |
| Grab strength | ASTM D 4632 |
| Tear strength | ASTM D 4533 |
| Puncture strength | ASTM D 4833 |
| Burst strength | ASTM D 3786 |

C. Submit quality control certificates signed by the geotextile Manufacturer quality control manager, and notarized. The certificates shall state that the geotextiles are continuously inspected and are needle-free. The quality control certificates shall also include: lot, batch, and roll number and identification; and results of manufacturing quality control tests including description of test methods used.

D. Do not supply any geotextile roll that does not comply with the manufacturing quality control requirements.

E. If a geotextile sample fails to meet the quality control requirements of this Section, sample and test rolls manufactured at the same time or in the same lot as the failing roll. Continue to sample and test the rolls until the extent of the failing rolls are bracketed by passing rolls. Do not supply failing rolls.

## 2.03 PACKAGING AND LABELING

A. Supply geotextiles in rolls wrapped in impermeable and opaque protective wrapping. Wrapping which becomes torn or damaged shall be repaired with similar materials.

B. The geotextile manufacturer shall mark or tag geotextile rolls with the following information:
   1. manufacturer's name;
   2. product identification;
   3. lot or batch number;
   4. roll number; and
   5. roll dimensions.

C. Geotextile rolls not labeled in accordance with this Section or on which labels are illegible shall be rejected and replaced.

## 2.04 HANDLING AND STORAGE

A. Protect geotextiles from sunlight, moisture, excessive heat or cold, puncture, mud, dirt, and dust or other damaging or deleterious conditions. Follow all geotextile manufacturer recommendations for handling and storage.

B. Store geotextile rolls on palates or other elevated structures. Do not store geotextile rolls directly on the ground.

C. Outdoor storage of rolls shall not exceed the manufacturer's recommendation or longer than 6 months, whichever is less.

# PART 3 EXECUTION

## 3.01 PLACEMENT

A. Handle geotextiles so as to ensure they are not damaged in any way.

B. Take necessary precautions to prevent damage to underlying layers including rutting during placement of the geotextiles.

C. After unwrapping the geotextiles from its opaque cover, do not leave them exposed for a period in excess of 15 calendar days.

D. If white colored geotextiles are used, take precautions against "snowblindness" of personnel.

E. Anchor or weight geotextile with sandbags, or the equivalent, to prevent damage from wind. Install sandbags during placement and maintain them until overlying material is placed.

## 3.02 SEAMS AND OVERLAPS

A. Continuously overlap adjacent geotextile panels a minimum of 2 feet.

B. Do not install horizontal seams on slopes that are steeper than 10 horizontal to 1 vertical. Seams shall parallel with the slope, not across.

## 3.03 REPAIR

A. Repair any holes or tears in the geotextiles using a patch made from the same geotextile material. Extend geotextile patches a minimum of 3 feet beyond the damaged area. Should any tear exceed 50 percent of the width of the roll, remove and replace that panel.

B. Remove any soil or other material that may have penetrated the torn geotextiles.

## 3.04 PLACEMENT OF SOIL AND AGGREGATE MATERIALS

A. Place materials on top of geotextiles in such a manner as to ensure that:
   1. the geotextiles and the underlying materials are not damaged; and
   2. slippage does not occur between the geotextile and the underlying layers during placement.

# TABLES

## TABLE 02720-1

## REQUIRED PROPERTY VALUES FOR GEOTEXTILE SEPARATOR

| PROPERTIES | QUALIFIER | UNITS | SPECIFIED[1] VALUES | TEST METHOD |
|---|---|---|---|---|
| Type | | | | |
| nonwoven | | | | (-) |
| Polymer composition | minimum | % | 95 polypropylene or polyester by weight | (-) |
| Mass per unit area | minimum | $oz/yd^2$ | 8 | ASTM D 5261 |
| Mechanical Requirements | | | | |
| Grab strength | minimum | lb | 180 | ASTM D 4632[2] |
| Tear strength | minimum | lb | 75 | ASTM D 4533[3] |
| Puncture strength | minimum | lb | 75 | ASTM D 4833[4] |
| Burst strength | minimum | psi | 350 | ASTM D 3786 |
| Durability | | | | |
| Ultraviolet Resistance | minimum | % | 70 | ASTM D 4355 |

Notes:

(1) All values represent minimum average roll values.
(2) Minimum of values measured in machine and cross machine directions with 1 inch clamp on Constant Rate of Extension (CRE) machine.
(3) Minimum value measured in machine and cross machine direction.
(4) Tension testing machine with a 1.75-inch diameter ring clamp, the steel ball being replaced with 0.31-inch diameter solid steel cylinder with flat tip centered within the ring clamp.
(5) mm = millimeter
% = percent
$oz/yd^2$ = ounce per square yard
sec = second
lb = pound
psi = pound per square inch

[END OF SECTION]

# SECTION 02830

# SPLIT RAIL FENCE

# SECTION 02830

# SPLIT RAIL FENCE

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section includes general procedures for installation of the split rail fence shown west of Fill Area Northwest of Reilly Airfield.

### 1.02 SUBMITTALS

A. Submittals shall be made in accordance with requirements set forth in Section 01350 of the Specifications.

B. The Contractor shall submit color samples of stain to the Construction Manager 14 calendar days prior to installation. Color samples shall be provided on sample lumber if requested by Construction Manager. The Construction Manager shall instruct the Contractor as to which color to stain the split rail fence.

C. The Contractor shall submit certification that lumber conforms to the requirements of this specification 14 calendar days prior to installation.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Lumber shall be southern pine, conforming to current grading rules of the Southern Pine Inspection Bureau (SPIB), and pressure- treated with water-borne salts (ACA of CCA) in accordance with the American Wood Preservers Bureau (AWPB) standard lp22-80. All lumber shall be SPIB No. 2 sr, dry, moisture content 19% (MC19). Both the SPIB and the AWPB stamp must appear on all lumber. All dimensions are based on dry wood.

B. Rails are to be sanded down to form rounded edges and provide a smooth surface.

C. All bolts, washers, nuts, and connection screws to be galvanized. Nuts, bolts and screws to be countersunk.

D. Staples and tags shall be removed from lumber prior to final acceptance.

E. Wood shall be pressure treated lumber.

F. Posts and other wood within ground contact shall be ground contact pressure treated lumber.

G. Water based stain and sealant to be applied to wood after construction per manufacturer's specifications. Wetland and other vegetated areas to be PROTECTED DURING APPLICATION. Color shall be approved by Construction Manager.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Split rail fence to be constructed to the dimensions, alignment, and method of connections as shown in the Drawings.

### 3.02 CLEANUP

A. Upon completion of work in this Section, rubbish and debris shall be removed from the job site. All construction equipment and implements of service shall be removed and the entire area involved shall be left in a neat, clean and acceptable condition.

[END OF SECTION]

# SECTION 11001

# TEMPORARY STORAGE TANKS

# SECTION 11001

# TEMPORARY STORAGE TANKS

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. This Section covers the requirements that apply to the selection, use and installation of tanks for the storage of the decontamination water and fuel at the site. It establishes the minimum quality and performance levels for structural design, durability, materials and workmanship.

### 1.02 SCOPE OF WORK

A. The Contractor shall provide equipment, supplies, facilities and personnel to select, install, erect, use and remove the tanks specified herein as required to store fuel and decontamination water. The tanks covered by this Section include the following:
   1. Fuel Storage Tanks. The Contractor shall provide fuel storage tanks with secondary containment as required to perform the work.
   2. Decontamination Water Storage Tanks. The Contractor shall provide tanks to store decontamination water on site prior to pumping into tank trucks for transport to an approved offsite treatment facility. The number of tanks provided will be adequate to store decontamination water generated on site during construction, allowing for sampling, testing of water prior to use onsite or shipping to an offsite treatment facility.

### 1.03 INTENDED SERVICE

A. The tanks are intended to contain materials with the following properties:
   1. Diesel Fuel:
      a. Viscosity - 50 Saybolt Seconds Universal @ 30°F; 36 Saybolt Seconds Universal @ 100°F;
      b. Specific Gravity - 0.85; and
      c. Flash Point – 100°F.
   2. Decontamination Water:
      a. Specific Gravity – 1; and
      b. Temperature-ambient (20°F to 90°F).

## 1.04 GUARANTEES

A. The Contractor shall guarantee that tanks brought to the site perform satisfactorily and in accordance with the requirements specified herein.

## 1.05 SUBMITTALS

A. Submittals required under this section shall be made in accordance with requirements set forth in Section 01350 unless stated otherwise. Submittals under this section include, but are not limited to:
   1. a plan showing tank locations, to be submitted prior to tank installation;
   2. the proposed design of the decontamination water tanks and of secondary containments, to be submitted prior to tank fabrication;
   3. manufacturer's information on tank materials and construction, to be submitted prior to tank fabrication;
   4. results of tank testing, to be submitted prior to tank use; and
   5. guarantees.

B. Tank inspection reports shall be submitted with the Project Record Documents.

# PART 2 - PRODUCTS

## 2.01 TANKS

A. Diesel Fuel Tanks. The tanks may be new or used, but shall be serviceable and adequate for the intended purpose. The tanks shall conform to all RCRA requirements and shall meet the minimum requirements listed below.
   1. Tanks shall conform to the American Petroleum Institute (API) standards for oil storage.
   2. Tanks shall conform to National Fire Protection Association and Local Fire Code standards for aboveground fuel tanks.
   3. Tanks shall be equipped with inlet and drain nozzles, pressure release vents and ports large enough to access tank interiors for decontamination and cleaning.
   4. Tanks shall be grounded to prevent the buildup of static electric charges.
   5. If a tank's capacity exceeds 500 gallons, it shall be equipped with internal fill pipes that run to within 6 inches of the tank bottom.
   6. Tanks shall be labeled as being "Flammable Liquids" (UN Class 3 Label) and shall not be stored in areas where vapors can build up and cause an explosion hazard.
   7. Tanks shall not be elevated and shall not be of gravity feed type.

B. Decontamination Water Holding Tanks. The tanks may be new or used, but shall be clean, serviceable and adequate for the intended purpose. The Contractor shall provide tanks for the storage of equipment and personnel decontamination water. The tanks shall meet the minimum requirements listed below.
   1. Tanks shall be of a design that can be easily installed and require only a level compacted earthen foundation for setup.
   2. Tanks shall be simple to erect and be constructed of polyethylene or other resistant material.
   3. Tanks shall be double lined or constructed of a material that is chemically compatible with the water to be contained and shall be resistant to ultraviolet degradation. Liners shall be protected from the subgrade with polyethylene underlay sheets.
   4. Tanks shall be filled and drained with through-the-wall fill or drain ports. Each tank shall be fitted with three ports. One port shall be capable of draining the top one-third of the tank; one port shall drain the middle one third, and one port shall drain the bottom one-third of each tank.
   5. Tank walls shall be adequately supported and protected to prevent collapse, rupture or puncture under normal conditions.
   6. Tanks shall be equipped with liquid level sensors that will actuate a control device to prevent overfilling.

## PART 3 - EXECUTION

### 3.1 TANK PLACEMENT AND ERECTION

A. The Contractor shall prepare the site for the placement, erection and/or installation of tanks as appropriate. No herbicide shall be used around tank bases at any time.

B. Fuel Storage Tanks
   1. The Contractor shall provide secondary containment dikes. Secondary containment shall:
      a. be designed to contain 110 percent of the capacity of the tank;
      b. be free of cracks or gaps;
      c. be completely lined with an impermeable membrane compatible with the tank contents;
      d. surround the tank completely to prevent the tank's contents from contacting surrounding areas of the site; and
      e. be designed or operated to prevent runon or infiltration of precipitation into the secondary containment system.
   2. Tank overflow basins constructed of a material that is compatible with the contents of the tank shall be acceptable for secondary containment. Alternate types of

secondary containment must be approved by the Construction Manager. Secondary containment shall be sufficiently durable to remain intact throughout the project with minimal repair.

C. Decontamination Water Holding Tanks. Tank installation shall be per manufacturer's recommendations and shall include, but not be limited to, the performance of the following tasks:
   a. grading, compacting and raking of the subgrade prior to erection;
   b. assembly of tank, if necessary;
   c. installation of protective liner underlay;
   d. Installation of liner in containment dike area; and
   e. construction of secondary containment dikes capable of containing 110 percent of the capacity of one tank in the event of a failure that results in the release of a tank's contents (Secondary containment shall be sufficiently durable to remain intact throughout the project with minimal repair).

## 3.02 TANK INSPECTIONS

A. The Contractor shall conduct weekly inspections of the tanks. Inspections shall determine if there is evidence of leaks or deterioration of the tanks. An inspection report shall be written to describe the results of each inspection.

## 3.03 REPLACEMENT

A. The Contractor shall repair or replace any tanks that leak or fail during the implementation of the project at no additional cost.

## 3.04 REMOVAL

A. The Contractor shall remove tanks brought to the site at the completion of the work. Tanks and tank areas shall be adequately decontaminated prior to removal from the site.

[END OF SECTION]

# SECTION 11002

# PIPING AND APPURTENANCES

# SECTION 11002

# PIPING AND APPURTENANCES

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This Section includes the requirements for the installation and testing of pipes and appurtenances. It applies to temporary water lines, and corregated metal pipe (CMP). It does not apply to flexible lines or hosing that may be used on site.

### 1.02 SCOPE OF WORK

A. The work shall include, but not be limited to, providing labor, materials, services, supplies and equipment necessary to furnish and install piping for the transfer of the items listed below:
   1. Water. The Contractor shall install additional piping, valves and other appurtenances as required to provide water to the site for vegetative maintenance, compaction of onsite materials, dust control, equipment and personnel decontamination facilities, and emergency showers and eyewash stations.
   2. CMP. CMP shall be used in LF3 area downdrains and in FANWR principal spillway.

### 1.03 CONTRACTOR SUBMITTALS

A. The Contractor shall submit schematic layout drawings that show the proposed location of installation of any additional water service piping and appurtenances. The drawings shall be reviewed and approved by the Construction Manager prior to the installation of the piping. The drawings shall identify the type and size of piping used, length of run, locations of lines, pipe joints, fittings, couplings, valves, supports, and other details as required to define the piping systems adequately for review prior to construction.

B. The Contractor shall submit Manufacturer's information on all piping material, together with Manufacturer's recommended installation practices.

## PART 2 PRODUCTS

### 2.01 GENERAL

A. Piping, fittings, couplings, valves and appurtenances shall be new, free from defects or contamination, and wherever possible, be standard off-the-shelf items.

B. CMP shall be as defined in ALDOT Standard Specifications for Highway Construction, 2006 edition, Section 850.02 A and B and coatings as defined in 850.02C(2).

C. Pipe embedment fill shall classify as a sandy clay according to the Unified Soil Classification System and shall have no more than 5 percent retained on the ¾ inch sieve.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. The Contractor shall fabricate and install temporary water supply piping in a secure manner which prevents leaks and failures for the duration of the project. All other piping installation shall be in accordance with the Manufacturer's recommendations. Piping shall be cut accurately and worked into place without springing or forcing.

B. Pipelines shall be run straight and true with a minimum use of offsets and couplings as required for clearances and flexibility. Change in direction of pipe shall be made with fittings, except as specifically approved by the Construction Manager. Bent pipe showing kinks, wrinkles, or other malformations will not be acceptable. Changes in pipe size shall be made only with fittings. Flanges or unions shall be provided at final connections to equipment and valves to facilitate dismantling.

C. CMP shall be installed as shown in the Drawings.

D. Pipe embedment fill shall be compacted to 95% of standard proctor.

[END OF SECTION]

# SECTION 11003

# EMISSION CONTROL EQUIPMENT

# SECTION 11003

# EMISSION CONTROL EQUIPMENT

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. This Section covers the requirements for equipment, facilities, and supplies that shall be made available by the Contractor to prevent air emissions during the recovery and handling of decontamination water, soils, and waste during excavation and regrading of site soils prior to construction of the cap at the site. Air emissions include any releases of organic vapors or particulates into the air.

### 1.02 SCOPE OF WORK

A. The Contractor shall provide the equipment, supplies, facilities and personnel required to prevent air emissions of volatile organic compounds or particulate matter from the site. The Contractor shall install, operate and maintain emission control equipment, supplies and facilities. The Contractor shall follow the provisions specified here.

B. To control the release of organic vapors and particulates from the soils during excavation processes the Contractor shall provide:
   1. liquid and vapor resistant tarps or sheeting that can be used to cover stockpiles and areas of excavation;
   2. portable water sprinkling or spraying equipment to keep soils damp, while excavating and transporting; and
   3. other equipment as required.

### 1.03 SUBMITTALS

A. The Contractor shall prepare and submit a Comprehensive Spill and Emission Control Plan as required by Section 01350.

## PART 2 - PRODUCTS

### 2.01 TARPS AND SHEETING

A. Tarps and sheeting shall be constructed of materials capable of containing volatile emissions and preventing infiltration of moisture. They shall be durable and capable of being used repeatedly to cover different sources of air emissions. Potential materials of construction include fabric or synthetic fiber type materials or plastic type sheeting. Fabric type tarps shall be coated with a sealant such as polyvinyl chloride that is capable of preventing the flow of volatile compounds and moisture through the fabric.

### 2.02 WATER SPRINKLING DEVICES

A. Water transport and sprinkling vehicles shall be capable of operating on the type of terrain encountered on this site and be capable of transporting the volume of water needed to perform the work without delays.

## PART 3 - EXECUTION

### 3.01 GENERAL

A. The Contractor shall be prepared to use or implement the emission control equipment described herein in the event that air monitoring indicates there is a need or whenever there is concern about the potential for air emissions.

### 3.02 TARPS AND PLASTIC SHEETING

A. The Contractor shall be prepared to cover any potential sources of air emissions with tarps or plastic sheeting in the event that air monitoring indicates a need or there is concern about the potential for releases or emissions.

[END OF SECTION]

# SECTION 11004

# DECONTAMINATION EQUIPMENT

# SECTION 11004

# DECONTAMINATION EQUIPMENT

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. This section covers the requirements for decontamination equipment that shall be provided at the site. The equipment shall be used to clean and decontaminate equipment and vehicles that have or are suspected to have contacted hazardous substances present at the site. Decontamination equipment shall include but not be limited to the following: tanks, pumps, compressors, heaters, hose nozzles, reels, piping and other components and appurtenances required to provide and operate a high pressure hot and cold wash and steam cleaning system. A temporary decontamination pad shall also be provided. The equipment may be new or used but shall be serviceable and adequate for the intended purpose.

### 1.02 SUBMITTALS

A. The Contractor shall submit a plan showing the location and layout of the equipment decontamination facility to the Construction Manager for approval 14 days prior to installation.

B. The Contractor shall submit details of the equipment decontamination facility design to the Construction Manager for approval 14 days prior to installation at the site.

## PART 2 PRODUCTS

### 2.01 EQUIPMENT

A. Pumps. Decontamination wash solution pumps shall have a minimum 3 gpm flowrate at a 1,000 psig discharge pressure. They shall be equipped with internal pressure relief and safety shut-off valves.

B. Hoses.
   1. Cold Water/Wash. Cold water/wash solution hoses shall be high-pressure water hoses constructed of multiple plies of reinforcing fabric. The safe working pressure shall be 2,000 psig and the minimum burst pressure shall be 10,000 psig. The hose length shall be such that all locations on the decontamination pad can be accessed without intermediate connections. No splices shall be allowed in the hose.
   2. Hot Water Wash/Steam. Hot water wash solution/steam hoses shall be insulated and suitable for continuous services at 350°F. Hoses shall have a safe working pressure at least twice the

maximum discharge pressure of the hot water wash/steam supply equipment and a minimum burst pressure of 10,000 psig. The hose length shall be such that all locations on the decontamination pad can be accessed without intermediate connections. No splices shall be allowed in the hose.

C. Water Heating/Steam Equipment. The Contractor shall provide portable water heating equipment capable of providing a minimum of 3 gpm of water at 180°F or 3 gpm of steam at 325°F.

D. Piping and Valves. All piping and valves shall be designed and capable of operating in accordance with ANSI/ASME B31.1-1980.

E. Nozzles. Nozzles shall be equipped with a shutoff valve or lever and be capable of being adjusted to operate as a spray or stream discharge and a full range in-between.

F. Temporary Equipment Decontamination Pad. A temporary pad shall be provided to handle the decontamination of equipment. This temporary pad shall have sufficient strength and size to accommodate any piece of equipment that might contact hazardous substances, a sump or other means of containing and collecting the generated wastewater, and provisions to minimize overspray and prevent additional site contamination. Liners used to construct the decontamination pad shall be constructed of HDPE material of a minimum thickness of 40 mil and be placed in a manner which precludes puncturing or tearing of the material. Field seams shall be welded as per manufacturer's recommendations. This facility could be a temporary constructed facility or a fabricated portable facility. The Contractor shall submit details of the proposed facility as part of the Materials and Waste Handling Work Plan as required by Section 01350 of the Specifications.

## PART 3 EXECUTION

### 3.01 CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall be responsible for installing decontamination equipment and for maintaining the equipment in safe and working condition. Equipment installation shall conform to the manufacturer's recommendations. The equipment shall be installed for use at the decontamination pad to perform decontamination as indicated by the Specifications and in the Health and Safety Plan.

[END OF SECTION]